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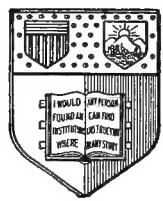

FRUIT-GARDENING

CONTAINING

COMPLETE PRACTICAL DIRECTIONS

FOR

THE SELECTION, PROPAGATION AND CULTIVATION OF ALL KINDS OF FRUIT

BY

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FRUIT-GARDENING.

CHAPTER I.

SELECTING FRUIT-TREES IN THE NURSERY.

In the choice of fruit-trees, all possible care and attention are necessary; for, to have trees that do not answer the expectations of the proprietor, is a great disappointment. As the young gardner may need such directions calculated to govern him in his choice, I shall endeavor to furnish them. Whatever species or varieties of fruit-trees are wanted, choose those trees that are vigorous and straight, and of a healthy appearance. Whether they have been grafted or budded, be careful to select such as have been worked on young stocks. Grafts and buds inserted into old, crooked, stunted stocks, seldom succeed well. Trees that are healthy, have always a smooth, clean, shining bark. Such as are mossy, or have a rough, wrinkled bark, or are the least affected by canker, should be rejected. Canker is discoverable in the young wood, and generally two or three inches above the graft or bud. If the tree be an Apricot, Nectarine, Peach, or Plum, and any gum appears on the lower part of it, do not fix upon that. Let the tree you select (if a dwarf) be worked about six inches from the ground, and only one graft or bud should be upon each stock; for when there are more, the tree cannot be brought to so handsome a form.

In some of the following articles, it will be seen that several

descriptions of trees may be transplanted with safety, even when far advanced in growth. When trees of four or five years' growth, after having been headed down, that are healthy, and well furnished with fruit-bearing wood close up to the centre of the tree, can be obtained, they will do very well; but great care is requisite in taking up, removing, and planting such. Let the tree be taken up with as great a portion of the roots as possible, taking care not to bruise, split, or damage them; for want of attention to these points, trees often become diseased. Whenever any roots have been accidentally broken, split, or otherwise damaged in taking up the tree, let them be cut off; or if they cannot be well spared, let the damaged or bruised part be pared clean with a sharp knife, and a portion of grafting-wax be spread over the wound, in order to keep the wet from it, which would otherwise injure the tree.

The necessity of pruning-in and dressing mangled roots is particularly required in trees of the stone fruit, such as Apricots, Nectarines, Peaches, and Plums; for without the application of some remedy, they gum at the roots, which defect, if not counteracted, very materially injures the upper part of the trees, which may become so affected as never to recover afterwards; therefore, great care should be taken not to occasion such injury; and when accidents happen, all due caution and application are necessary to promote a healthy and vigorous growth.

A young tree, likely to do well, should have roots nearly corresponding to the branches; at least, it should have one strong root in a similar proportion to the bole of the tree, with a proper distribution of branching fibres. Healthy roots are always smooth and clear; their color varies a little according to the kind of tree; but the older the roots are, the darker the color is.

After the tree is taken up, be careful, in conveying it to the place where it is to be planted, that the roots are not chafed or rubbed. If trees are to be conveyed to a considerable distance, they should be well guarded by straw, or otherwise, in

order to prevent injury. All damaged or bruised roots should be pruned, as soon as the tree is taken up; but if it be necessary to prune away any sound, good roots, such pruning should be delayed until the time of planting. In pruning away roots, always let them be finished by a clear cut, and in a sloping direction. When trees are planted at an advanced season in the spring of the year, it will be necessary to prune the tops; and if trees are removed that have been trained three or four years, and are not properly supplied with young wood, they must be cut down either wholly or partially, in order to obtain a sufficiency. In practising this upon Apricot and Nectarine trees, always prune so as to have a leading shoot close below the cut, as it is very rare they will push a shoot below, unless there be a lead. This attention is not so particularly required in the Pear, as such will generally push forth shoots, although no leading ones are left; but in all kinds, the younger the wood is, the more certainly are shoots to be produced. If a tree that has been under training for one or two years, should only have one strong, leading shoot, and two or three weaker ones which do not proceed from it, let the weak shoots be pruned clean away, and shorten the strong one, from which a handsome head may afterwards be formed. For further directions as respects pruning or planting fruit-trees, the reader is referred to the succeeding articles on these subjects.

DESCRIPTIVE LIST OF FRUIT.

In order to assist the reader in making a judicious selection of fruit-trees, I have furnished a short description of such species and varieties as are in great repute for every good quality. Previous to making this selection, I carefully perused Prince's Pomological Manual, Kenrick's American Orchardist, Lindley's Guide to the Orchard and Fruit Garden, and Manning's Descriptive Catalogue of Fruits. Besides these important guides, I had the select catalogues of different nurserymen before me, and have chosen such only as have been most

generally recommended. In doing this, I have had difficulties to contend with, of the nature of which none but those who have duly considered the subject can form any idea. The facility with which seedling plants are raised, and the paternal fondness with which people are apt to regard their own seedlings, have occasioned hundreds of names to appear in the various catalogues, which tend not a little to swell the large and increasing list of fruits.

In many instances, the English, French, Spanish, and other names, provisional, local, and barbarous, are given to the same variety; consequently, some fruits appear in the different catalogues under all the varied names; and the patience and labor necessarily requisite for ascertaining which are really distinct varieties, and which are most worthy of cultivation, are correspondingly great.

To exemplify: Suppose from a catalogue of Pears the following names should be selected by a person wishing to plant as many varieties in his orchard—namely, BROWN BEURRE, *Beurre Gris*, *Beurre Rouge*, *Beurre Dore*, *Beurre d'Anjou*, *Beurre d'Or*, *Beurre d'Ambleuse*, *Beurre d'Amboise*, *Poire d'Amboise*, *Isambert*, *Red Beurre*, *Golden Beurre*, *Beurre du Roi*, WHITE DOYENNE, *Doyenne Blanc*, *Doyenne*, *Beurre Blanc*, *Bonne-ante*, *Saint Michael*, *Carlisle*, *Citron de Septembre*, *Kaiserbirne*, *Poire à court queue*, *Poire de Limon*, *Valencia*, *Poire de Neige*, *Poire de Seigneur*, *Poire Monsieur*, *White Beurre*. Here is a list of twenty-nine kinds, as the purchaser supposes, but when the trees produce their fruit, he finds, to his great disappointment and mortification, that he has only two varieties, namely, the Brown Beurre and the White Doyenne.

In making out the descriptive lists, I have generally adopted the names given in the catalogues of the most celebrated nurserymen, as a heading; and have caused the synonymes, or names by which the same variety is known, or has been called, to be printed in *italics;* thus, my lists of about four hundred varieties of the various kinds of fruit, will embrace what has

been deemed by some as different varieties, perhaps to the number of nearly two thousand.

In preparing the following articles, the object has been to furnish information which would entertain as well as instruct the reader. Besides the authorities quoted, I have gleaned from those inexhaustible treasures to horticulturists, Loudon's Encyclopædia of Plants, and that of Gardening; but on account of the brevity necessarily observed throughout this work, it has been found impracticable to give many entire extracts. Suffice it to say, that the historical facts are generally collected from these sources.

TRAINING AND PRUNING FRUIT-TREES AND VINES.

In training and pruning fruit-trees and vines, particular attention is required. To supply a tree with a sufficiency of vegetable juices, there must necessarily be living bark and wood in an uninterrupted succession from the root to the extremities of the branches. Pruning, therefore, is useful to remedy any defect, as well as to take off superfluous wood, and prevent unnecessary waste of the sap. Pruning may be performed at different seasons of the year, according to the kinds of fruit, which will be shown under each head as we proceed.

In the spring or summer pruning, be careful not to destroy the germs of future fruits; but merely remove all unserviceable sprigs. In the winter season, make your selection from the wood-shoots of the preceding year; and keep those which appear the most healthy, and cut away those which seem redundant. Beginners had better prefer the spring, as the buds will then be a guide for them to go by. But this business must not be delayed too late in the season, as some kinds of trees and vines are apt to bleed from being pruned untimely. When the sap rises in Grape Vines, before the wound is healed, bleeding ensues, and it is not easily stopped. When this happens, sear the place, and cover it with melted wax, or

with warm pitch spread upon a piece of bladder; or peel off the outside bark to some distance from the place, and then press into the pores of the wood a composition of pounded chalk and pitch, mixed to the consistence of putty. Vines will bleed in autumn as well as in spring, though not so copiously. The best preventive is timely or early pruning in the spring, and not pruning until the wood is thoroughly ripe in autumn.

With respect to the manner in which vines, and some particular kinds of trees, should be trained, opinions are at variance. Some advise training the shoots in a straight and direct manner, others in a horizontal manner, and others again in a serpentine form, etc. If vines be trained on low walls or trellises, the horizontal or zigzag manner of training may be adopted. Horizontal training is that in which from a main stem lateral branches are led out horizontally on each side.

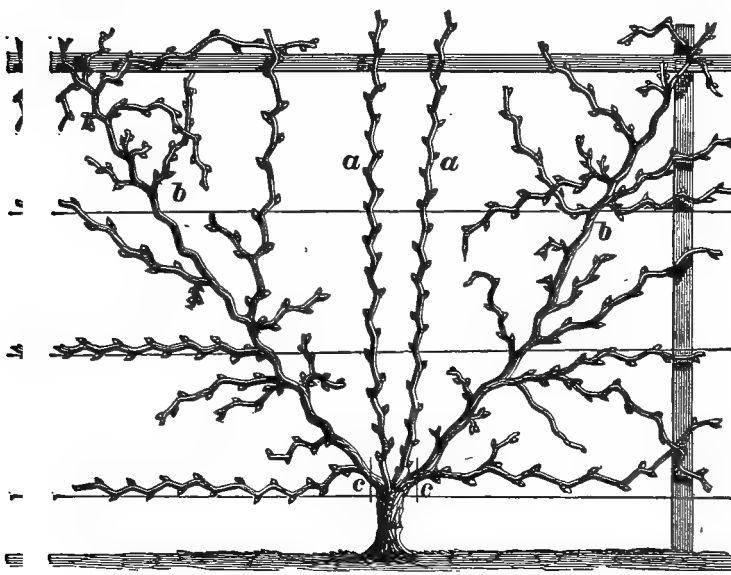
It has been remarked, that in order to be a good trainer of vines, a man must have some forethought, and be capable of making his selection as the plants shoot. He must predetermine how he shall prune, and where he shall cut at the end of the season; and so, as it were, fashion the plants to his mind. He has this more effectually in his power, with respect to the vine, than fruit-trees with fruit, on account of its rapid growth

PRUNING THE VINE.

In pruning vines, cut generally two inches above the bud. Some cut nearer, even as near as half an inch, which is apt to weaken the shoot of next season, and sometimes to prevent its vegetating at all; the buds being very susceptible of injury, on account of the soft and spongy nature of the wood. In cutting out old wood, be careful to cut in a sloping direction, and to smoothe the edges of the wood, in order to prevent its being injured by moisture. The pruning being finished, let the loose, shreddy, outward rind on the old wood be carefully peeled off, observing not to injure the sound bark, and clear

the trellis of branches, leaves, and tendrils. Let the shoots and branches afterwards be regularly laid in, at the distance above specified, particularly the young shoots that are expected to bear next season. As to others, it is not so material how near the young shoots be placed to the old, even though they sometimes cross them. Choose strands of fresh matting, or packthread, to tie with; and observe to leave sufficient room for the swelling of the shoots and branches next season.

Vines may be pruned too much as well as too little. There is nothing gained by training vines very high. A vine ten



Training a Vine Fan-Shaped.

feet high will be as productive as one forty feet high. The illustration herewith given will furnish an idea of the manner of cutting off the old wood, at *cc*, and throwing all the sap into two vertical canes, *aa*. Or the tops may be cut off at *bb*, and the laterals trained horizontally at pleasure.

PRUNING FRUIT-TREES.

By attending to the proper training of fruit-trees, every advantage is promoted; and by a judicious management in other respects, wood may not only be obtained, but preserved in every part of the tree, so that it will bear fruit to the very bole, which will evidently be greatly to the credit of the gardener, the benefit of the proprietor, and equally conducive to the beauty and welfare of the tree. While trees are young, it is necessary to lay a good foundation for a supply of bearing-wood in future years; for when this is neglected, and they become naked, it is some time before a supply can be recovered. In shortening a branch, always take care to cut in a direction a little sloping; and the middle of all standard trees should be kept as open as possible. It is requisite to have a very sharp knife, that the cut may not be ragged, but clean; and in the operation be careful that the knife does not slip, so that another branch be cut or damaged.

The general pruning of fruit-trees is indifferently performed by many persons, at any time from autumn to spring; and it may be so done without any great injury to them, provided mild weather be chosen for the purpose, and the wood be well ripened. Although it may be advantageous to prune trees early in the winter, when the wood is well ripened, yet, when the wood is green and the buds have not arrived at a mature state, it is requisite in such cases to defer pruning until spring; taking care, however, that it is performed before the moving of the sap. The necessity of this arises from the circumstance that as the wood is not ripened in autumn, the sap is then in an active state, and will continue so until the frost causes it to become stagnant; and if the shoots were shortened while the sap was in motion, the buds would be considerably injured, and the tree weakened. Such unripe shoots are also more liable to suffer by the severity of winter; and when the pruning is deferred until spring, all such parts as may

have been affected by the weather can be removed to the extent to which the damage has been sustained. As the pruning of such unripe wood in the autumn would be injurious, so it frequently is when it is done during winter; and the more so according to its severity; because, whenever a cut is made on such green wood, the frost generally affects it, as the sap is not so dense, nor the wood so firm, as to be able to resist the intense cold.

DIFFERENT MODES OF TRAINING.

Whatever method is adopted in training trees, care should be taken to keep the two sides as nearly equal as possible; this may easily be done, whether they are trained in the fan or horizontal method. For espalier trees, the horizontal method has many advantages over any other. The small compass within which the trees are obliged to be kept, requires such a direction for the branches, in order to make them fruitful; and were very high trellises formed, so as to admit of the trees being trained in the fan method, such would be very objectionable, by reason of the shade they would cause, and the trees would also be deprived of the benefit of a warmer temperature, which those less elevated receive.

As some young gardeners may not know what is meant by espaliers, it may be necessary to explain that espaliers are hedges of fruit-trees which are trained up regularly to a frame or trellis of wood-work; they produce large fruit plentifully, without taking up much room, and may be planted in the Kitchen-Garden without much inconvenience to its other products. For espalier fruit-trees in the open ground, a trellis is absolutely necessary, and may either be formed of common stakes or poles, or of regular joinery work, according to taste or fancy.

Standard trees should be pruned low. An excellent mode of pruning is to imitate the cherry-tree, which sends a stem

straight upwards, with boughs projecting laterally, on every side, at distances of two or three feet apart. The boughs also should have limbs at suitable distances apart. All the branches should not be cut off the limbs for several feet from the body of the tree, as many of our apple-orchards have been pruned. The entire area occupied by the branches should be well filled up with fruit-producing limbs. In order to do this, one must commence pruning trees when they are young, and prune a little every season, as the branches require. It is decidedly objectionable to allow trees of any kind to grow unpruned for several years, and then give them a severe pruning. Some trees need but little pruning; while others require more or less every year.

BEST TOOLS FOR PRUNING.

The implements employed in pruning, and the manner of using them, are matters of moment. If the operation is commenced when the tree is young, and judiciously followed up, a good knife, a small saw, a mallet, and a chisel fixed on a six-foot handle, to trim the tops and extremities of the branches, are all the tools that are required. A large saw will be occasionally wanted; but an axe or hatchet should never be employed, as they fracture the wood, bruise and tear the bark, and disfigure the tree.

BUDDING AND GRAFTING FRUIT-TREES.

Budding and Grafting, Lindley observes, are operations that equally depend for their success upon the property that buds possess of shooting roots downward, and stems upward; but in these practices, the roots strike between the bark and wood of the stock, instead of into the earth, and form new layers of

wood, instead of subterranean fibres. The success of such practices, however, depends upon other causes than those which influence the growth of cuttings. It is necessary that an adhesion should take place between the scion and the stock so that when the descending fibres of the buds shall have fixed themselves upon the wood of the stock, they may not be liable to subsequent separation. No one can have studied the economy of the vegetable kingdom, without having remarked that there is a strong tendency to cohesion in bodies or parts that are placed in contact with each other.

To bud trees, let the following method be adopted: Procure a knife which has a thin blade; the use of the blade is to prepare the buds, and the handle is used to raise the bark of the stocks, so that the buds can be easily inserted. Have some good strong bass in readiness, and then take some good thrifty sprigs from healthy trees of the sorts you intend to propagate. When all is ready, make a cut in the bark of the stock transversely, and from the middle of this cut make another downward, at least two inches in length, so that the two cuts may be in the form of a T; then from one of your sprigs proceed with expedition to take off a bud. This is effected as follows: Insert the knife a little more than half an inch below the bud or eye, force it into the wood, drawing it under the bud, and cut the piece off across the shoot; then immediately let that part of the wood which was cut off with the bud be separated from it, which may be readily done with the knife, by placing the point of it between the bark and wood at one end, and, holding the bark in one hand, pull off the woody part with the other, which will readily come from the bark if the tree from which it was taken be in a vigorous condition. Examine the bark, so as to be satisfied that the bud remains perfect; if there is no hole in it, let it be immediately inserted into the stock, which is done by raising with the handle of your knife the bark of the stock downward on each side from the crosscut, and thrusting the bud in between the bark and the wood, applying it as close as possible. As soon as the bud

is put into its place, bind it securely with bass, beginning a little below the cut and proceeding upward till you are above the crosscut, taking care to miss the eye of the bud, just so that it may be seen through the bandage of the bass. About a week or ten days after the stocks have been budded, they should be examined, when such as have united will appear fresh and full, and those that have not taken will appear decayed. In the former case the bandage may be left off, and in the latter case, the stock may be budded in another place, provided the first operation was done in the month of July or early in August, as these are the two most preferable months for budding fruit-trees in general. Budding is, however, often attended with success, if done early in September.

SCALLOP-BUDDING

is performed by cutting from a small stock a thin narrow scallop of wood about an inch in length, and taking from a twig a thin scallop of wood of the same length; this is instantly applied, and fitted perfectly at top and bottom, and as nearly as possible on its sides, and firmly bound with wet bass matting. This may be performed in the spring, and if it fails, it may be done again in the month of July. The French practise this mode on Roses.

GRAFTING.

Grafting is the taking a shoot from one tree and inserting it into another in such a manner that both may unite closely and become one tree. These shoots are called scions or grafts, and in the choice of them and the mode of preparing some descriptions of stocks, the following hints will be useful:

Those scions are best which are taken from the lateral or

horizontal, rather than from the strong perpendicular shoots. The shoots of Apples, etc., should be taken from healthy trees late in autumn, or before the buds begin to swell in the spring, and buried half of their length in the ground or in a cool and dry cellar, there to remain until the season of grafting.

For some descriptions of trees the stocks are headed down near to the ground. In nurseries, Apples intended for standards are generally grafted about nine inches high only, allowing them to grow up standard high, and forming their heads upon the second year's shoots. In cider countries, the stock is generally trained up standard high; and when grown sufficiently large for the purpose, it is grafted at the height intended for the head of the tree.

There are various methods of grafting, but the following are those most generally practised.

CLEFT-GRAFTING.

This mode of grafting is generally practised on stocks of from one to two inches in diameter, and may be performed in the following manner: Let the head of the stock be carefully sawed off where the limb is free from knots, and the end pared smooth. Then with a thin knife, split down the stock through the centre to the depth of about two inches, and insert a chisel to keep it open for the reception of the scion, which must be prepared in the form of a wedge, with one or two buds in the upper part, and inserted carefully, so that the inner bark of the scion and of the stock may both exactly meet. Large stocks require two scions, one on each side, and sometimes four are inserted. When done, tie them firmly together with bass, and then cover the grafted part with well-prepared clay, in an oval form, and close it securely.

These directions apply particularly to small limbs or small trees. Those stocks that will pinch the grafts sufficiently tight as soon as the chisel is taken out, do not require any binding. When scions are set in large stocks, it is sometimes necessary

to drive in a small wooden wedge to prevent the split stock from crushing the scion. A little caution must be exercised on this subject, to have the stock pinch sufficiently tight to hold the scions securely in the desired position, else they will not live. And if the scion be crushed by too severe pressure, it cannot be expected to live.

SIDE-GRAFTING.

This mode is sometimes practised on those parts of a tree where a limb is wanting. There are two ways in which it may be performed. 1st. The scion may be prepared in the same manner as for splice-grafting, and the bark and wood on the side of the stock cut sloping; the scion being then adjusted as carefully as possible, it must be bound on and covered with clay. 2d. The scion being cut sloping, a crosscut is to be made in the side of the tree on the top of a perpendicular slit; the bark of a tree above the crosscut must be pared down slanting to the wood, and the bark raised as in budding; the scion being then inserted, it must be bound fast, and covered with clay.

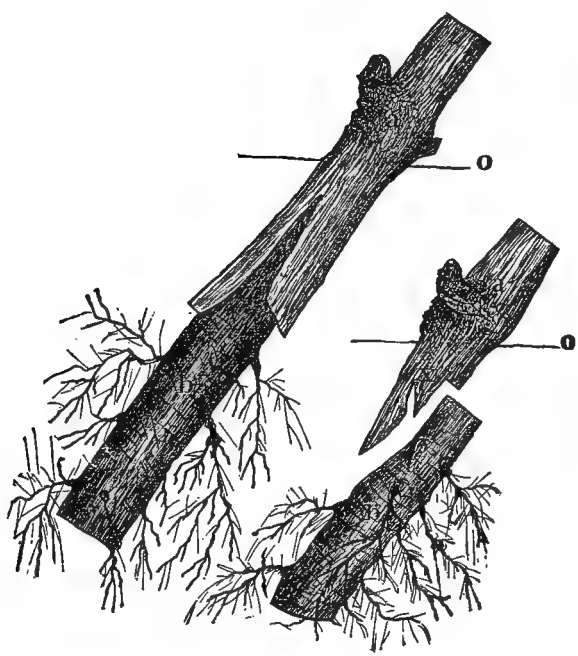
SPLICE OR WHIP-GRAFTING.

This mode is often practised on small stocks, and it succeeds best when the scion and stock are of an equal size. The scion, which should consist of young wood of the former year's growth, may be cut to the length of about four inches. This and the stock are each to be cut sloping for an inch or more, and tongued. Tonguing consists in cutting a slit in the middle of the slope of the stock downward, and a corresponding slit in the scion upward; both are now to be joined, so that one of the sides, if not both, shall perfectly coincide, and then securely bound with bass matting and covered with grafting-clay or composition. As soon as the scion and stock are completely united, the bass string may be removed.

SADDLE-GRAFTING.

The celebrated Mr. Knight practised this mode of grafting on very small stocks. The upper part of the stock is prepared in the form of a wedge, by two sloping cuts, one on each side. The scion is prepared by slitting it upward, and paring out the middle part on each side to a point. When the stock and scion are of equal size, the adjustment may be made perfect; but if unequal, one side must exactly meet. The whole is secured by a string of bass matting, and covered with composition or clay; but the string must be removed as soon as a perfect union has taken place.

ROOT-GRAFTING.



This operation is often performed on Grape-vines, just below the level of the surface, by the usual mode of cleft-grafting. It is also performed on portions or pieces of root where suitable stocks are scarce. The illustration on page twenty-three represents the usual mode of root-grafting. The lines O O represent the surface of the ground. The main thing in all kinds of grafting, is to made a "close fit" between the stock and the scion.

GRAFTING BY APPROACH.

The trees or shrubs to be grafted in this mode must be growing very near to those which are to furnish the grafts. The limbs or branches of each tree, which are thus to be united, must be pared with a long sloping cut of several inches, nearly to the centre; and the parts of each tree thus prepared are to be brought together, and finally secured by a bandage of matting, so that the bark shall meet as nearly as possible. The graft may then be covered with clay or composition; and when a complete union has taken place, the trees or shrubs may be separated with a sharp knife, by cutting off below the junction.

It may be here observed that, as young grafted trees in the nursery progress in growth, the lower side-limbs should be gradually shortened, but not suddenly close-pruned, as they are essential for a time to strengthen the trunks, and to the upright and perfect formation of the tree.

THE BEST TIME TO GRAFT.

The best time to graft Apple and Pear-trees is, when they are in blossom. At that time, sap flows most abundantly, wounds heal more readily, and the stock and scion are far more likely to unite than when the sap is not so abundant. I have always heard it remarked that Cherry-trees should be grafted before the buds begin to swell. But I have always had far

better success with scions that were put in when the trees were about to blossom, than with the grafts that were set very early or before the growing season had commenced. The most important consideration is to have good grafts. More scions fail on account of having been injured by being improperly kept than from any other cause.

When beginners prepare the stocks and dress off the ends of the scions with a knife, the cut should be made with a sharp instrument, very true and smooth, and not too sharp-pointed nor too blunt, neither should the end of the scion be too thin nor too thick. If too thin, when the cleft stock closes on it, the scion will be crushed so that it cannot live. If the scion be too thick, the sharpened end will not fit the cleft sufficiently well for the sap to circulate from the stock into the scion. Whatever be the form of the scion, or the shape of the stock, the inside bark of each must be placed together, so that the sap from the stock may pass readily into the scion.

GRAFTING-CLAY AND WAX.

The British Parliament gave Mr. Forsyth a valuable premium for the following important directions for making a composition for curing diseases, defects, and injuries in all kinds of fruit and forest trees, and the method of preparing the trees, and laying on the composition:

Take one bushel of fresh cow-dung, half a bushel of lime rubbish of old buildings (that from the ceilings of rooms is preferable), half a bushel of wood-ashes, and a sixteenth part of a bushel of pit or river sand; the three last articles are to be sifted fine before they are mixed; then work them well together with a spade, and afterwards with a wooden beater, until the stuff is very smooth, like fine plaster used for ceilings of rooms.

The composition being thus made, care must be taken to prepare the tree properly for its application, by cutting away

all the dead, decayed, and injured part, till you come at the fresh sound wood, leaving the surface of the wood very smooth, and rounding off the edges of the bark with a draw-knife or other instrument. Then lay on the plaster about an eighth of an inch thick, all over the part where the wood or bark has been so cut away, finishing off the edges as thin as possible. Then take a quantity of dry powder of wood-ashes mixed with a sixth part of the same quantity of the ashes of burnt bones; put it into a tin box with holes in the top, and shake the powder on the surface of the plaster till the whole is covered with it, letting it remain for half an hour to absorb the moisture; then apply more powder, rubbing it on gently with the hand, and repeating the application of the powder till the whole plaster becomes a dry, smooth surface.

If any of the composition be left for a future occasion, it should be kept in a tub or other vessel, and urine poured on it so as to cover the surface; otherwise the atmosphere will greatly injure the efficacy of the application. When lime-rubbish of old buildings cannot be easily got, take pounded chalk or common lime, after having been slaked a month at least. As the growth of the trees will gradually affect the plaster, by raising up its edges next the bark, care should be taken, when that happens, to rub it over with the finger when occasion may require (which is best done when moistened by rain), that the plaster may be kept whole, to prevent the air and wet penetrating into the wound.

As the best way of using the composition is found, by experience, to be in a liquid state, it must therefore be reduced to the consistence of a pretty thick paint, by mixing it up with a sufficient quantity of urine and soapsuds, and laid on with a painter's brush. The powder of wood-ashes and burned bones is to be applied as before directed, patting it down with the hand.

GRAFTING-CEMENT.

Another way of making grafting-wax is to melt equal parts of resin, beeswax, and tallow together. If it be so hard that it cannot be worked with the hands, melt it again and add more tallow. To make it harder, add more resin. This will be found an excellent coating for wounds made by cutting off limbs of trees. After a tree is pruned, melt the wax in a metallic vessel, but not have it burning hot; then apply it in a liquid state to the wounds with a swab or paint brush. Some persons pour the composition into cold water, and as it hardens take it out and work it up with the hands until it attains a due consistence. It may be spread on brown paper, which being cut into strips of suitable size, is quickly applied, and in cool weather may be warmed by the breath, so as to become adhesive.

Grafting-clay may be made in the following manner: Take equal parts of fresh horse manure, free from litter, cow manure, and good stiff clay; add to this a portion of hair, and work it together in the same manner as masons mix their mortar. It should be well beaten and incorporated several days before it is required to be used.

PROCURING IMPROVED VARIETIES OF FRUIT.

In planting seed for the purpose of procuring improved varieties, care should be taken not only that the seed be selected from the finest existing kinds, but also that the most handsome, the largest, and the most perfectly ripened specimens should be those that supply the seed. A seedling plant will always partake more or less of the character of its parent, the qualities of which are concentrated in the embryo, when it has arrived at full maturity. As this subject is discussed in

another part of this work, I shall direct the reader's attention to the operation of *Cross-Fertilization.*

This is effected by the action of the pollen of one plant upon the stigma of another. The nature of this action is highly curious. Pollen consists of extremely minute hollow balls or bodies; their cavity is filled with fluid, in which swim particles of a figure varying from spherical to oblong, and having an apparently spontaneous motion. The stigma is composed of very lax tissue, the intercellular passages of which have a greater diameter than the moving particles of the pollen. When a grain of pollen comes in contact with the stigma, it bursts, and discharges its contents among the lax tissues upon which it has fallen. The moving particles descend through the tissues of the style, until one, or sometimes more, of them find their way, by routes especially destined by nature for this service, into a little opening in the integuments of the ovulum or young seed. Once deposited there, the particle swells, increases gradually in size, separates into radicle and cotyledons, and finally becomes the embryo,—the part which is to give birth, when the seed is sown, to a new individual. Such being the mode in which the pollen influences the stigma, and subsequently the seed, a practical consequence of great importance necessarily follows, viz. that in all cases of cross-fertilization, the new variety will take chiefly after its polliniferous or male parent; and that at the same time it will acquire some of the constitutional peculiarities of its mother. Thus the male parent of the Downton Strawberry was the Old Black, the female a kind of Scarlet. In Coe's Golden Drop Plum, the father was the Yellow Magnum Bonum, the mother the Green Gage; and in the Elton Cherry, the White Heart was the male parent, and the Graffion the female.

The limits within which experiments of this kind must be confined are, however, narrow. It seems that cross fertilization will not take place at all, or very rarely, between different species, unless these species are nearly related to each other: and that the offspring of two distinct species is itself sterile, or

if it possesses the power of multiplying itself by seed, its progeny returns back to the state of one or other of its parents. Hence it seldom or never has happened that domesticated fruits have had such an origin. We have no varieties raised between the Apple and the Pear, or the Plum and Cherry, or the Gooseberry and the Currant. On the other hand, new varieties obtained by the intermixture of two preëxisting varieties are not less prolific; but, on the contrary, often more so than either of their parents: witness the numerous sorts of Flemish Pears which have been raised by *cross fertilization* from bad bearers within the last thirty years, and which are the most prolific trees with which gardeners are acquainted. Witness also Mr. Knight's Cherries, raised between the May Duke and the Graffion, and the Coe's Plum already mentioned. It is therefore to the intermixture of the most valuable existing varieties of fruit that gardeners should trust for the *amelioration* of their stock. By this operation the Pears that are in eating in the spring have been rendered as delicious and as fertile as those of the autumn; and there is no apparent reason why those very early, but worthless sorts, such as the Muscat Robert, which usher in the season of Pears, should not be brought to a similar state of perfection.

It is an indubitable fact that all our fruits, without exception, have been so much ameliorated by various circumstances, that they no longer bear any resemblance in respect of quality to their original. Who, for instance, would recognise the wild parent of the Green Gage Plum in the austere Sloe, or that of the delicious Pippin Apples in the worthless acid Crab? Or, what resemblance can be traced between our famous Beurre Pears, whose flesh is so succulent, rich, and melting, and that hard, stony, astringent fruit, which even birds and animals refuse to eat? Yet these are undoubted cases of improvement, resulting from time and skill patiently and constantly in action. But it would be of little service to mankind that the quality of any fruit should be improved, unless we adopt some efficient and certain mode of multiplying the individuals when ob-

tained. Hence there are two great objects which the cultivator should aim at, viz. *Amelioration* and *Propagation.*

LINDLEY'S MODE OF CROSS-FERTILIZATION.

Lindley recommends the operation of cross-fertilization to be performed early in the morning of a dry day; about sunrise is a good time to begin, and before the blossom is entirely expanded. The pollen being at that time humid, is closely attached to the anthers. The blossoms must be carefully opened and the anthers extracted by delicate scissors, care being taken not to wound the filaments, nor any other part of the flower. This being done, the matured pollen from another variety must be carefully placed on the blossom which it is intended to fertilize, and from which the anthers have been extracted; and this operation must be repeated twice or three times in the course of the day. By shaking the blossom over a sheet of white paper, the time when it is perfectly matured will be ascertained. It is necessary to protect the prepared blossom from bees and other insects with thin book-muslin, or gauze, till a swelling is perceived in the germ. When the process has been successful, the pollen which has been placed on the stigma becomes so attached that it cannot be removed with a hair pencil. It changes form and color, and soon disappears, and the blossom will soon wither and fade. But when the process has been imperfect, the pollen is easily detached from the stigma, its appearance is unaltered, and it remains visible with the duration of the flower, which will continue a long time.

GENERAL SUGGESTIONS ABOUT PRUNING.

The Gard'ner at work, ere the birds pipe a tune,
Each fruit-tree inspects, then commences to prune;
The insects destroying, on branches or root,
That injure the blossom, or live in the fruit.

As the season for pruning fruit-trees and vines commences in the various parts of our country at different periods, according to the climate, I would submit a few general remarks on the subject, with a view to prepare the gardener for the performance of the work in a skilful manner, and at the proper season; for be it remembered that untimely or injudicious pruning may produce injury instead of benefit, and in many cases defeat the real object of the operation.

Having given ample directions for the cultivation of the various species of fruit, I would recommend the novice to peruse every article before he enters upon the work of the garden. He will there discover that no single rule will apply to every kind of fruit; *first*, because the mode of bearing is different in almost every distinct species; *secondly*, because the sap rises earlier and continues longer in the branches of some species than in others; and *thirdly*, because some trees, as the Plum for instance, are apt to gum if pruned too soon in the season, and the grape-vine to bleed if delayed too long. For the above, and other reasons that may be given, the gardener should examine all his fruit-trees frequently, with his implements at hand; and if circumstances will not admit of a general pruning, he may cut off dead branches, and clear trees from moss and canker, also search for the nests of insects, and destroy them while in a torpid state. This will assist the natural efforts of the trees in casting off the crude and undigested juices, which, if confined in them, will in a short time destroy them, or some of their branches.

In pruning all descriptions of trees, some general rules may be observed. In cutting out defective branches, prune close to the healthy wood, and also shorten such shoots as have

been injured by the winter, to the full extent, or even a few inches beyond, where damage has been sustained.

The limbs of young and thrifty trees should not be too closely pruned, because this would occasion more lateral shoots to put forth than is beneficial to the tree; which, if not rubbed off in the summer while quite young, and as it were herbaceous, will form crowded branches, which may not yield good fruit. In doing this *disbudding*, however, care must be taken to leave shoots in a suitable direction, sufficient for the formation of an open and handsome head to the tree, according to its kind.

It may be observed, further, that in the event of young trees, taken from the nursery, being deficient in fibrous roots, as is sometimes the case, close pruning may be necessary to maintain a proper equilibrium between the roots and the head; but it should be borne in mind that foliage is as essential to the maintenance of the roots as roots are necessary to the promotion of the growth of the head; because the secretion of plants being formed in leaves, it follows that secretions cannot take place if leaf-buds are destroyed.

INSECTS AND DISEASES TO WHICH FRUIT-TREES ARE LIABLE.

Much may be written relative to the various diseases to which fruit-trees are liable, and also to the prevention and destruction of the various kinds of reptiles and insects which frequently deprive us of the first fruits of our garden. The preventive operations are those of the best culture. Autumn ploughing, by exposing worms, grubs, the larvæ of bugs, beetles, etc., to the intense frost of our winters, and the moderate use of salt, lime, ashes, etc., are beneficial. Insects may be annoyed, and sometimes their complete destruction effected, by the use of soapsuds, lye, tar, turpentine, sulphur,

pepper, soot, decoction of elder, walnut leaves, tobacco, and other bitter and acrid substances; but perhaps the most effectual way of keeping some of the most pernicious kinds of insects under, is to gather up such fruit as may fall from the trees before the insects have an opportunity of escaping into the earth, or to other places of shelter.

Where trees are planted in a bad soil, or unfavorable situations, they often become diseased. When this happens, the best remedy is good pruning, and keeping the trees clean by a free use of soap and water. If that will not do, they may be headed down, or removed to a better situation. Barrenness and disease are generally produced by the bad qualities of the earth and air, by a want of water, or by the inroads of insects. These incidents generally show themselves in the early part of the year. Leaves and shoots of any color but the natural green; curled and ragged leaves; branches in a decaying state; shoots growing from the roots instead of from the stem or trunk; the stem diseased in its bark; the gum oozing from various parts thereof—are all proofs of the existence of disease. The peach-tree is subject to a disease called the yellows; and the discolored leaves and feeble branches are often ascribed to the worms which so frequently attack the roots. Where these are found, they may be removed by a knife or chisel. But if it should appear that the tree is diseased, it should be removed, to prevent other trees from being infected.

WASH FOR FRUIT-TREES.

The following compositions have been known to protect fruit-trees from the attacks of numerous insects, by being used as a wash to the trees immediately after pruning. The constitution of some trees will bear a much stronger mixture of ingredients than others; but the proportions, as hereafter

described, will not be injurious to any, but will be effectual in the destruction of the larvæ of insects.

For Apricot, Nectarine, and Peach-Trees.—To eight gallons of water add one pound of soft soap, two pounds of common sulphur, and half an ounce of black pepper.

For Apple, Cherry, Pear, and Plum-Trees.—To four gallons of water add one pound of soft soap, two pounds of common sulphur, two ounces of tobacco, and one ounce of black pepper.

For Figs and Vines.—To four gallons of water add half a pound of soft soap, one pound of sulphur, and a quarter of an ounce of black pepper. All these ingredients must be boiled together for twenty minutes at least, and when in a lukewarm state, applied to the bark of the trees with a suitable brush.

For the destruction of the Aphis which frequently attacks the Apple, as well as other fruit-trees while young, an application of diluted whale-oil soap to the leaves and branches has been found very efficacious. If whale-oil soap be applied too freely, it may injure young trees or bushes, and sometimes destroy them.

CHECKING THE RAVAGES OF THE CURCULIO.

The most destructive enemy to our fruit is the Curculio, which passes the winter in the earth in a chrysalis state, and if suffered to remain unmolested by the gardener, will be ready to commence its attacks at about the time the blossoms appear on our fruit-trees. The eggs are deposited in the Apple, Pear, and also all stone fruit, at a very early stage of their growth, which soon hatch, and small maggots are produced, which exist in the fruit, causing it to drop off prematurely, with the little enemy within. If this fruit be gathered up, or immediately devoured by hogs, geese, or other animals, a check may

be put to their ravages in succeeding years; but if suffered to remain on the ground, they will supply food to myriads of their destructive race, which may not be so easily extirpated.

The most effectual way of preventing the operations of the Curculio is, to spread sheets of cloth beneath the trees and jar them off, by a sharp blow with a mallet against the end of a large iron spike, or pin driven into the body of the tree, when the insects will fall from the trees on the sheets, and may be turned into a vessel of hot water and destroyed.

THE CANKER-WORM.

The canker-worm is another enemy to our fruits, for the destruction of which many experiments have been tried. Some apply bandages around the body of the tree, smeared over with tar or ointment, to annoy or entrap the females in their ascent to the tree; but as these tormentors are frequently on the move from November to the end of June, this must be a very tedious as well as uncertain process. As this insect is supposed to exist within four feet of the trunk of the tree, and not more than three or four inches from the surface of the earth, good culture, and a moderate use of lime, ashes, or any other pernicious ingredient, is the most likely way to destroy them. Every worm should be destroyed, whenever they appear, by crushing, when they are not so numerous as to render it impracticable.

THE BARK-LOUSE.

The bark-louse is another pernicious insect. They resemble blisters, and are so near the color of the bark as to be imperceptible. They often prove fatal to the Apple-tree, by preventing the circulation of the sap. These insects may be conquered by washing the trees with soapsuds, tobacco-water, lime-water, or a wash may be made of soapy water, salt, and lime, thickened to the consistency of cream or paint, with sifted sand or clay, which may be applied with a brush to the trunk and limbs of the trees in May or early in June, and the cracks in the bark should be completely covered.

THE APPLE-TREE BORER.

The Apple-tree borer is said to deposit its eggs beneath the surface of the soil, and the worms are often to be found in the spring of the year by digging round the tree and clearing away the earth to the roots, and may be taken out with a knife or gouge, and destroyed. After the worms are removed the wounds should be covered over with grafting-clay and wood-ashes mixed, and the earth then returned to the roots of the tree. Some use bricklayers' mortar early in the spring around the base of the tree, so as to cover the part where the deposit is made, and prevent their attacks.

There is no effectual way of preventing the borer working in trees, to a certain extent. But, by examining the trees every week, the borers may be cut out before they have entered the wood beyond the reach of a penknife. Young trees that are only a few years old are far more liable to be destroyed by the borer than old trees having a thick, hard, and tough bark. Borers like a tender bark to work in.

VALUE OF WOOD-ASHES FOR FRUIT-TREES.

If all agriculturists and horticulturists were to offer an inducement to the inhabitants of large cities to save their ashes in a dry state, they would be supplied not only with a valuable manure, but an antidote for many kinds of insects; and our citizens would be at less risk from fire, by having a brick vault on their premises for safely keeping them. In England, a private dwelling is not considered complete without an ash-vault; and a good farmer would dispense with his barn rather than be destitute of an ash-house. I have known farmers to supply the cottagers with as much peat as they could burn, on condition of their saving them the ashes; and there are some that will keep men under pay throughout the year burning peat for the same purpose; and anything that has passed the fire is so valuable, that a chimney-sweep will frequently clean chimneys for the sake of the soot, which is conveyed miles into the country, and sold at a price sufficient to reward the collectors, besides paying all expenses; even the housekeepers' ashes in cities is a marketable article at all times, bringing from ten to twenty-five cents per bushel when kept dry and clean; and a guinea a load was formerly the common price in the villages of Berkshire and Hampshire.

While on this subject, I would urge the importance of a spring dressing of ashes. If cultivators were to prepare turfs from tanners' bark, peat-earth, coal-dust mixed with clay, cow-dung, etc., and get them dried in the summer season, these, by being preserved through the winter, may be burned around fruit-orchards while the trees are in blossom; and if the fires are properly managed, a smoke may be kept up by heaping on damp litter every night; this will prove pernicious to such insects as may reside in the trees, and the ashes being spread on the ground, will serve as a means of destruction to others. An orchard thus managed every year, will need no other manure. The

smoking should be effected first on one side of the plantation, and afterwards on the other, or heaps may be prepared in different parts of the orchard, and fire applied according as the wind may serve to carry the smoke where it is most necessary. I know a gardener in the neighborhood of New York who saved his Plums and Nectarines by burning salt hay, after having been used as a covering for his Spinach; and I have no hesitation in recommending it as an excellent remedy for protecting fruit-trees from insects, especially if some coarse tobacco could be procured to add to it. The damper the materials are, in moderation, the more smoke they will create; and if a little tar, pitch, sulphur, or other pernicious combustible be sprinkled among them, it will be beneficial.

Now I would ask—How is it that ashes are not as valuable to the farmers here as they are in Europe? The extreme heat of the summer must certainly engender insects in equal, if not greater proportions; and as respects manure, it must be scarcer in some parts of this extensive country than it is in the densely peopled countries of Europe. Perhaps some may answer, that ashes are already used by our cultivators to a considerable extent; but I would remind such, that from the circumstance of their being mixed up with other manures, and exposed to all sorts of weather (as in our city), they lose their virtue, so that a load may not be worth more than a bushel would be, if kept dry and clean.

THE SITUATION OF AN ORCHARD AND THE SOIL.

The situation of an Orchard or Fruit-Garden should be one that has the advantage of a free circulation of air, and is exposed to the south, with a slight inclination to the east and south-west. When the situation is low and close, the trees are very liable to become mossy, which always injures them, by

closing up the pores of the wood; they are also more liable to be affected by blight. Although having an orchard closely pent up by trees, etc., is injurious, nevertheless a screen of forest-trees, at such a distance from the fruit-trees as that the latter will not be shaded by them, is of very great service in protecting the trees in spring from severe cold winds.

A good strong loamy soil, not too retentive of moisture, to the depth of thirty inches, or three feet, is most suitable for an orchard. Great attention must be paid to the sub-stratum, as the ground must be well drained; for if the top soil be ever so good, and the bottom wet, it is very rarely the case that the trees prosper many years; they soon begin to be diseased and go to decay. As it is so indispensably necessary to the success of fruit-trees that the bottom should be dry, if it is not naturally so, it must be made so by judicious draining.

DRAINING ORCHARDS.

When it is necessary to make the bottom dry by draining, it must be done some time before the trees are planted. In performing this work the ground must be trenched, and when the trench is open, stone or brick-bats, etc., must be laid over the bottom to the thickness of six inches, a little coal-ashes or small gravel must be sprinkled over the top of the stones, etc., and then the surface gently rolled. Drains may also be made in different directions, so that any excess of moisture can be taken entirely away from the ground.

If ditches be made between the rows of trees three feet deep, and tiles laid in them, and the hard subsoil returned on the tiles, and trod down well, as it is shovelled in the ditch, the roots of trees will not be very likely to obstruct the water passages. Such drains are better than those filled with stone, or any other material.

IMPROVING SOILS FOR FRUIT-TREES.

It is well known to most cultivators that exposure of soils to the atmosphere greatly improves them, as is experienced by ridging and trenching. Where the soil is stiff and stubborn, small gravel, sand, coal-ashes, lime, light animal and vegetable manure, and other light composts, are very appropriate substances to be applied, and will, if carefully managed and well worked into the ground, soon bring it into a proper condition for most purposes.

Previous to laying out an orchard or fruit-garden, the soil should be manured and pulverized to a great depth. It should be made sweet, that the nutriment which the roots receive may be wholesome; free, that they may be at full liberty to range in quest of it; and rich, that there may be no defect in food.

If orchards are made from meadows or pasture lands, the ground should be improved as much as possible by manuring, trenching, ploughing, etc. If this is not done to its full extent, it should be done in strips of at least six feet in width along where the fruit-trees are to be planted, and at the time of planting let the holes be dug somewhat larger than is sufficient to admit the roots in their natural position, and of sufficient depth to allow of a foot of rich and well-pulverized mould to be thrown in before the trees are planted.

HOW TO TRANSPLANT TREES.

In transplanting trees, they should not be placed more than an inch or two deeper than they were in the nursery-bed, and the earth intended for filling in should be enriched and well pulverized by mixing in some good old manure; and if any

leaves, decayed brush, rotten wood, potato tops, or other refuse of a farm are attainable, let such be used around the trees in filling, taking care that the best pulverized mould is admitted among the fine roots. The trees in planting should be kept at ease, and several times shaken, so as to cause an equal distribution of the finer particles of earth to be connected with the small fibres of the roots; and when completely levelled, let the ground be well trodden down and moderately watered, which should be repeated occasionally after spring planting, if the weather should prove dry.

In transplanting trees, care should be taken that the collar, or that part from which emanate the main roots, be not inserted too deep in the soil, as this injures the bark, and consequently impedes the natural circulation of the juices. A medium-sized tree may be planted one inch deeper than it was in the nursery-bed, and the largest should not exceed two or three inches.

Newly-planted trees should be watered in dry, hot weather; an occasional hoeing around them will also be beneficial; but care must be taken not to injure the roots.

As some difference of opinion exists among practical men as to the best time for planting fruit-trees, the following extract from Mr. Prince's Treatise on Horticulture is submitted:

TRANSPLANTING IN SPRING vs. AUTUMN.

Spring is the season when we find the most pleasure in making our rural improvements, and from this circumstance probably it has become the general season for planting trees; but experience has proved autumn-planting to be the most successful, especially in those parts of the United States which are subject to droughts, as trees planted in autumn suffer little or none from drought, when those set out in spring often perish in consequence of it. Notwithstanding, with regard to those fruits that have been originally brought from warmer climates,

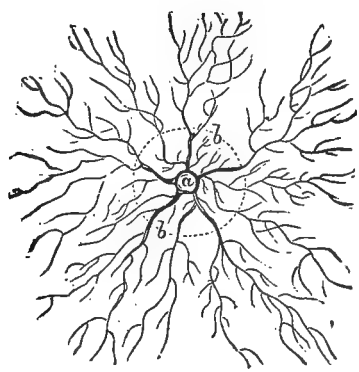
such as the Peach, Apricot, Nectarine, and Almond, which are natives of Persia, Armenia, etc., it is necessary for us to consult the operations of climate also; and, from a consideration of those attendant circumstances, I have come to the following conclusions: In localities south of New York, autumn planting is preferable only for the Apple, Pear, Plum, Cherry, Quince, and all other trees of northern latitude; whereas, the spring is to be preferred for the Peach, Apricot, Nectarine, and Almond, which, for the reasons before stated, might, during severe winters, suffer from the intensity of the frosts. Still I do not mean to assert that trees of those kinds are certain to be injured by the winter, as in very many seasons they are not in the least affected. Many gentlemen, however, of excellent judgment, make their plantations in the autumn, which only serves to prove that even in the most intelligent minds a diversity of opinion exists.

HEELING-IN TREES AND PROTECTING THEIR ROOTS.

As soon as the trees arrive at the place where they are to be planted, let a trench be dug in cultivated ground, the bundles unpacked, the roots well wetted, and immediately covered with earth in the trench, observing to make the earth fine that is spread over them, so as not to leave vacancies for the admission of air to dry the roots, it having been found by experience that the thriftiness of trees the first year after transplanting depends much on the fine fibres of the roots being kept moist, and not suffered to dry from the time they are taken up until they are replanted. Their increase, therefore, must depend principally on the subsequent management on their arrival at the place of destination; for if, when the bundles are unpacked, the trees are carelessly exposed to

drying winds, the young fibres of the roots must perish, and the trees, if they live at all, cannot thrive the first season, as they can receive little or no nourishment until these fibres are replaced.

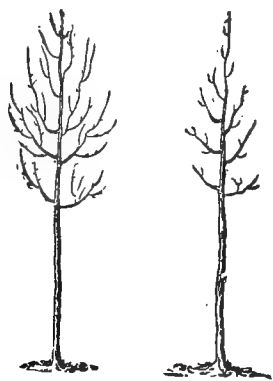
When trees are carried from the nursery to the orchard, if they are out of the ground in the wind and sunshine half an hour, the roots should be protected. Otherwise, all the small ones will lose their vitality. When trees or vines are carried only a few miles, and are out of the ground only one hour, the roots should be dipped in thin mud or clay to protect them from drying winds.



The accompanying illustration is a fair representation of the roots of a fruit-tree before the roots have been disturbed. When trees are dug up in the usual manner, the roots are all cut off, as represented by the dotted lines *b b*, which is sufficient to destroy the vitality of any tree. It is highly important to dig up the entire roots, if possible, when trees are removed.

The accompanying illustrations of trees represent the appearance of trees before and after the tops have been pruned, at the time of transplanting. It is always better to remove a

good proportion of the branches, when most of the roots are left in the ground. If all the top be left on, and most of the



roots cut off, the tree will not thrive so well; and it is far more liable to die.

KEEPING THE SOIL CLEAN.

The ground where trees are planted must be kept cultivated, as young trees will not thrive if the grass be permitted to form a sod around them; and if it should be necessary to plant them in grass grounds, care must be taken to keep the earth mellow and free from grass for three or four feet distant around them; and every autumn some well-rotted manure should be dug in around each tree; and every spring the bodies of the Apple, Pear, Plum, and Cherry-trees, and others that it is particularly desirable to promote the growth of, should be brushed over with common soft soap, undiluted with water. This treatment will give a thriftiness to the trees surpassing the expectation of

any one who has not witnessed its effect. Should the first season after transplanting prove dry, regular watering will be necessary, as from neglect of proper attention in this respect many lose a large portion of their trees during a drought.

PLANTING IN PROTECTED SITUATIONS.

Where there is a great extent of close fencing or wall it is advisable to plant trees of the same kind against different aspects. Such as one or two May Duke Cherries against a southern aspect, which will ripen earliest; next, against either an eastern or western; and lastly, against a northern aspect; by observing this method with Dwarf Cherries, Plums, Gooseberries, Currants, etc., the fruit will ripen in succession, and thus a supply is considerably lengthened. The early blooming fruit-trees will sometimes need protection in warm aspects; for which arrangements may be made by keeping awning, matting, netting, etc., at hand, to shelter them in threatening weather, or to screen them from the intense heat of the sun after a frosty night. This, with a sprinkling of water, as the air gets warm, will often prevent any serious consequences from slight frost.

INGREDIENTS FOR A GOOD COMPOST.

As all land possesses inorganic matter, which contains more or less of the elements comprised in the above remedies, and as some land contains more of one element than another, a judicious choice may be made from the above list, with a view to suit all the various kinds of soil; thus, in locations open to sea-breezes, which replenish the earth with salt, that article may be dispensed with, and another substituted; and on land which is

not susceptible of being improved by lime, perhaps the salt may be beneficial; but it is presumed that in most cases a compost made of all, or as many of the different articles as are attainable, would produce a lasting benefit to land in general, by sowing, say at the rate of a bushel per acre, once a week, at those seasons of the year when it will avail most in the destruction of reptiles and insects; and as the primary object of using the compost is to prevent our fruits from being destroyed, it would prove most effectual if sown out of a wagon, from which, in passing between the trees, the leaves could be dusted.

The ingredients alluded to consist of ashes, charcoal-dust, plaster-of-Paris, tobacco-dust, lime, salt, soot, pepper, potash, saltpetre, snuff, and sulphur. The proportions may be as follows: Of the first four articles, half a bushel of each; of the next three, a peck of each; and of the last five, say one pound of each; which will make together three bushels of compost.

SCRAPING THE BODIES OF FRUIT-TREES.

To destroy insects on the fruit-trees, and prevent them from creeping up and breeding on them, do as follows:—

Take a strong knife with a sharp point, and a sharp hook-like iron made for the purpose; with these scrape clean off all the moss and outside rough bark, and with the knife pick out or cut away the cankered parts of the bark and wood, in such a slanting manner that water cannot lodge in the sides of the stem of the trees. Having cleared the trees in this way, make up a mixture of lime, soot, and sulphur; put these ingredients into a pot or tub, pour boiling water upon them, and with a stick stir and mix them well together. When this strong mixture becomes cold, and about the thickness of whitewash, dip a brush in the mixture, and apply it to the stems and large branches of the trees, dabbing it well into the hollow parts of the bark.

It will be found eminently more efficacious to apply such liquid as hot as practicable. If it be boiling hot, by the time it is spread out on the cold bark of the tree it will be so cool that the bark will receive no injury in consequence of the liquid being hot. Such hot liquid will destroy the eggs of insects much quicker than when it is cold.—S. E. Todd.

APPLE.

Pommier. *Pyrus malus.*

And now we've arrived near the close of the year,
Winter Apples and *Cranberries* bring up the rear,
All are good of their kind, and we freely declare,
Not one of the *Fruits* we would willingly spare.

The Apple being so closely connected with our wants and enjoyments, is entitled to the first notice in the catalogue of our fruits. The Apple-Orchard is, in truth, the vineyard of our country; and the delicious beverage that can be obtained from some of the varieties of this excellent fruit being calculated to cheer the invalid, as well as to strengthen the healthy, entitles it to high consideration. It is one of our oldest and best fruits, and has become completely naturalized to our soil. None can be brought to so high a degree of perfection with so little trouble; and of no other are there so many excellent varieties in general cultivation, calculated for almost every soil, situation, and climate, which our country affords.

AGE OF APPLE-TREES.

The Apple-tree is supposed by some to attain a great age. Haller mentions some trees in Herefordshire, England, that were a thousand years old, and were still highly prolific; but Knight considers two hundred years as the ordinary duration of a healthy tree, grafted on a crab-stock, and planted in a

strong, tenacious soil. Speechly mentions a tree in an orchard at Burtonjoice, near Nottingham, about sixty years old, with branches extending from seven to nine yards round the bole, which in some seasons produced upwards of a hundred bushels of apples.

The Romans had only twenty-two varieties in Pliny's time. There are upwards of fifteen hundred now cultivated in the garden of the Horticultural Society of London, under name. The catalogue of the Linnæan Botanic Garden at Flushing contains about four hundred; and one of our enterprising horticulturists, Mr. William Coxe, of Burlington, New Jersey, enumerated one hundred and thirty-three kinds cultivated in the United States some years ago. They are usually divided into dessert, baking, and cider fruits. The first, highly flavored; the second, such as fall, or become mellow in baking or boiling; and the third, austere, and generally fruit of small size. Besides this division, Apples are classed as pippins or seedlings, pear-mains or somewhat pear-shaped fruits, rennets or queen-specked fruits, calviles or white-skinned fruits, russets or brown fruits, and some are denominated burknots.

The Apple may be propagated by layers; and many sorts by cuttings and budding; but the usual mode is by grafting on seedling stocks of two or three years' growth, and for dwarfing, on stocks of the Quince or Paradise Apple. All the principal varieties are cultivated as standards in the orchard, and should be planted from thirty to forty feet from each other, or from any other spreading trees, in order that the sun and air may have their due influence in maturing the fruit.

Many of the dwarf kinds may be introduced into the Kitchen-Garden, and trained as espaliers, or dwarf standards. An Apple-Orchard may be planted at any time after the trees are two years old from the graft; and as trees from young stocks will not come into full bearing until ten or twelve years old, they will bear removing with care at any time within that period.

Old Apple-trees may be grafted with superior varieties by being headed down to standard height. Most commonly, in

very old subjects, the branches only are cut within a foot or two of the trunk, and then grafted in the crown or cleft manner. In all the varieties of the common Apple, the mode of bearing is upon small terminal and lateral spurs, or short robust shoots, from half an inch to two inches long, which spring from the younger branches of two or more years' growth, appearing at first at the extremity, and extending gradually to the side. The same bearing-branches and fruit-spurs continue many year. fruitful.

PRUNING.

As, from the mode of bearing, Apple-trees do not admit of shortening the general bearers, it should only be practised in extraordinary cases. If trees have not the most desirable form when three or four years old, they should be judiciously pruned to promote regular spreading branches. In annual pruning, the main branches should not be cut, unless in cases of decay; but all superfluous cross branches and dead wood should be taken out, and the suckers removed. Espaliers require a summer and winter pruning.

SELECT DESCRIPTIVE LIST OF APPLES.

SUMMER FRUIT.

American Summer Pearmain, *Early Summer Pearmain.* This apple is of medium size and oblong form; its color bright red on the sunny side, and on the opposite side yellow, streaked or blotched with red; the flesh is very juicy, tender, fine flavored, and excellent. It ripens early in August, and is good either for the dessert or for cooking. Tree a good bearer.

Benoni. Fruit of medium size, form round and regular;

the flesh yellow, high-flavored, and excellent; it ripens in July and August. "The tree bears well," says Mr. Manning, "and should be found in every good collection."

Early Bough, *Sweet Bough.* The size of this fruit varies from medium to large; its color pale yellow; its form oblong; its skin smooth; flesh tender, juicy, sweet, and excellent. Ripens early in August in some localities.

Early Crofton, *or Irish Peach Apple.* An Irish apple, of the middle size and flattish shape; of an olive green color, much variegated with red; has a rich saccharine flavor; is much esteemed for the dessert, and is excellent also as a sauce apple. Ripens in August. The tree grows well, and is not apt to canker.

Early Harvest, *Prince's Yellow Harvest, Pomme d'été, July Pippin.* A very early apple, of medium size; bright straw color; flesh white and tender; juice rich, lively, and very fine. The tree bears young, and makes a fine garden espalier; ripening its fruit in July and August.

Early Red Juneating, *Red Margaret, Early Striped Juneating, Strawberry, Eve Apple of the Irish.* Fruit below the middle size; skin greenish yellow, richly and closely streaked with deep red; flesh white, juicy, breaking, sub-acid, very rich and agreeable. Ripens early in August.

Porter. This variety, says Mr. Manning, originated on the farm of the Rev. Samuel Porter, of Sherburne, Massachusetts. The fruit is large, of oblong shape; the skin a bright yellow, with a red blush; the flesh fine, sprightly, and agreeable. Ripens in September and October.

Red Astracan. This beautiful apple is of medium size, and roundish; the skin is dark red, covered with thick bloom like a plum; the flesh is white, tender, and somewhat acid. At perfection early in August.

Red Quarendon. *Devonshire Quarendon.* Sack Apple. A much esteemed Devonshire apple; of medium size; skin of a uniform deep rich crimson, with numerous green dots intermixed; flesh of a brisk, pleasant, and peculiar flavor. A very

desirable dessert apple: from August to October; tree very productive.

Summer Pippin, *Pie Apple.* This fruit, in size and shape, resembles the Fall Pippin; it differs in having a little more red on the sunny side, and in arriving at maturity about a fortnight earlier. It is a very popular apple in New Jersey.

Summer Queen. A large oblong apple, striped with red on a yellow ground; the flesh is yellow, very high flavored, and excellent. The tree is of vigorous growth, says Mr. Manning, a great bearer, and ripens its fruit in August.

Summer Rose, *Harvest Apple.* A very beautiful and excellent fruit, of moderate size and roundish form; the skin is yellow, striped and mottled with red; the flesh is sweet, juicy, and fine: in July and August; tree a great bearer.

Williams's Early, *Williams's Favorite Red.* This apple originated in Roxbury, Mass.; it is of medium size; oblong form; the skin a bright and deep red; the flavor pleasant and agreeable. The tree is a great bearer, and its fruit commands a good price in the Boston markets: in August and September.

Beauty of Kent. Fruit very large, roundish, but flat at the base; skin smooth, greenish-yellow, with stripes of purplish-red; flesh juicy, crisp, and tender, with an agreeable sub acid flavor: in October and November.

Canadian Reinette, *Reinette du Canada blanche, Portugal Apple, Grosse Reinette d'Angleterre, Pomme du Caen, Mela Janurea.* Fruit large, broad, and flat; skin greenish-yellow, tinged with brown; flesh yellowish-white, firm, juicy, and of a high sub-acid flavor: from December to March.

Chandler. A native winter fruit of Pomfret, Connecticut. Large, roundish, slightly flattened; skin thickly streaked with dull red on a greenish-yellow ground with grey dots; flesh greenish-white, tender, juicy, and rich.

Court of Wick Pippin, *Fry's Pippin, Golden Drop, Wood's Transparent Pippin, Phillips' Reinette, Knightwick Pippin.* An English winter variety, well adapted for Canada

or Maine. Fruit below the middle size, regularly formed, roundish-ovate; skin greenish-yellow, mottled with orange and red at maturity; flesh pale yellow, tender, juicy, and high flavored.

Dutch Mignonne, *Reinette Dorée, Pomme de Laak, Paternoster Apple.* A winter fruit, large, roundish; skin dull orange, streaked and mottled with red, dotted with russet; flesh crisp; juice plentiful, with a delicious aromatic flavor.

Easter Pippin, *Claremont Pippin, Ironstone Pippin, Young's Long Keeping, French Crab.* Fruit middle size, somewhat globular; skin deep green, shaded with a pale livid brown; flesh very firm, and though not juicy, of a good, subacid flavor. This variety will keep sound two years.

Herefordshire Pearmain, *Winter Pearmain, Royal Pearmain, Royale d'Angleterre.* A fine winter dessert fruit above medium size, form oblong; skin russety-green, mottled with red, and dotted with greyish specks; flesh tender, with pleasant aromatic flavor. Tree an abundant bearer.

Lyscum, *Osgood's Favorite.* A Massachusetts variety of merit. Fruit large, round; skin greenish-yellow, mottled with red; flesh fine grained, exceedingly mild and agreeable in flavor: in use from September to November.

Lyman's Pumpkin Sweet. A very large apple raised by Mr. S. Lyman, Manchester, Connecticut. Skin smooth, pale yellow; flesh firm, sweet, juicy, and excellent for baking: in the autumn. The tree bears prodigious crops.

Northern Spy. A native variety of the Spitzenberg family. Fruit large, conical, considerably ribbed; skin smooth, yellow ground, nearly covered with rich dark red and purplish streaks! flesh yellowish-white, and of a rich, aromatic, subacid flavor: good from December to May.

Peck's Pleasant. This variety resembles the Yellow Newtown Pippin, only it is larger; skin smooth, and when first gathered green, changing to yellow, with bright blush cheek and scattered grey dots; flesh yellowish, fine grained, juicy, and tender, with a delicious high aromatic flavor in winter.

Ross Nonpareil. A delicious Irish variety, approaching in flavor to some kinds of pear; fruit below medium size, roundish; skin covered with a thin mellow russet, faintly stained with red; flesh greenish-white, tender, and of a rich aromatic flavor: in perfection the end of October. Tree a profuse bearer, and worthy of a place in every amateur's garden.

Summer Sweet Paradise. A Pennsylvania fruit of large size; round, a little flattened at both ends; skin rather thick, pale green, tinged with yellow, and sprinkled with large grey dots; flesh tender, crisp, juicy, and of a sweet, rich, aromatic flavor: ripe in August and September.

Sops of Wine, *Rode Wyn Appel, Sapson, Sops in Wine.* A handsome little autumn apple for the dessert; skin smooth, crimson, covered with a delicate light bloom; flesh white, with stains of a pinkish hue, firm, crisp, and juicy.

Victuals and Drink, *Big Sweet Pompey.* Fruit large, oblong, rather irregular; skin rough, dull yellow, marbled with russet; flesh yellowish, tender, breaking, and of a rich sprightly flavor: in perfection from October to March. The tree is a moderate bearer.

Winesap, *Wine Sop.* This is a good winter apple for the table, and one of the finest cider fruits; it is of medium size, rather oblong; skin smooth, of a fine dark red and yellow ground; flesh yellow, firm, with a rich high flavor.

AUTUMN FRUIT.

Alexander, *Emperor Alexander, Aporta.* Fruit very large, somewhat cordate, smallest at the crown; of a greenish-yellow colour, striped or marbled with red; pulp tender, sweet, rich, and aromatic; ripens in October, and lasts till Christmas.

American Nonpareil, *Doctor Apple.* A beautiful apple of medium size and roundish form; its color yellow, streaked and stained with red on the sunny side; flesh firm, juicy, and agreeable. A very fine market apple in October and November. Tree a great bearer.

Boxford. A very superior variety, says Mr. Manning, which was first cultivated at Boxford, Massachusetts. Fruit roundish, of medium size; skin striped with red and yellow; the flesh yellow, rich, and good. The tree is a great bearer, and ripens its fruit in October.

Cumberland Spice. A fine dessert fruit, large, rather oblong; of a pale yellow color, clouded near the base; the flesh white, tender, and of a fine flavor. It ripens in autumn, and will keep till February.

Downton Pippin, *Elton Golden Pippin, Knight's Golden Pippin.* The Downton Golden Pippin is a most abundant bearer, and the fruit extremely well adapted for market; it is rather larger than the common Golden Pippin; skin nearly smooth; yellow, sprinkled with numerous specks; flesh yellowish, crisp, with a brisk, rich, sub-acid juice; specific gravity 10.79. Ripe in October and November, and will keep good till Christmas.

Drap d'Or of France, *Cloth of Gold.* This apple is very large and handsome; its form globular; its color a fine yellow, with dark specks; its flesh white, firm, and rich-flavored. The tree bears well, and should be found in every good collection. Fruit in perfection from September to November.

Fall Harvey. This is a large and handsome fruit, the shape flat, the skin light yellow, with a bright red cheek; flesh yellow, firm, rich, and high flavored. Mr. Manning considered it "the finest Fall and Early Winter variety; a good bearer, and deserving extensive cultivation."

Fall Pippin, *Cobbett's Fall Pippin, Reinette Blanche d'Espagne, D'Espagne, De Rateau, Concombre Ancien, White Spanish Reinette, Camuesar.* This extremely valuable variety stands in the first class of autumn fruits, and is very large; its form is roundish oblong; skin smooth, yellowish green, tinged with orange; flesh yellowish, crisp, and tender, with a very rich, sugary juice. It ripens in October, and keeps well as a fall apple.

Fameuse, *Pomme de Neige.* A Canadian apple of great

beauty; in size medium; skin light green, stained with bright red; flesh white, very tender; juice saccharine, with a musky perfume; ripe in October, and will keep good till Christmas Tree hardy and productive.

Golden Russet, *Aromatic Russet.* A dessert apple, of medium size, and of a pale copper-colored russet; in great repute for its rich saccharine, aromatic, and slightly musky flavor. The tree is hardy and very productive: in October and November.

Gravenstein. Fruit rather large and compressed; of a yellowish green color, striped with red; flesh crisp, and high flavored; ripens in October, and lasts till April. This variety originated in Germany, and is considered the best dessert apple in that country.

Kenrick's Red Autumn. A native apple of largish dimensions, raised by John Kenrick, Esq., of Newton, Massachusetts; color pale green in the shade, but bright red next the sun, and streaked with deeper red; the flesh white, stained more or less with red; tender, juicy, and rich, with an agreeable sub-acid flavor; ripe in October.

Kilham Hill. This apple, one of the most saleable varieties in Salem markets, originated on the farm of Dr. Kilham, in Wenham, Essex county, Massachusetts; the size is above medium; form a little oblong; the skin yellow, striped with red; the flesh is yellow and high flavored; from September to November.

Monmouth Pippin. This variety originated in Monmouth county, New Jersey. It is above medium size, of greenish color, striped with red; flesh firm, and of pleasant flavor. It is considered one of the most saleable and productive varieties of the season; and will keep good till after Christmas.

Orange Sweeting, *Yellow Sweeting, Golden Sweeting.* This variety is much cultivated near Hartford, Connecticut, for the Boston, Providence, and Philadelphia markets; the fruit is rather large, flattened at its base and summit; the color yellow, or orange; flesh very sweet and excellent: from September to December.

Red Ingestrie. A first-rate dessert apple, of medium size, and bright yellow color, deeply tinged with red; raised by Mr. Knight, President of the London Horticultural Society. The tree bears well in America, and ripens its fruit in October, which is very rich, juicy, high flavored, and grateful to the palate.

Red and Green Sweeting, *Prince's Large Red and Green Sweeting.* The fruit is of oblong shape; color green, striped with red; the pulp is very sweet, tender, and of delicious flavor: from September to November.

Seek no Farther, *Rambo, or Romanite.* This apple is much cultivated in Pennsylvania and New Jersey. Its form is flat, resembling the Vandervere in appearance, but is a more juicy fruit; the skin pale yellow, streaked with red; flesh tender and sprightly during the autumn months.

Stroat, *Straat.* A fine autumn apple, introduced by the late Jesse Buel, Esq., of Albany; in size medium; form rather oblong; skin yellowish green; flesh yellow and tender; juice rich and lively; in use from September to December.

Yellow Ingestrie. A beautiful apple, raised by Mr. Knight, President of the London Horticultural Society. The size is small, form round and regular; the color of the skin golden yellow, with some black spots; the flesh yellow, firm, and delicate. The tree is an abundant bearer, and ripens its fruit in October. The late Judge Buel considered this variety as likely to rival the Lady-apple as a fashionable fruit.

York Russeting. A very large russety apple, well known about Boston. Its form is rather oblong; its flesh pleasant and agreeably acid; an excellent apple: from October to December.

WINTER FRUIT.

Æsopus Spitzenberg. A beautiful apple; large and oval; of red color, covered with numerous white specks; the flesh is yellowish; slightly acid, and of the finest flavor; ripens in October and continues good till February.

Baldwin. No apple in the Boston markets is more popu

lar than this; it is rather above medium size; its form round; its color bright red, streaked with yellow; its flesh is juicy, rich, saccharine, with a most agreeable acid flavor. The tree bears fruit abundantly, which ripens in November, and keeps till February or March.

Barcelona Pearmain, *Speckled Golden Reinette, Reinette Rouge, Reinette Rousse, Reinette des Carmes, Glace Rouge, Kleiner Casseler Reinette.* This variety is said to be a very productive and excellent dessert apple; fruit of medium size; oval, not angular; color brownish yellow in the shade, deep red next the sun; flesh firm, yellowish, with a rich aromatic agreeable acid: from November till February.

Beauty of the West. A large, oblate, beautiful fruit, of yellow and red color; its flesh juicy, rich, saccharine, and firm. A good marketable apple from November until March.

Bell Flower. A very large and beautiful Apple; its color bright yellow, with an occasional blush on the sunny side; its form oblong; the flesh tender, juicy, rich, and finely flavored, and is alike excellent for the dessert and for cooking. It ripens early in November, and will keep all the winter. It is a valuable market fruit.

Blenheim Pippin, *Woodstock Pippin, Blenheim Orange.* Fruit large, roundish, of a yellowish color, tinged with red next the sun; pulp sweet and high flavored: ripe in November, and keeps till March: a very superior dessert apple.

Blue Pearmain. This variety is well known about Boston as a large apple, of red color, covered with a dense blue bloom, and of a delicious flavor; good as a dessert or for cooking: from October to January. The tree grows strong, and is very productive.

Court Pendu, *Capendu, Court Pendu Plat, Garnon's Apple.* An estimable dessert apple, of medium size; in shape round, depressed; the color yellow, a good deal covered with full red; it is of a high saccharine flavor and of close consistence; the fruit keeps till February or March. The tree grows upright, and bears well.

Danvers Winter Sweet, *Epses Sweet, Danvers Sweeting.* This variety originated at Danvers, near Salem, Massachusetts; fruit of medium size; a little oblong; skin yellow, slightly tinged with red; its flesh sweet and excellent cooked, or as a dessert: from November to April. The tree is a great bearer, and of rapid growth.

Domine, *Domini.* A first-rate winter apple, of medium size and greenish yellow color, clouded with brown blotches; the flesh is juicy, tender, and excellent. Tree a great bearer.

Golden Ball, *Golden Apple.* A beautiful and superior fruit from the State of Maine; of large size and golden yellow color; flesh firm; juice very rich, sweet, aromatic, with a good proportion of acid. It will keep good from November to April.

Golden Harvey, *Brandy Apple.* A dessert apple, not larger than the Golden Pippin; color light yellow, with a flush of red, and embroidered with a roughish russet. It is called Brandy Apple from the superior specific strength of its juice, being 10.85; it is of remarkably close texture, very rich in flavor, and will keep till April or May.

Green Sweet, *Green Sweeting, Green Winter Sweet.* This apple is much cultivated in Massachusetts. It is of medium size; the skin dull green, approaching to yellow; the flesh very sweet and delicious. It possesses the valuable property of retaining its soundness till May or June.

Hubbardston Nonesuch. A large Apple of globular form; red and yellow color, streaked and blotched; the flesh is juicy and of excellent flavor; from December to March. The tree is of vigorous growth, a great bearer, and worthy of extensive cultivation.

Jonathan. *King Philip, New Spitzenberg, Philip Rick.* A winter fruit very generally admired in the State of New York. It is of medium size; the skin of pale yellow and bright red color, occasionally tinged with purple; flesh tender, juice abundant, and highly flavored. This fruit will keep till May.

Lady Apple, *Pomme d'Api.* Fruit small, flat; of pale yellow color, tinged with a deep red on the side; flesh crisp,

sprightly, and pleasant: ripens in November, and continues till April. It is a very saleable fruit on account of its great beauty.

Ladies' Sweeting, *Winter Sweeting.* This apple is above medium size; conical; skin yellow, streaked and mottled with red; flesh juicy, sweet, and high flavored: from November to May.

Lemon Pippin. An old and much esteemed dessert apple; of medium size and oval shape, much like a lemon both in form and color, having a firm texture, brisk flavor, and plenty of acid: from October to March. Tree handsome and a great bearer.

Maiden's Blush, *Hawthornden.* Fruit large, roundish; skin pale greenish-yellow, tinged with blush; the pulp is white, tender, juicy, and acid; and the fruit is good for the table as well as for all kitchen purposes: in September and October. The tree is hardy and prolific.

Malcarle, *Charles Apple, Mela Carla, Pomme Finale.* A far-famed fruit. In the climate of Italy, this is supposed to be the best apple in the world. It is cultivated extensively in the territories of Genoa, as an article of export and commerce to Nice, Barcelona, Cadiz, and Marseilles. The fruit is rather large, its form inclining to globular. Its beautiful waxen skin is a little marbled with a very faint green near the eye; its color in the shade is a pale yellow, tinged with flaming crimson next the sun; the flesh is white, tender, delicate, sweet, with the fragrant perfume of roses. It ripens in September, and will keep till spring.

Menagere. Mr. Manning pronounced this to be the largest apple he had seen; the form is flat, like a large English turnip; the skin of a light yellow; the flesh pleasant, but more adapted to the kitchen than the dessert: from October to February. It bears well trained as a dwarf.

Minister. A native apple of large size, and oblong shape; the skin a light greenish-yellow, striped with bright red; flesh yellow, light, high-flavored, and excellent. Mr. Manning considered this as one of the finest fruits that New England ever produced. It ripens in November, and will keep till after Christmas.

Monstrous Pippin, *Baltimore, Gloria Mundi, Ox Apple*. Fruit of enormous size, often weighing twenty five ounces or more; of a pale yellowish-green and bluish color, with white spots; and of a sprightly flavor, excellent for cooking: ripens in October, and continues fit for use till January.

Murphy. This apple in appearance resembles the Blue Pearmain; the shape is more oblong, the size not so large; the skin pale red, streaked or blotched with darker red, and covered with blue bloom; flesh white, tender, and good. Raised from seed by Mr. Murphy, and introduced to notice by Mr. Manning.

Newtown Pippin, *American Newtown Pippin, Yellow Newtown Pippin.* This variety, when perfectly matured, is considered by some the finest apple in our country; its skin is green, changing to an olive yellow at maturity, having a thin russet covering the greatest part of the base; flesh pale-yellow and firm; juice saccharine, and possessing a rich and highly aromatic flavor; from December to April.

Newtown Spitzenberg, *Matchless.* A beautiful apple of medium size; skin streaked, and tinged with red and yellow; flesh yellow, rich, and highly flavored: from October to February.

Norfolk Beaufin. Fruit middling size, flattish, of a deep red and pale green color; the flesh is firm and savory; the tree hardy, upright, and a good bearer; fruit excellent for use in the kitchen, and highly esteemed for the dessert. It ripens in November, and is frequently to be obtained in England in July following.

Ortley Pippin, *Ortley Apple, Vandyne, Woodman's Song of Prince.* A fruit very much resembling the Yellow Newtown Pippin, but a little more oval; skin olive yellow at maturity; partially covered with pink and russet; flesh yellow, crisp, and breaking; very juicy, with the same pine-apple flavor which distinguishes the Newtown Pippin: good from November to April.

Pennock's Red Winter, *Pelican.* Fruit very large and compressed; of deep red color, streaked with yellow; flesh

tender, juicy, and of a sweet and pleasant flavor: ripens in November, and will keep good till March. It is a very popular apple in the Philadelphia markets.

Pumpkin Sweet, *Ramsdell's Red Pumpkin Sweet.* A beautiful fruit, over medium size, round, inclined to oblong; of a dark red color, covered with dense blue bloom; flesh tender, rich, and sweet. It ripens in November, and keeps till January. The trees bear prodigious crops.

Rhode Island Greening. Fruit large and depressed; skin at maturity greenish yellow; flesh slightly acid, and of the finest flavor: ripens in November, and continues till April. A most estimable apple for cooking as well as for the dessert.

Ribstone Pippin, *Formosa Pippin, Traver's Apple, Glory of York.* Fruit of medium size, roundish, and partially depressed; of a pale yellow color, tinged with red; pulp slightly acid, and of fine flavor: ripens in November, and continues till April. It is one of the most popular dessert apples in England.

Roxbury Russet, *Boston Russet, Pineapple Russet.* This variety is cultivated extensively in Massachusetts for the Boston markets, and for exportation. The fruit is of medium size; of a fine yellow russet color, mixed with dull red; flesh white, juicy, rich, sub-acid, and excellent; for use in winter, and will keep till June.

Swaar Apple. A much celebrated winter table fruit in some parts of New York and New Jersey; it is a large apple of uncommon flavor and richness; skin of a greenish yellow, tinged with blush. The tree is very productive, and highly deserving cultivation in every collection of fine fruit. Good till March.

Vandevere. An apple of medium size, the form flat; skin pale red, with rough yellowish blotches; flesh yellow and tender; juice plentiful, rich, and sprightly: from October till January.

Western Russet, *Putnam's Russet.* This variety is extensively cultivated in Muskingum county, Ohio, where it is

esteemed above all others of their fine winter varieties. It is above the middle size, of a greenish-yellow color, covered with russety blotches, and will keep all the winter.

White Winter Calville, *Calville Blanche d'Hiver, Bonnet Carre.* This fruit is large; its color at maturity bright yellow, tinged with red; its form rather flat; flesh white, tender, and pleasant: from November till March. Tree an abundant bearer.

Wine Apple, *Hay's Winter, Large Winter Red, Fine Winter.* A variety highly esteemed in the Philadelphia markets; the fruit is large, of bright red color, striped with yellow, the stalk end russety; its flesh is rich, aromatic, and pleasant: from October to February. The tree bears young and abundantly.

CIDER FRUIT.

Campfield, or Newark Sweeting. This apple is next in reputation, as a cider fruit, to the Harrison, and is often mixed with that apple in equal proportions when ground; it is of the middle size, skin smooth, of red and yellow color; the flesh is white, firm, sweet, and rich.

Granniwinkle. Fruit of moderate size, rather oblong; the skin a dark red, somewhat rough; flesh yellow, sweet, and rich. It is commonly mixed with the Harrison for making cider of a superior quality: ripe in November.

Hewe's Virginia Crab. From this fruit is obtained the celebrated Crab Cider; it is of small size, nearly round; skin of a dull red, streaked with greenish yellow; the flesh is fibrous and astringent; juice acid and austere.

Harrison, *Harrison's Newark.* This fruit is much celebrated in New Jersey as a cider apple; it is somewhat ovate, below the middle size; the skin is yellow, with black spots; flesh yellow, firm, rich, and sprightly. Ten bushels will make a barrel of exquisite cider, from which may be taken fourteen quarts of distilled spirits.

APRICOT.

ABRICOTIER. *Prunus Armeniaca.*

The *Margaret Apple*, the pride of our clime,
With the *Apricot*, *Raspberry*, true to their time,
Are pleasant companions, as summer e'er met,
Though others, as welcome, are coming on yet.

The fruit of the Apricot is next in esteem to the Peach; and as it ripens three or four weeks earlier, should be more generally cultivated. The flowers appear in April, on the shoots of the preceding year, and on spurs of two or more years' growth; and the fruit ripens in July and August. The London Horticultural Society's catalogue describes fifty-four sorts; and Messrs. Prince have eighteen in their catalogue. Besides these, is the Peach Apricot, a large fruit, supposed to be a hybrid between a Peach and an Apricot.

Our enterprising fellow-citizen, Mr. William Shaw, has succeeded for many years in maturing large quantities of this excellent fruit on standards; but they ripen best when trained against close fences. In England, some of the varieties are cultivated as standards and espaliers; but they seldom bear much fruit under ten or twelve years, and then the fruit is abundant and of the finest flavor. They are commonly cultivated as wall trees, in an east or west aspect; for if they are planted to face the south, the great heat causes them to be mealy before they are eatable. New varieties are procured from seed, as in the Peach, and approved sorts are perpetuated by budding on plum-stocks.

The varieties of the Apricot, in general, bear chiefly upon the young shoots of last year, and casually upon small spurs rising on the two or three-years-old fruit branches. The Moorpark bears chiefly on the last year's shoots, and on close spurs formed on the two-year-old wood. The bearing-shoots emit the blossom-buds immediately from the eyes along the sides, and the buds have a round and swelling appearance.

PRUNING APRICOT-TREES.

Apricot-trees may be planted at any time after the head is formed; some head them down in the nursery bed, and remove them to their destined places when five or six years old. Standards will require only occasional pruning, to regulate such branches as may be too numerous, too extended, or cross-formed, and to remove any casually unfruitful parts and dead wood. The regular branches forming the head of the tree should not be shortened unless necessary.

The general culture of the wall Apricots comprehends a summer and winter course of regulation, by pruning and training. The fan method is generally adopted, but some prefer training horizontally. With young trees some contrive to fill the wall by heading down twice a year.

The winter, or early spring management, comprehends a general regulation both of the last year's shoots and the older branches. A general supply of the most regularly situated young shoots must be everywhere retained for successional bearers the ensuing year. Cut out such branches as are not furnished with competent supplies of young wood, or with fruit spurs, to make room for training the most promising branches retained. Generally, observe in this pruning to retain one leading shoot at the end of each branch; either a naturally placed terminal, or one formed by cutting (where a vacancy is to be furnished) into a proper leader. Let the shoots retained for bearers be moderately shortened. Reduce strong shoots in the least proportion—cutting off one-fourth or less of their length. From weak shoots take away a third, and sometimes a half. This shortening will conduce to the production of a good supply of lateral shoots the ensuing summer from the lower and middle placed eyes; whereas without it, the new shoots would proceed mostly from the top and leave the under part of the principal branches naked, and the lower and middle parts of the tree unfurnished with proper supplies of bearing-wood. Never prune below all the blossom

buds, except to provide wood, in which case cut nearer to the origin of the branch. As in these trees small fruit-spurs, an inch or two long, often appear on some of the two or three years' branches furnished with blossom-buds, these spurs should generally be retained for bearing. As each tree is pruned, lay in the branches and shoots from three to six inches distance, and nail them straight or close to the fence or wall.

The summer pruning is principally to regulate the young shoots of the same year. In the first place, take off close all the irregular foremost shoots, taking care to retain a competent supply of close side-shoots, with a good leader to each parent branch. Continue these mostly at full length all the summer, regularly trained in, to procure a sufficiency to choose from, in the general winter pruning for new bearers the next year. If the summer regulation commences early, while the shoots are quite young and, as it were, herbaceous, those improper to retain may be detached with the finger and thumb; but when of firmer growth, they must be removed with the knife. If any strong shoots rise in any part where the wood is deficient, they may be topped in June, which will cause them to produce several laterals the same year, eligible for training in, to supply the vacancy.

Sometimes the fruit is much too numerous, if not destroyed by insects often growing in clusters; in which case thin them while in a young, green state, leaving the most prominent fruit singly, at three or four inches distance, or from about two to six on the respective shoots, according to their strength. The Apricots so thinned off, and the first principal green fruit, are very fine for tarts.

SELECT DESCRIPTIVE LIST OF APRICOTS.

Breda, *Abricot de Hollande, Amande Aveline, Royal Persian.* Fruit medium size, of a round form, and deep yellow color; the pulp is soft and juicy; the tree is a great bearer

and the fruit, which ripens early in August, is in great esteem.

Brussels. Highly esteemed for its productiveness; fruit medium size, inclining to an oval form; of a yellow color, and next the sun covered with numerous dark spots; the flesh is of a greenish-yellow color, of a brisk flavor, and not liable to become mealy: ripens in August.

Blotched-Leaved Roman, *Blotch-Leaved Turkey, Variegated Turkey, Abricot Macule of the French.* Fruit middle size, in form slightly compressed, inclining to oval; skin dull straw-color, with orange or red spots; flesh pale straw-color, soft, dry, rather mealy; kernel rather bitter. A very hardy and productive variety; ripe towards the end of July.

Early Orange, *Royal George, Royal Orange.* The fruit of a medium size; of a deep yellow color, spotted with red or dark purple next the sun; flesh deep orange, succulent, and well flavored; not perfectly a freestone: ripens early in August.

Hemskirke. Fruit middle-sized, roundish, slightly compressed; of a bright yellow color; flesh tender, juicy, with a particularly rich, delicate flavor, resembling that of the Green Gage Plum: ripe in July.

Large Early Apricot, *Abricot Gros Precoce, Abricot de St. Jean, Abricot de St. Jean rouge, Abricot gros d'Alexandrie.* Fruit somewhat oblong; skin downy, orange, spotted with red; flesh orange, juicy, and rich, parting from the stone. This is the earliest of all apricots; in France it has ripened by midsummer-day, whence its name of *A. de St. Jean.*

Moorpark, *Anson's, Temple's, Dunmore's Breda.* The tree is of vigorous growth, and extraordinarily productive; the fruit is very large; of a bright gold color, or orange, with dark spots next the sun; flesh orange color, melting, and excellent: ripens in August.

Musch, *Musch.* A fine new variety from Persia; in shape round; of a deep yellow color, and remarkable for the transparency of its pulp, through which the stone is visible; the flesh is very fine and agreeable: ripens in July.

Peach Apricot, *Abricot Peche, Abricot de Nancy, Ansen's Imperial.* This is a first-rate fruit; form variable, generally flattened; skin slightly downy; fawn-color next the sun, tinged with reddish spots or points; pulp yellow, melting, juice abundant, high flavored, and excellent: ripens early in August.

Purple, *Alexandrian Abricot, Abricot Angoumois, Abricot Violet, Black Apricot.* A small, globular, downy fruit, a little oblong; of a pale red color, becoming deep red or purple next the sun; flesh pale red, but orange next the stone; a little acid, but good: ripens in August.

Red Masculine, *Abricot Precoce, Abricot Hatif Musque, Early Masculine.* This is an old and very early variety, the fruit of which is small, of a roundish form, and greenish red color; the pulp is tender; the tree a good bearer, and the fruit esteemed for its earliness and tart taste: ripens in July.

Royal, *Abricot Royale.* This fruit is next in size to the Moorpark; rather oval, compressed; of dull yellow color, slightly red; flesh pale orange, firm, juicy, sweet, and high flavored, with a slight acid: ripens early in August.

Turkey, *Large Turkey.* A superior apricot; fruit of a medium size; deep yellow color, with red blotches next the sun; form globular: flesh firm, juicy, rich, and excellent: ripe in July and August.

White Apricot, *White Masculine, Abricot Blanc.* Fruit, in size and figure similar to the Red Masculine. Skin nearly white; flesh white, very delicate; juice sweet, with an agreeable peach-like flavor. Ripe in July.

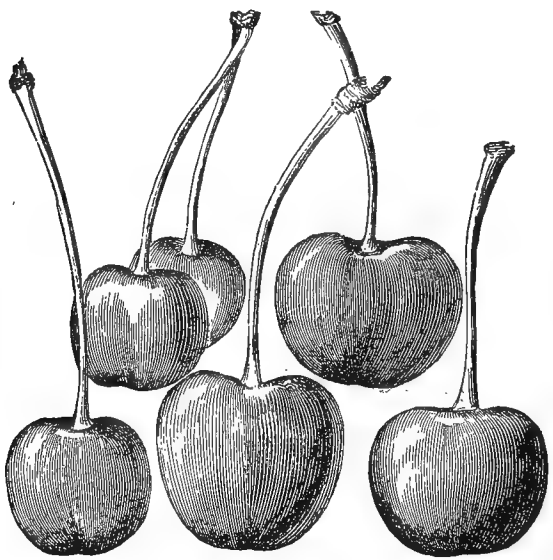
CHERRY.

Cerisier. *Prunus cerasus.*

The accompanying illustrations of choice Cherries will furnish a correct idea of the comparative size of each variety.

The Cherry of the cultivated varieties is said to have been first introduced into Italy in the year 73 from a town in Pontus, in Asia, called Cerasus, whence its specific name; and it was introduced into Britain one hundred and twenty years afterwards.

The Romans had eight species in Pliny's time—red, black, tender-fleshed, hard-fleshed, small bitter-flavored, and heart-



Early Purple Guigne. Black Tartarian. Black Eagle.

shaped. There are now upwards of two hundred in cultivation. The French divide their Cherries into griottes, or tender-fleshed; bigarreaux, or heart-shaped; and guignes, or small fruit. The fruit of many varieties is somewhat heart-shaped, whence they are called ox-heart, white-heart, and black-heart. Why some sorts are called dukes, is not so obvious. The morello cherry is very different from the other varieties, bearing almost exclusively from the preceding year's wood, and the pulp of the fruit having the consistence and flavor of the

fungi called morel; whence the name. The Chinese Cherry is valuable on account of its bearing an excellent fruit, and ripening it in forcing-houses.

Cherries are grafted or budded on seedlings from Cherry-stones, and from seedlings of the red and black mazzard. For dwarfing, they are worked on the morello, or perfumed Cherry; the latter is preferred in Holland. In this country, the budding system is more frequently practised on the various species of stone fruit than grafting.

PRUNING CHERRY-TREES.

Cherry-trees, in general, produce the fruit upon small spurs or studs, from half an inch to two inches in length, which proceed from the sides and ends of the two-year, three-year, and older branches; and as new spurs continue shooting from the extreme parts, it is a maxim in pruning both standards and espaliers, not to shorten the bearing branches when there is room for their regular extension.

The Morello is, in some degree, an exception, as it bears principally on the shoots of the preceding year, the fruit proceeding immediately from the eyes of shoots; and bears but casually, and in a small degree, on close spurs formed on the two-year-old wood, and scarcely ever on wood of the third year. Therefore, in pruning, leave a supply of young shoots on all the branches from the origin to the extremity of the tree, for next year's bearers.

All kinds of Cherry-trees, except the Morello, are apt to grow very tall. To remedy this, and to enable them to form handsome heads, the leading shoot should be cut off when of about three years' growth from the bud; after which give only occasional pruning, to reform or remove any casual irregularity from cross-placed or very crowded branches, and take away all cankery and decayed wood.

Dwarf Cherry-trees may be introduced into the Kitchen-Garden, and trained as espaliers. When Morellos are planted

in an orchard, they may be placed from fifteen to twenty feet apart. Trees of the duke kind may be planted from twenty-five to thirty feet apart; and the heart-shaped, in general, will require to be from thirty to forty feet from each other, or from any spreading trees.

Cherry-trees may be removed the first year after the bud is established; but they will bear removal at any time before they come into bearing, which is about the fifth year.

The gum which exudes from Cherry-trees is equal to Gum-Arabic; and Hasselquist relates, "that more than one hundred men during a siege, were kept alive for nearly two months, without any other sustenance than a little of this gum taken sometimes into the mouth, and suffered gradually to dissolve." The wood of the wild Cherry-tree is hard and tough, and used by turners and cabinet-makers.

SELECT DESCRIPTIVE LIST OF CHERRIES.

DUKE AND ROUND FRUIT.

Ambree de Choisy, *Belle de Choisy* of Downing. *Cerise. Doucette, Cerise de la Palembre* of the French gardens. A middle size roundish fruit, highly deserving of cultivation. Skin transparent, red, mottled with amber; flesh amber-colored, tender, and sweet. It bears well as a standard, and ripens its fruit in June.

Archduke, *Royal Duke, Griotte de Portugal*, Portugal Duke. A large globular-formed red cherry; like the May Duke, it grows in clusters, but the tree grows more vigorously than that variety, and yields an abundance of fruit, which hangs a long time on the tree, improving in flavor in July.

Belle et Magnifique. A fine round cherry, much esteemed in Massachusetts. The tree is vigorous and productive; the fruit truly magnificent; its color red, mottled with white spots,

and abounding in acid; valuable from its late maturity in July.

Carnation, *Cerise Nouvelle d'Angleterre*, and *Cerise de Portugal*, of Downing. *Late Spanish*, *Griotte d'Espagne*, and *Griotte de Villenes*, of Prince. Fruit round, of a pale red color; flesh firm, with a very good-flavored juice; makes excellent preserves, and is good for the table in July.

Downer's Late Red, *Downer's Favorite*. A large round cherry, deserving a place in every garden, raised by S. Downer, Esq., of Dorchester, Massachusetts; color light red; flesh firm and of a fine sprightly flavor; ripening after most other superior varieties are gone, on which account this variety is highly prized in the markets.

CHERRIES.

Kentish, *Early Kentish*, *Early Richmond*, Virginian May, *Long Stem Montmorency*, *Montmorency à longue queue*. Mr. Prince says that other varieties are sold erroneously under the above names. The fruit of this variety is round; skin red; flesh sprightly acid; juice abundant; excellent for the table and kitchen. It will hang long on the tree, in favorable weather, in June and July.

Late Duke, *Cerise Anglaise tardive*, *Unique nouvelle*. Fruit large, above the size of a May Duke; obtuse heart-shaped, rather flat; skin a shining dark red; flesh amber-colored, tender, juicy, and high flavored. Tree a great bearer, and ripens its fruit in July.

May Duke, *Early Duke*, and *Cerise Guigne* of Downing. *Holman's Duke*, *June Duke*, *Griotte de Portugal*, and *Royale hative*, of Prince. Fruit of medium size, roundish, growing in clusters; the skin, when fully ripe, very dark red: the flesh is soft and juicy, with a very pleasant acid. This excellent variety ripens about the middle of June.

Morello, *English Morello*, *Milan*, *Cerise du nord*, Griotte du nord. Fruit of medium size, round; of a dark red color,

nearly black at maturity; flesh deep red, tender, juicy, and blended with an agreeable acid; ripe in July, and hangs some time on the tree. This variety is excellent for preserves and for brandy.

Plumstone Morello. A tree of moderate size, of the Duke or Kentish species; a very large, dark, round cherry, nearly black; of a rich acid flavor. The stone is very large, and resembles that of a plum; a native of Virginia, introduced by William Prince, of the Linnæan Botanic Garden, Flushing.

Waterloo. A large, roundish, dark cherry, inclining to black at maturity; the flesh is firm and of an excellent flavor; raised by a daughter of Mr. Knight, and so named from perfecting its fruit soon after the battle of Waterloo. The tree is of strong but irregular growth, and ripens its fruit in July.

HEART-SHAPED AND BIGARREAUX.

American Amber, *Early Amber, New Honey.* A beautiful heart-shaped cherry, of medium size, and dark pink or amber color; flesh rich, sweet, and excellent. It ripens early in June.

American Heart, *Arden's White Heart.* A medium-sized cherry, of pale yellowish color; obtuse heart-shaped, flesh tender and palatable, but not high flavored. The tree, which ripens its fruit in June, is very productive.

Belle de Rocmont, *Bigarreau de Rocmont, Cœur de pigeon, Flesh Col. Bigarreau.* A beautiful heart-shaped fruit, of pale yellowish and red color, marbled and glossy; flesh firm, white; juice sprightly and of an agreeable flavor: in June and July.

Bigarreau, Black. *Manning's Black Bigarreau.* This variety is considered highly deserving a place in every good collection; it originated in Mr. Manning's nursery at Salem; the fruit is large, color black; flesh sweet, and of a peculiar rich flavor. The tree grows handsome, is very productive, and ripens its fruit in July.

Bigarreau, *Graffion, Turkey Bigarreau, Yellow Spanish, White Bigarreau, Imperial Guigne Ambree, White Orleans.*

Very large, obtuse, heart-shaped; yellowish-amber color, but fine red next the sun; flesh firm, white, sweet, and well flavored; a beautiful and excellent fruit: ripe in June and July. This variety commands the highest price in market.

Bigarreau White, *White Oxheart*, and *Harrison's Heart*, of Downing. *White Bigarreau Tradescant*, and *Bigarreau blanc le gros*, of Prince. Fruit large; obtuse heart-shaped; of pale yellow and white color, mottled with red; flesh white, and well flavored; ripe in June and July.

Black Eagle. A beautiful variety, raised by Miss Knight, of Downton Castle, 1806; fruit of globular form, and middle size; skin dark purple, or nearly black; flesh very tender, rich, and of excellent flavor. The tree grows strong, very upright, and ripens its fruit early.

Black Heart, *Guignier à Fruit noir*. Fruit rather large, heart-shaped, dark purple, approaching to black at maturity; flesh dark red, tender, of excellent flavor; ripe early in July. Tree a good bearer.

Black Tartarian, *Black Circassian*, *Fraser's Black Tartarian*, *Black Russian*, *Ronald's Large Black Heart*, *Fraser's Black Heart*. A very large heart-shaped fruit, of a most superior quality; color dark-shining purple or black; flesh firm, dark red or purple; sweet, and of most excellent flavor: in June and July. The tree grows rapidly and is very productive.

Davenport's Early Black, *New May Duke*. This variety is considered as one of the finest and most productive of early cherries known. The fruit is of medium size, heart-shaped, of a dark glossy black color; flesh firm, and of a pleasant sub-acid flavor. It ripens a week or ten days earlier than the May Duke.

Elkhorn, *Black Oxheart*, *Tradescant's Black*, *Bigarreau gros noir*, *Large Black Bigarreau*. A large black, heart-shaped cherry, well suited to bear carriage to market from the firmness of its flesh. This variety ripens the second and third week in July, when other kinds are scarce.—(*Prince.*)

Elton. This excellent variety was raised by Mr. Knight in 1806; the tree is very vigorous and productive; the fruit is

pretty large, heart-shaped; pale glossy yellow in the shade, but marbled with bright red next the sun; flesh firm, sweet, and rich; ripens soon after the May Duke.

Florence. A very fine heart-shaped cherry; of a yellow amber color, marbled with bright red in the shade, bright red next the sun; flesh tolerably firm, juicy, rich, and sweet: ripe end of June and in July.

Gridley, *Apple Cherry*. A native fruit of medium size, which originated on the farm of Mr. Gridley, of Roxbury, near Boston; the color is black, the flesh firm, and of a fine flavor: in July. The tree grows vigorous, and is very productive.

Knight's Early Black. The blossoms of this variety appear very early; its fruit resembles the Waterloo; of a rich dark hue; its flesh is firm, juicy, and abundantly sweet: by the middle of June.

Mazzard, Black. This cherry grows wild, and is cultivated also in abundance in various parts of England. It is the principal fruit employed for the making of cherry brandy, and the stocks of the species are best adapted for nursery-men to bud and graft the better kinds on.

Napoleon Bigarreau, *Bigarreau Napoleon*, *Lauermann*, *Gros Bigarreau de Lauermann*. The tree of this variety is remarkable for the vigor and beauty of its growth; it produces a fine large white fruit with red spots; the flesh is remarkably white, solid, and of a sweet, agreeable flavor: early in July.

White Bigarreau. Mr. Manning represents this as one of the largest and finest cherries known. The form is obtuse, heart-shaped; skin pale yellow, with a bright red cheek; flesh very firm, juicy, sweet, and fine flavored: ripe in July. Mr. Manning observes that this variety has the reputation of being a shy bearer, but that in his orchard it yields an abundance of fruit; and that, owing to the hardness of its flesh, it is not liable to injury from birds. On this account, he says, it is highly deserving of cultivation.

White Heart, *Remington White Heart*, *Late White Heart*. A moderate-sized cherry, of pleasant flavor; chiefly valuable

for its very late maturity, being towards the end of August It is said to have originated in Rhode Island.

White Tartarian, *White Transparent Crimea, Fraser's White, Guigne de Russie blanc.* A beautiful cherry, pale yellow, approaching to amber next the sun; a much-admired fruit, of excellent flavor; a good bearer, ripening early in July.

Allen's Sweet Montmorency, *Late Montmorency.* A seedling raised by J. F. Allen, Esq., of Salem, Massachusetts. Fruit of medium size, nearly round; skin pale amber, mottled with red; flesh yellowish, tender, sweet, and excellent. It is a good bearer, and ripens its fruit late in July.

Baumann's May, *Wilder's Bigarreau de Mai.* A very early variety imported by Col. Wilder; fruit rather small, oval heart-shaped; skin deep rich red; flesh, when fully ripe, sweet and good; ripe by the end of May.

Bigarreau China, *Chinese Heart.* A fine variety raised by the late Mr. W. Prince, of Flushing, L. I. Fruit of medium size, oval heart-shaped, with a distinct suture line; skin, when fully ripe, glossy red, mottled with numerous light spots; flesh firm, and of a rich peculiar flavor: late in July.

Bigarreau Holland, *Spotted Bigarreau, Armstrong's Bigarreau.* Fruit very large, of a regular heart-shape; skin pale yellow, mottled and spotted with bright red; flesh juicy, sweet, and excellent: towards the end of June.

Bigarreau Tardif de Hildesheim, *Hildesheim Bigarreau.* Fruit of medium size, heart-shaped; skin yellow, mottled, and marbled with red; flesh pale yellow, firm, with a sweet and agreeable flavor. This variety ripens here in August, and is considered by Thompson the latest sweet cherry known.

Downing's Red Cheek. An excellent seedling cherry raised at the nursery of A. J. Downing, Newburgh. Fruit rather large, regularly obtuse heart-shaped; skin thin, white, with a rich dark crimson cheek; flesh yellowish, of a sweet and luscious flavor: about the middle of June.

Downton. A beautiful variety raised by T. A. Knight, of Downton Castle, England. Fruit very large, blunt heart-

shaped; skin cream-color, stained and marbled with red dots a delicious cherry early in July.

Early Purple Guigne, *Early Purple Griotte.* An early variety ripening towards the end of May, newly introduced from England. Fruit of medium size; skin dark red and purple; flesh purple, tender, juicy, and delicious.

Manning's Mottled, *Mottled Bigarreau.* A beautiful heart cherry, raised by Mr. Manning from a seed of the Bigarreau; fruit above medium size, roundish heart-shaped; skin glossy amber color, mottled with red; flesh, when fully ripe, yellow and tender, with a delicious juice: ripens late in June.

Transparent Guigne, *Transparent Gean, Transparent.* Fruit small, borne in pairs, and heart-shaped; skin glossy, thin, and nearly transparent; color yellowish white, delicately mottled with fine red; flesh tender, melting, and sweet: ripe early in July.

CHESTNUT.

Chataigner. *Castanea.*

The Chestnut is well known as a large tree, spreading its branches finely where it has room; but planted closely, will shoot up straight to a great height. It is supposed to have been originally from Sardis. It is so common as to be considered a native of France and Italy, and some consider it as naturalized in England. It is also indigenous in America. The London catalogues contain the names of thirty-two sorts under cultivation. The Chestnut is, like the Walnut, both a timber and fruit-tree. Some of the oldest trees in the world are of this species. The American Chestnut differs so little from the European, that no specific distinction can be drawn. It is one of the largest trees of the forest, the wood being extremely durable, and in high esteem for posts and rails to

construct fences; and the nuts are very delicious. The *Castanea pumila*, or Chinquapin nut, is a small tree, or rather shrub, growing to the height of thirty feet in the Southern States, but seldom exceeding ten in cold latitudes. The fruit is very sweet and agreeable to eat.

There is a variety with striped leaves, which is very ornamental. The most esteemed of the French kinds are called Marron. Some excellent fruit-bearing varieties are cultivated in England, France, Italy, and Spain, as also in other parts of Europe.

MANNER OF PROPAGATING.

Chestnuts are increased by grafting or budding in the usual methods; but the plants for coppice wood, or timber, are best raised from nuts. Some varieties ripen their fruit a few days earlier than others; but none of these have been fixed on or perpetuated by nursery-men so as to render them available to purchasers. The fruit is a desirable nut for autumn or winter, and is eaten roasted with salt, and sometimes raw; and in some countries it is not only boiled and roasted, but ground into meal; and puddings, cakes, and bread are made from it.

Chestnut-trees will not succeed on wet, nor on heavy soils. The largest and finest trees are found on high ridges of clayey loam, gravelly loam, or sandy loam. By pruning the trees and keeping the soil cultivated around them, as far, or farther than the lateral branches extend, the fruit may be greatly increased both in quantity and quality.

In order to raise trees from the nuts, select the largest and fairest specimens as soon as they fall from the tree, and keep them where they will not become very dry until late autumn, when the nuts must be planted in well prepared soil in drills, and covered two inches deep with mould or fine street dirt. If the nuts are allowed to dry, their vitality will be destroyed. It is essential to their vegetation that the nuts freeze and thaw during winter. The fruit is better to remain on the trees till the frost has opened the burrs.

ALMOND.

AMANDIER. *Amygdalus.*

Although Almonds are not much cultivated in this part of our country, they are entitled to notice. The species are fruit-trees, or ornamental trees and shrubs, both much esteemed for the gay color and early appearance of their flowers. These vary in their color from the fine blush of the apple-blossom to a snowy whiteness. The chief obvious distinction is in the fruit, which is flatter, with a coriaceous covering, instead of the rich pulp of the Peach and Nectarine, opening spontaneously when the kernel is ripe. It is a native of Barbary, China, and most eastern countries. There are twelve sorts described in the catalogue of the Linnæan Botanic Garden at Flushing; some of which are represented as new varieties from France and Italy, where they are cultivated extensively for their fruit.

In France, they have above a dozen species or varieties, besides a hybrid called the Almond Peach. The common and bitter Almond are only to be distinguished by the taste of the kernels of their fruit, which is the only part used. The tender-shelled is in the greatest esteem, and next, the Sweet and Jordan. The bitter cuticle or skin of Almonds is taken off by immersion in boiling water. The sweet Almond and other varieties are used as a dessert in a green or imperfectly ripe, and also in a ripe or dried state. They are much used in cookery, confectionery, perfumery, and medicine.

The Almond is propagated by seed for varieties or for stocks; and by budding on its own or on Plum-stocks for continuing varieties. The Almond-tree bears chiefly on the young wood of the previous year, and in part upon small spurs or minor branches. It is therefore pruned like the Apricot and Peach, and its culture in other respects is the same.

CRANBERRY.

CANNEBERGE. *Oxycoccus.*

This genus of plants is well distinguished from the *Vaccinium*, or Whortleberry, by the narrow revolute segments of corolla; and are pretty little trailing evergreen plants, to which a peat soil or rather moist situations are absolutely necessary. They are very little changed by culture.

The *Oxycoccus macrocarpus* is a red acid fruit, highly valued as a sweetmeat, or for tarts. It is well known that this excellent fruit grows in many parts of our country spontaneously, and that the mere gathering of it is all that bountiful nature requires at our hands; but it is well worth cultivating where there are none. This fruit will keep a whole year, if properly preserved in closely covered stone jars, and is considered by many as superior to the best currant jelly, and may be kept for many months in a raw state without injury.

The *Oxycoccus palustris* bears edible berries, which are gathered wild both in England and Scotland, and made into tarts. Lightfoot says, that twenty or thirty pounds' worth are sold each market-day, for five or six weeks together, in the town of Langtown, on the borders of Cumberland. Nicol says the American species is more easily cultivated than the English, but is inferior to it in flavor. There is reason to believe that the quality of fruit of each of these species is subject to variations, which have not yet been practically distinguished. Their cultivation is now so well understood that both may be considered with propriety as inmates of the fruit-garden. Some raise them from seed sown early in the spring; but it is best to set out plants, and lay the runners as they progress in growth.

It is customary in England to prepare beds on the edges of ponds, which are banked up so as to admit of the wet getting underneath them; bog or peat-earth is considered essential for the roots to run in; but it has been discovered that they can be cultivated in damp situations in a garden, with a top-dress-

ing of peat or bog-earth; and if they are once suited as to the soil, the plants will multiply so as to cover the bed in the course of a year or two, by means of their long runners, which take root at different points. From a very small space a very large quantity of Cranberries may be gathered; and they prove a remarkably regular crop, scarcely affected by the state of the weather, and not subject to the attacks of insects. Sir Joseph Banks gives an account of his success in cultivating this fruit. "In one year, from 326 square feet, or a bed about eighteen feet square, three and a half Winchester bushels of berries were produced, which, at five bottles to the gallon, gives one hundred and forty bottles, each sufficient for one Cranberry-pie, from two and a half square feet."

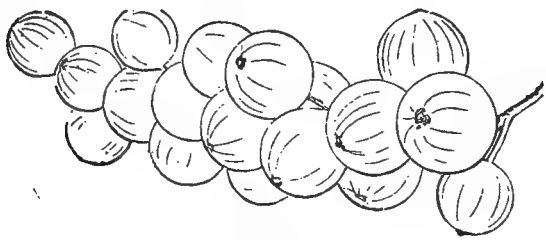
Cranberries thrive best in a wet soil, but will grow on almost any land, by giving it a top-dressing of peat, bog, or swamp-earth. As soon as such ground can be brought into tillable condition, get plants that were produced from layers of the last season, and set them out in rows about two feet apart; they will soon cover the ground by their runners, which, on being laid, will produce an abundance of plants well adapted for additional plantations in succeeding years.

CURRANT.

GROSSEILLER A GRAPPES. *Ribes.*

This is a genus of well-known shrubs, much cultivated for the fruit. It is a native of the northern parts of Europe, and found in hedges and woods in England; and there are some species indigenous in America. The fruit, being of an agreeable sub-acid taste, is generally relished both as a dessert and in pies and tarts. It is also much used in making wine, and is grown to a considerable extent for that purpose. There are ten species

cultivated in the garden of the Horticultural Society of London, comprising twelve varieties of red, ten of white, five kinds of black, together with a champagne, mountain, rock, upright, and Pennsylvanian. Any number of varieties of the red and white



Red Dutch Currants.

may be procured from sowing the seed; but they are generally propagated by cuttings of the last year's wood, which should be of sufficient length to form handsome plants, with a clear stem ten inches high, which may be planted immediately upon losing their leaves in autumn, or very early the ensuing spring.

The Currant will grow in almost every soil, but succeeds best in one loamy and rich. The best flavored fruit is produced from plants in an open situation; but they will grow under the shades of walls or trees, and either as low bushes, or trained as espaliers. They bear chiefly on spurs, and on young wood of from one to three years' growth; and therefore, in pruning, most of the young wood should be cut to within two or three buds of that where it originated. After the plants are furnished with full heads they produce many superfluous and irregular shoots every summer, crowding the general bearers, so as to require regulating and curtailing, both in the young growth of the year and in older wood.

The principal part of the work may be done in winter, or early in spring; but a preparatory part should be performed in summer, to eradicate suckers, and thin the superfluous shoots of the year, where they are so crowded as to exclude the sun

and air from the fruit. In training espaliers, and for standards, two branches are trained in a horizontal direction along the bottom of the trellis, perhaps half a foot from the surface of the earth; and the growth from these, or of all upright shoots,

Cherry Currants.

which will admit of being arranged at the distance of five or six inches from each other, is encouraged. Fan standards are sometimes trained with the branches radiating from the crown of the stem.

The black Currant, or *Ribes nigrum*, is common in moist woods in Russia and Siberia, and in certain localities in America. Its culture is similar to that of the red; but as it is less apt to bear in spurs than on young wood, the shoots should not be so much shortened in this as in the other.

Currant bushes should be planted at different distances, according to the situation and mode of training. When planted in beds, borders, or squares, they should be six feet apart, but if trained as espaliers they may be eight feet apart. Many people dislike the flavor of black Currants. They are therefore not much used in the kitchen as dessert, and seldom in wine-making. They make a jelly or jam, in estimation as a gargle for inflammatory sore throats. In Russia and Siberia wine is made of the berries alone, or fermented with honey, and with or without spirits.

HOW TO START NEW BUSHES FROM CUTTINGS.

Select the sprouts that grew the previous season, and cut off the butt-end, retaining about eight or ten inches of the top-end. Cover the butt-end with grafting-wax, and transplant them with a dibble, at least six inches deep, in soil thoroughly pulverized and enriched. Press the earth gently around the cuttings, and spread straw or some other material around them to keep the ground moist, to promote the growth of roots. All the buds should be pinched off the cuttings below the surface of the ground, if the bush is to be trained to a single stem. If the buds below the surface of the ground be not removed, strong shoots will spring from them, which will overgrow the main stem. If currant bushes be well pruned, the soil around them kept in a good state of fertility, weeds and grass subdued, and the fruit thinned out properly before it has attained much size, currants may be produced twice as large as they usually grow.

SELECT DESCRITIVE LIST OF CURRANTS.

Black English, *Common Black.* This species is most generally cultivated in private gardens for medicinal purposes; the berries are plentiful, of large size, and frequently hang on the bush two months, improving in flavor.

Black Naples. In this variety the fruit is larger, the clusters more numerous, and each cluster produces more berries than the ordinary kinds, on which account it is highly esteemed.

Champagne. The berries of this variety are of a pale red color, which, being transparent, causes it to be generally estimated as a dessert fruit. It is a prolific bearer.

Large Red, *Red Dutch.* This is the most desirable kind of the red-fruited currant cultivated; the bush, when properly trained and pruned, grows strong and upright, and produces an abundance of fine large berries.

White Crystal, *White Grape.* An excellent variety, the berries of which are large, and of a beautiful clear transparent brilliancy; hence its name.

White Dutch. This variety is held in great esteem for different purposes; the clusters and berries are large, of a yellowish-white color, and delicious flavor. The bushes are often so productive that the branches of the bearing-wood trail beneath the weight of the fruit.

Missouri Currant. This species is quite distinct from the ordinary kinds; its berries are purple, and although of rather agreeable flavor, they are not to be compared with those under general cultivation.

To these may be added *Knight's Sweet Red, Wilmot's Large Red, Wentworth Red, Victoria,* and *Green Fruited,* and some other kinds.

Some nursery-men's catalogues contain many other names, a great proportion of which are, probably, a repetition of the same fruit. Where the Currant is cultivated for the purpose of making wine, the White and Red Dutch are to be preferred to all others. For the dessert, the White Crystal and Champagne are great favorites, on account of their transparent clearness. Those bushes growing in the shade produce fruit much inferior to what it would be, were the bushes exposed to the sunshine and air during most of the day.

The Currant Worm which destroys the bushes, may be exterminated in the same manner as recommended for the extirpation of the Gooseberry Worm, page 93, which see.

FIG.

Figuier. *Ficus carica.*

The Fig-tree may be propagated from seed, cuttings, layers, suckers, roots, and by grafting; the most generally approved

method is by layers or cuttings, which come into bearing the second, and sometimes the first year. No tree is more robust or more prolific; even plants in pots or tubs kept in a temperature adapted for the Orange-tree, will fruit freely, and ripen two crops a year, and by being taken care of through the winter, will go on growing and ripening fruit without intermission. Mr. Knight has obtained from his hot-house in England, eight successive crops in a year, by bending the limbs in a position below the horizontal. The trees will produce tolerable crops in the second year if rung or decorticated. Its maturity is also hastened by pricking the fruit with a straw or quill dipped in olive oil, or even by slightly touching the fruit with oil, at the finger's end. In Fig countries the fruit is preserved by dipping it in scalding lye, made of the ashes of the Fig-tree and then dried in the sun.

RINGING OR DECORTICATION.

Girdling, decortication, ringing, or circumcision, as it is sometimes variously called, consists in making two circular incisions quite around the limb, through the bark, at the distance of about a quarter of an inch asunder, more or less, according to the size and thickness of the tree; then by making a perpendicular slit, the ring of the bark is wholly removed. Ringing or decortication is applicable to every kind of fruit-tree, and to the vine. Its operation is twofold. First, in the early production and abundance of blossom-buds which it induces; and second, in increasing the size of the fruit and hastening its maturity, according to the season in which the operation is performed.

When Figs are cultivated in a garden, a good loamy soil should be provided; and they may be trained to close fences or trellises, in sheltered situations. At the approach of winter they must be protected; those trained to close fences may be secured through the winter by a covering of matting; and such as may be in open situations should be liberated from the trellis, and laid down close to the ground, and covered

hree or four inches with earth; or trenches may be formed of that depth sufficient to contain the branches, which should be fastened down with hooked pegs, without cramping them: such of the strong central branches as will not bend may be enveloped in litter. They should be pruned before they are laid down in November, and on being raised again in April, they may be trained as before. Figs may be cultivated in private gardens as easily as the vine.

Those persons desirous of learning the names of different kinds of figs, may consult the descriptive lists of nursery-men. The fig-trees at Arundel are planted six or eight feet apart, and from a single stem allowed to continue branching conical heads, pruning chiefly irregular and redundant growths, and cutting out decayed or injured wood.

FILBERT AND HAZEL-NUT.

Noisetier Avelinier. *Corylus.*

The Filbert, in many varieties, and also the common Hazel-nut, grow spontaneously in the woods of Britain, and some few varieties are indigenous in this country. The kinds of Filberts generally cultivated are the white, red, cob, clustered, and frizzled. There are many varieties of each. As this shrub is so easily cultivated, it is a matter of astonishment that the nuts from this genus of plants are so scarce in our markets. In different parts of England there are Filbert orchards. In the Filbert grounds about Maidstone, in Kent, it is a prevailing practice to cultivate Hops, standard Apples, and Cherries, among the Filberts. When these come into a bearing state, the Hops are taken up and transplanted elsewhere, and the fruit-trees only suffered to remain. The spare ground is then planted with Gooseberries, Currants, etc. *The Red Filbert* is allowed to have a finer flavor than the White. *The Cob-nut*

is large, with a thick shell; but the kernel is sweet and of considerable size. *The Barcelona* is a good large nut, with a thin shell. *The Cosford* is very sweet, kernels well, and the tree is a great bearer. *The Bond Nut* and the *Lambert Nut* are of large size, roundish shape, and very prolific bearers. *The Frizzled Filbert* is highly esteemed. It is beautiful when in the husk, and its flavor is very similar to that of the *White Filbert;* the shell of which is also thin, and its kernel sweet and fine.

All the different kinds may be grown as dwarf standards; or they will bear well if planted in clumps. But as they produce an abundance of suckers, these should be parted off frequently, and planted in a nursery-bed for stocks, as the bearing plants will cease to produce fruit in any quantity, if the suckers are allowed to form a thick bush. They may be propagated by seed, by suckers, by layers, or by grafting in the spring upon seedling or sucker-stocks.

The Filbert bears principally upon the sides of the upper young branches, and upon small shoots which proceed from the bases of side-branches cut off the preceding year. The leading shoot is every year to be shortened, and every shoot that is left to produce fruit should be clipped; which prevents the tree from being exhausted in making wood at the end of the branch. Such branches as may have borne fruit must be cut out every year, in order to promote the growth of a supply of young fruit-bearing branches.

Filberts and hazel nuts cannot be profitably grown in our cold climate, except on a small scale within a good forcing-house. For this reason, it will be folly for any one to attempt to raise an abundant crop of these nuts in a climate like New England and the Northern States. Fruit and flowers of any kind that are not adapted to the climate will not grow profitably, even when the cultivation is of a superior character. What is true of filberts and hazel nuts, is equally true of many other productions of the farm and garden.

GOOSEBERRY.

GROSEILLER. *Ribes grossularia, uva, crispa, etc.*

The *Gooseberry* green, the first fruit of the year,
In pudding or pie, affords exquisite cheer;
But e'en should the season their pleasure forefend,
In such a dilemma, green *Rhubarb's* a friend.

The Gooseberry is a native of several parts of Europe, and is indigenous in America, as far north as 68°. It is cultivated to greater perfection in England than in any other part of the world. In Spain and Italy this fruit is scarcely known. In France it is neglected. In Lancashire, England, and some

A Cluster of Houghton's Seedling.

parts of the adjoining counties, almost every cottager cultivates the Gooseberry, with a view to prizes given at what are called Gooseberry Prize-Meetings.

In Lindley's Guide to the Orchard and Fruit Garden, seven hundred and twenty-two varieties are described, from which the following are selected, as in most repute for size, flavor, and other good qualities:

Red Varieties.

British Crown, *Boardman's.* This variety is noted as being a fine-flavored fruit, especially for tarts; the largest berry weighing 18 pennyweights and 10 grains.

Champagne. The fruit of this variety is held in great esteem for its delicious flavor; the berry is of a medium size, somewhat oblong and hairy.

Capper's Top Sawyer. This is a late fruit, of oblong shape, and hairy near the base; the heaviest weighiug 22 dwts. 17 grains.

Crown Bob, *Melling's.* This variety won eighty-five prizes in two seasons; the largest berry weighing 21 dwts. and 12 grains. It is a late fruit, of oblong shape, bright red color, and hairy.

Early Red, *Wilmot's.* This variety is considered as first-rate of its color. It has a thin skin; is of large size, very early, of excellent flavor, and incredibly productive.

Marquis of Stafford, *Knight's.* This much-esteemed late variety is hairy, of medium size, bright red color, and delicious flavor.

Old Rough Red. This is a favorite fruit for family use; the berries are of medium size, of dark red color; excellent for preserving as gooseberry jam, and for bottling in an unripe state.

Over-all, *Bratherton's.* The average weight of the berries is 20 dwts. It is a highly esteemed fruit.

Triumphant, *Denny's.* This is a medium-sized early berry, weighing about 16 dwts. It is considered equal in quality to any gooseberry of its color.

Warrington. This is a favorite fruit for private gardens; the berries are of medium size, very rich flavored, and ripen gradually without deteriorating.

Yellow Gooseberries.

We may mention as good berries, and worthy of cultivation,

the Bunker Hill, Britannia Cottage Girl, Golden Gourd, Golden Yellow, Gunner, Invincible, Regulator, Rockwood, Sovereign, and Viper.

GREEN GOOSEBERRIES.

Of this variety we may enumerate the Angler, Early Green, Favorite, Greenwood, Green Gage, Green Myrtle, Heart of Oak, Independent, Jolly Tar, Laurel, Ocean, and Wistaston.

WHITE GOOSEBERRIES.

Bonny Lass, Governess, Lady of the Manor, Lioness, Nailer, Queen of Sheba, Smiling Girl, White Bear, and White Eagle. There are many other kinds enumerated in the large catalogues of nursery-men.

HOW TO PROPAGATE GOOSEBERRIES.

The Gooseberry may be propagated by all the modes applicable to trees or shrubs; but that by cuttings is usually adopted for continuing varieties; and that by seed for procuring them. The cuttings should be taken from promising shoots just before the leaves begin to fall in the autumn; the greatest part of the buds should be taken off, leaving only two or three buds on the top. Cut them at such a length as the strength and ripeness of the wood will bear; and plant them in good pulverized soil. On the approach of winter, lay some moss or litter around them; and, by being well cultivated, they will be fit to transplant when they are a year old. Gooseberries are propagated by cuttings in the same manner as recommended for the propagation of Currants on a previous page.

PRUNING AND TRAINING.

The Gooseberry produces its fruit not only on the shoots of the preceding year, and on shoots two or three years old, but also on spurs or snags arising from the older branches along the sides; but the former afford the largest fruit. The shoots

retained for bearers should therefore be left at full length, or nearly so. The first pruning should be done before the buds swell, so as not to endanger their being rubbed off in the operation. Cut out all the superfluous cross-shoots, and prune long ramblers and low stragglers to some well placed lateral or eye; retain a sufficiency of the young well situated laterals and terminals to form successional bearers. In cutting out superfluous and decayed wood, be careful to retain a leading shoot at the end of a principal branch. The superfluous young laterals on the good main branches, instead of being taken off clean, may be cut into little stubs of one or two eyes, which will send out fruit-buds and spurs.

Some persons not pruning the Gooseberry bush on right principles, cause it to shoot crowdedly full of young wood in summer, the fruit from which is always small, and does not ripen freely with full flavor; on which account it is an important point in pruning, to keep the middle of the head open and clear, and to let the occasional shortening of the shoots be sparing and moderate. Between the bearing branches keep a regulated distance of at least six inches at the extremities, which will render them fertile bearers of good fruit.

The prize cultivators of this fruit in Lancashire are particular in preparing a very rich soil, and they water occasionally with the liquor which drains from dunghills; and there are some who, not content with watering at the root and over the top, place a small saucer of water under each Gooseberry, only six or eight of which are left on a bush. This is technically called suckling. There are others who ring some of the branches; this is done by cutting out small circles of bark around them; and by pinching off most of the young wood, the strength is thrown to the fruit.

When bushes are procured from the public nurseries, let the general supply be in such kinds as will ripen in succession. They may be planted in the kitchen-garden, in single rows, along the side of the walks or paths, or in compartments by themselves, in rows from six to eight feet apart from row to

row, and five or six feet apart in the rows; or in small gardens, they may be trained to a single tall stem, and tied to a stake. This, though six or eight feet high, occasions scarcely any shade, and it does not occupy much room, nor exclude air, while, at the same time, the stem becomes closely hung with berries, and makes a pleasant appearance in that state. Persons of taste may train them on arched trellises, and if they are judiciously managed, the ground around them may be more easily cultivated; the fruit may be kept from being splashed with rain, and may be easily gathered when wanted, or preserved by shading with mats. Those who may have a choice of soil and site, should fix on a good, rich, loamy earth, and plant some of the choice kinds in a northern and eastern aspect, near the fence, to come late in succession.

The Gooseberry may be forced in pots or boxes, placed in pits, or in the peach-house or vinery. Unripe Gooseberries may be preserved in bottles against winter; some, after filling the bottles in a dry state, stand them in a slow oven, or in hot water, so as to heat them gradually through without cracking them; they will keep a whole year if closely corked and sealed as soon as cold.

GOOSEBERRY SAW-FLY.

This insect has taken almost entire possession of our Gooseberry and Currant bushes; and of its close resemblance to the *Gooseberry Saw-Fly* of Europe, there can be no doubt. It first attacks the gooseberry; but when these leaves become scarce those of the currant are greedily devoured.

When the flies emerge from their winter quarters in the ground the latter part of April or early in May, the female begins to deposit her eggs on the under side of the newly expanded leaves, choosing the sides of the veins or nervures as a fitting place. With the saw-like appendage for which the family is remarkable, the female commences cutting into the leaves, and in the opening deposits her egg. The larva is hatched in about a week, and commences feeding on the leaf,

increasing in size and frequently changing its skin, till it is about three-quarters of an inch in length. It is now of a dull pale-green color, the first thoracic segment being deep yellow the penultimate being also of the same color. The feet, tail, and head are black, and each segment is dotted black also, some having as many as twenty-four spots arranged in lines down the back, while those on the sides are more irregular, with one large one at the base of each foot. They have six pectoral, sharp, horny feet; the fourth segment appears destitute of feet, but the six following are each furnished with a pair of legs, which assist them in walking. They have also a pair of feet at the extremity of the last segment.

In the fly state it assumes an ochreous color. The body is orange, sometimes bright. The wings are iridescent; and, when expanded, are about two-thirds of an inch in length. The antennæ are almost as long as the body, bristly, brownish above, and nine-jointed; the crown of the head and eyes are black, as are also three large confluent spots in the centre of the trunk, and also a large patch on the breast or sternum.

The broods of caterpillars appear in succession occasionally from March till October, but in greatest numbers in June. Sometimes they severely attack the gooseberry in July and August, and after denuding the bushes of their foliage, they descend into the earth, spinning themselves a yellowish cocoon of an elliptical form, and remain in their pupa state till the following spring. Those of the early summer brood descend in like manner, but in the course of three weeks or less, undergo their transformation, and again appear as perfect flies. See Dr. A. Fitch's Report on Insects for a more complete description of this worm.

INFALLIBLE REMEDY FOR THE GOOSEBERRY AND CURRANT WORM.

The only effectual remedy for the extermination of this worm that is so destructive to Currants and Gooseberries is, powdered White Hellebore (Veratrum Album), sprinkled with

a dredging-box over the leaves and branches. The bushes should be turned up, and the powder scattered on the leaves and small twigs in the middle of the bushes. A very light dusting will be sufficient. The worms never eat any more after the powder falls on the surface, even if they have not gnawed holes through the leaves. White Hellebore can be obtained at the drug stores. A few cents will purchase enough to destroy all the worms on a long row of bushes. Great caution must be exercised in using the powder, as it will cause violent sneezing if a very small quantity be snuffed up. This powder will not injure the leaves nor the fruit in the least, notwithstanding it is exceedingly poisonous to the worms.

To protect Gooseberries and other fruits from mildews sprinkle the leaves with soapsuds; and while they are wet, sow sulphur lightly over them. This may be done two or three times a week if necessary, as it is better to use a little of the ingredients frequently than too much at once. A solution made of saltpetre and stone lime is also a good remedy; but it must be used with caution.

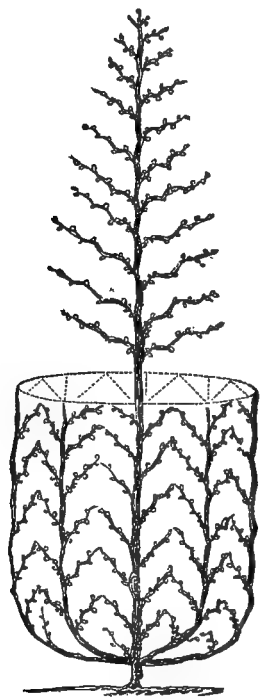
GRAPE.

VIGNE. *Vitis vinifera, vulpina.*

Oh, Bacchus! thy *Grapes* now in bunches hang down;
Some *press* them too freely their "sorrows to drown;"
Let "Temperance in all things" be ever our guide—
No evil can flow from the generous tide!

THE Grape-Vine is described by Loudon as a trailing, deciduous, hardy shrub, with a twisted irregular stem, and long, flexible branches, decumbent, like those of the bramble; or supporting themselves, when near other trees, by means of tendrils, like the pea. The leaves are large, lobed, entire, or serrated and downy, or smooth, green in summer; but when mature, those of varieties in which the predominating color is

red, constantly change to, or are tinged with some shade of that color; and those of white, green, or yellow Grapes as constantly change to yellow, and are never in the least tinged either with purple, red, or scarlet. The breadth of the leaves varies from five to seven or ten inches, and the length of the foot-stalks from four to eight inches. The flowers are produced



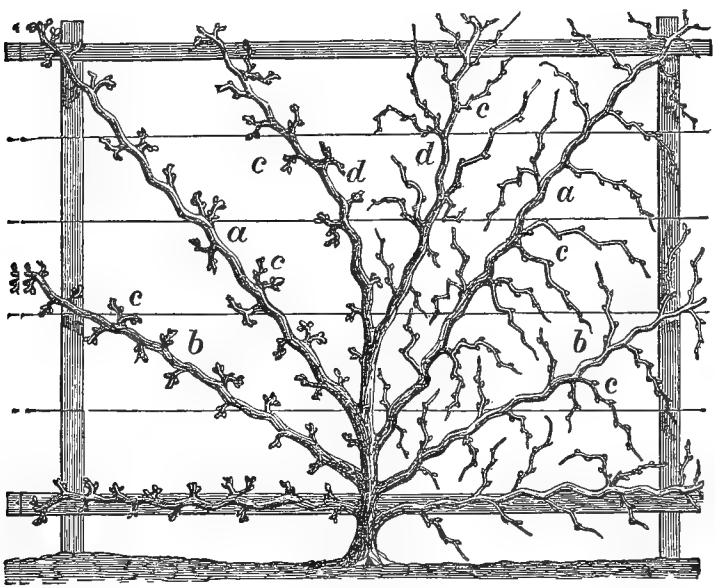
Combined Urn and Fountain.

on the shoots of the same year, which shoots generally proceed from those of the year preceding. They are in the form of a raceme, of a greenish-white color and fragrant odor, appearing in the open air in June; and the fruit, which is of the berry kind, attains such maturity as the season and situation admit,

by the middle or end of September. The berry, or Grape, is generally globular, but often ovate, oval, oblong, or finger-shaped; the color green, red, yellow, amber, and black, or a variegation of two or more of these colors. The skin is smooth, the pulp and juice of a dulcet, poignant, elevated, generous flavor.

LIST—SWEET-WATER MUSCADINE, RED HAMBURGH.

The weight of a berry depends not only on its size, but on



Field-Training on Trellises.

the thickness of its skin and texture of the flesh, the lightest being the thin-skinned and juicy sorts, as the Sweet-Water or Muscadine; and what are considered as large-berried of these varieties, will weigh from five to seven pennyweights, and measure from one to two-thirds of an inch in girth. A good-sized

bunch of the same sorts may weigh from two to six pounds; but bunches have been grown of the Syrian Grape, in Syria, weighing forty pounds, and in England weighing from ten to nineteen pounds. A single vine, in a large pot, or grown as a dwarf standard, in the manner practised in the vineyards in the North of France, ordinarily produces from three to nine bunches; but by superior management in gardens in England, the number of bunches is prodigiously increased; and one plant, that of the red Hamburgh sort, in the vinery of the royal gardens at Hampton Court, has produced two thousand two hundred bunches, averaging one pound each, or in all nearly a ton. That at Valentine, in Essex, has produced two thousand bunches of nearly the same average weight.

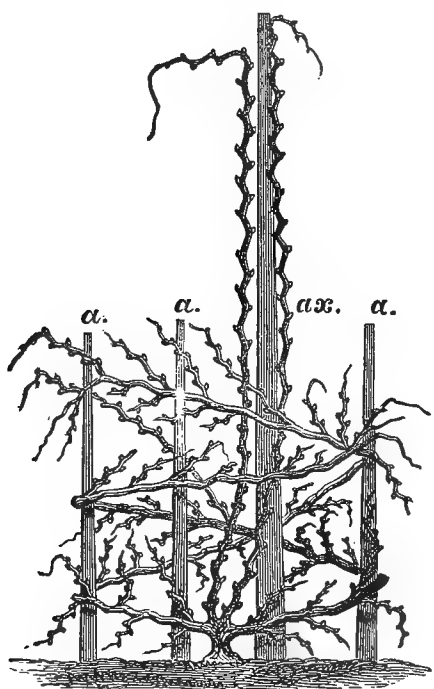
THE AGE OF GRAPE-VINES.

The age to which the vine will attain in warm climates is so great as not to be known. It is supposed to be equal or even to surpass that of the oak. Pliny speaks of a vine which had existed six hundred years; and Bose says there are vines in Burgundy upwards of four hundred years of age. In Italy there are vineyards which have been in a flourishing state for upwards of three centuries; and Miller tells us that a vineyard a hundred years old is reckoned young. The extent of the branches of the vine, in certain situations and circumstances, is commensurate with its produce and soil. In the hedges of Italy and woods of America they are found overtopping the highest elm and poplar trees; and in England, one plant trained against a row of houses in Northallerton, covered a space, in 1585, of one hundred and thirty-seven square yards. It was then above one hundred years old. That at Hampton Court, nearly of the same age, occupies above one hundred and sixty square yards; and that at Valentine, in Essex, above one hundred and forty-seven square yards. The size to which the trunk, or stem, sometimes attains in warm climates, is so great as to have afforded planks fifteen inches broad, furniture and statues; and the Northallerton vine, above mentioned, in

1785 measured four feet in circumference near the ground; and one branch of the Hampton Court vine measures one hundred and fourteen feet in length. Vine timber is of great durability.

OBSERVATIONS ABOUT VARIETIES.

The varieties of the Grape in countries where it is grown for the wine-press, are as numerous as the vineyards; for as these,

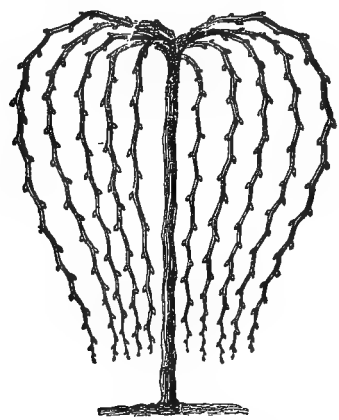


The Spiral System of Training Vines.

for the most part, differ in soil, aspect, elevation, or otherwise, and as the vine is greatly the child of local circumstances, its habits soon become adapted to those in which it is placed.

When it is considered that a vineyard once planted will last two or three centuries, it will readily be conceived that the nature of a variety may be totally changed during only a part of that time. The varieties mostly in esteem for wine-making are small berries, and bunches with an austere taste. The Burgundy, as modified by different soils and situations, may be considered the most general vineyard Grape of France, from Champagne or Marne, to Marseilles or Bordeaux.

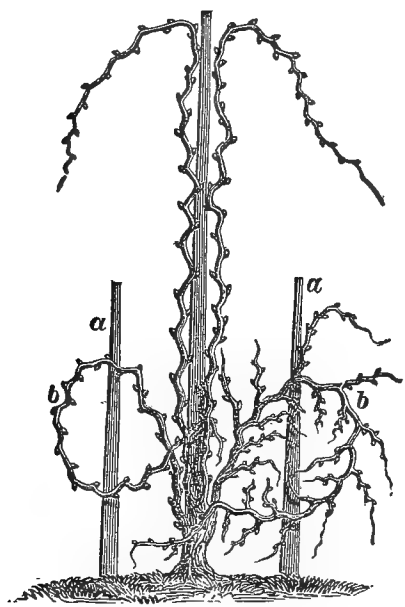
William Robert Prince, in his Treatise on the Vine, pub-



The Weeping Vine.

lished in 1830, enumerated about five hundred and fifty varieties under cultivation in the vineyard attached to the Linnæan Botanic Garden at Flushing, including about ninety American native Grapes; but no sufficient evidence has as yet been exhibited of the foreign varieties flourishing in vineyards here equal to what they do in Europe. Mr. Loubat once attempted to establish a vineyard on Long Island, which he abandoned after six years' arduous exertion. The following have been found to succeed best in private sheltered gardens in the vicinity of New York:—the Sweet-water, the Chasselas, the Muscadine, the White Tokay, the Black Hamburgh, the Blue Cor-

tiga, the Miller Burgundy, the Austrian Muscadel, the Messlier, the Morilon, the Black Prince, Blanc, and some excellent seedling sorts from the imported Lisbon Grapes. To plant a vinery for a full crop of good Grapes of various flavors, take a white and red Muscat, a white and red, or black Muscadel, a white Raisin Grape, a white and red Hamburgh, a Stilwell's,



Renewal System on Stakes.

and red Sweet-water, a white and red Nice, a black Damascus, a red Syracuse, and a black Constantia. The above list contains some of the most esteemed table Grapes of all colors and flavors which will ripen in succession.

To the preceding list we may add the following, which are excellent varieties, and succeed well:—Ionia, Isabella, Concord, Hartford Prolific, Catawba, Delaware, and some others,

BEST VARIETIES FOR WINE.

The best wine in Italy and Spain is also made from Grapes of this description; but in both countries many of the larger-berried sorts are grown on account of their producing more liquor. The sweet wines, as the Malmsey, Madeira, Constantia, Tokay, etc., are made from sweet-berried Grapes, allowed to remain on the plants till dead-ripe. That wine is the strongest, and has most flavor, in which both the skins and stones are bruised and fermented. The same thing is true in making cider; but in both processes bruising the stones or kernels is neglected. The vine was formerly extensively cultivated in Britain for the wine-press, but its culture is now confined to the garden as a dessert fruit; and they have in that country not only the best varieties, but they grow the fruit to a larger size, and of a higher flavor, than is done anywhere else in the world. This is owing to the perfection of their artificial climates, and the great attention paid to soil and subsoil, and other points of culture. The fruit is produced in some vineries during every month in the year; and in the London markets (generally) it is to be had in the highest degree of perfection from March to January.

SOIL AND ITS PREPARATION.

The vine will thrive in any soil that has a dry bottom; and in such as are rich and deep it will grow luxuriantly, and produce abundance of large fruit. In shallow, dry, chalky, or gravelly soils, it will produce less fruit, but of better flavor. Speechly recommends dung reduced to a black mould, the dust and dirt of roads, the offal of animals or butchers' manure, horn shavings, old rags, shavings of leather, bone dust, dung of deer and sheep, human excrement, when duly meliorated by time, a winter's frost, and repeatedly turning over. Abercrombie says that dung out of a cow-house, well rotted, is a fine manure for the vine. He recommends drainings from dunghills to be used over the ground once in ten or fourteen

days from the time the buds rise till the fruit is set; and that fresh horse-dung be spread over the ground in autumn as a manure, and also to protect the roots from the inclemency of the weather. Some, however, disapprove of manuring high, as being calculated to produce wood rather than fruit.

Whatever the soil may be, whether light or heavy, fertile or barren, grape-vines will not flourish well if there be an excess of moisture in it. Underdraining is the first requisite. The next thing is thorough and deep pulverization, either with a subsoil-plough, or by spading two or three spits deep. If the soil be heavy, the more sand, sawdust, or chip manure one can mingle with it the better it will be for the vines. If there be a large proportion of sand, let clay be mingled with it. Clay will render it more productive for Grapes as well as for grass, or a crop of cereal grain.

It has been proved by repeated experiments that the best manure for vines is the branches pruned from the vines themselves, cut into small pieces, and mixed with the soil by means of a garden-hoe. Dr. Liebig, in his "Organic Chemistry," mentions several instance of vines being kept in a thriving condition for from ten to thirty years by the trimmings of vines alone. The discovery was made by poor peasants, who could not afford to buy the ordinary kinds of manure. Vines cut into small pieces will be found an excellent fertilizer on heavy soils, when there is an excess of clay; and it is a good practice to dispose of all prunings in that manner. If the pieces be covered lightly with earth as soon as they are cut, they will decay in a few months, and make excellent mould.

MODES OF PROPAGATING GRAPES.

The general mode of propagating the vine is by cuttings, either a foot or more long, with a portion of two-year-old wood; or short, with only one bud, or one bud and a half joint. Vines may be obtained at the nurseries, propagated either from layers, cuttings, or eyes. Plants raised from cuttings are

generally preferred. Many are of opinion that it is a matter of indifference from which class the choice is made, provided the plants are well rooted and in good health, and the wood ripe. A mode of very general utility is to select the plants in the nursery a year before wanted, and to order them to be potted in very large pots. Varieties without end are raised from seed, and it is thought that by propagating from the seed of successive generations, some sorts may ultimately be procured better adapted for ripening their fruit in the open air than now known. A seedling-vine, carefully treated, will show blossoms in its fourth or fifth year. If it produces a fair specimen of its fruit in the sixth year, then a new generation may be obtained so often. But seed ought never to be sown, except for experiment.

If the ground be mellow, vines may be laid down in a channel and covered with mellow soil and a flat stone or two bricks laid over the place where the roots should start. About every two feet, a bud on the vine should be exposed to the air and light, from which a cane will spring. Vines treated in this manner will form a system of good roots in one season; and when one year old, excellent plants may be taken up and transplanted when they are to produce grapes.

TRAINING GRAPE-VINES.

The illustration on the next page represents the pyramidal mode of training grape-vines, which is practised in large vineyards to a greater extent than any other mode of training. A strong stake, not over seven or eight feet long, is set a few inches from the root of each vine, and in some instances the main vine is wound around the stake and tied with pieces of old rope. The ends of the canes are pinched off as soon as they extend beyond a given limit.

GRAFTING GRAPES.

The following method of grafting the vine is recommended

by Mr. Loudon: Select a scion with one good eye; pare it beneath the eye and on the opposite side in the form of a wedge. Select from the stock to be grafted on, a branch of the preceding year; cut this off a little above the second eye

Pyramidal Training.

from its base; then with a sharp knife split it down the centre nearly to the old wood. Out of each half of the stock, but chiefly out of that half which is opposite the bud, pare off as much as is necessary to make it fit the scion, which must be inserted with its eye opposite to the eye which is left on the top of the stock, and bandaged together carefully with bass matting. Some use grafting-clay, others composition; in either case, a small hole for the eye of the graft, and another hole for the eye left on the stock, must be left open. Tie over a little moss, to be occasionally sprinkled with water. It is essential that the young shoot on the top of the stock should be allowed to grow for ten or fifteen days; then cut it off,

leaving only one eye and one leaf to draw the sap and keep alive the circulation, till both scion and stock are perfectly united.

SELECT DESCRIPTIVE LIST OF NATIVE GRAPES.

ALEXANDER, *Constantia of Vevay, Madeira of York, Pa., Winne, Schuylkill Muscadel.* A good wine fruit, of large size, blackish color, and oblong form; very juicy and pungent; a great and sure bearer.

BLAND, *Bland's Madeira, Bland's Virginia, Mazzei, Powel.* A pale-red grape, of large size and round shape, rather musky, but the juice is sweet and lively.

CAROLINA PERFUMED. A medium-sized fruit, of purple color and rather an unpleasant odor; it is, however, considered as well adapted for wine, being rather pungent, very juicy, and pulpless.

CATAWBA, *Red Muncy, To Kalon.* A fine variety, above medium size, of dark red color, in form round, in flavor delicious for the dessert, and highly productive: it ripens soon after the Isabella.

CUNNINGHAM. A native of Prince Edward's county, Virginia; the berries are round, black, of medium size, and not liable to rot; they are said to resemble, in taste, the Nigrillo of Madeira, and are considered good for wine as well as for the table.

ELSINGBURG. Fruit small, round, of purple color, and delicate musky flavor, without pulp; good for wine, and as a dessert fruit; the vine is very hardy and productive.

HIDE'S ELIZA. Berries large, oval, of violet color, and excellent flavor; alike suited for the dessert and for wine.

ISABELLA. A well known and highly estimated variety. Fruit large, oval, of rich purple color, covered with bloom; skin, under good cultivation, thin; flesh juicy, rich and vinous; an excellent dessert fruit.

LUFBOROUGH. A sweet fox grape of large size and round

shape; skin dark purple; pulp dissolving in a saccharine musky juice; good for wine.

MADDOX. A good wine grape, not liable to rot; it is of medium size; roundish; of a brownish red color, and a brisk vinous flavor.

NORTON'S VIRGINIA SEEDLING, *Longworth's Ohio.* An early fruit of medium size and dark purple color; it ripens in September; makes excellent wine; it is also generally approved as a dessert fruit.

POND'S SEEDLING. A large purple grape of roundish form, thin skin, and of rich pungent flavor; adapted for wine as well as for the table.

SCUPPERNONG. This species is very prolific; the berries are large, roundish, and of a color varying from brick red to black; makes peculiar Muscat wine, and is highly esteemed as a dessert fruit.

WARREN, *Madeira.* A round fruit of medium size and dark purple color; it is considered by some as the most luscious of all native grapes; it makes excellent wine.

WOODSON. A small round black Virginian variety, from Prince Edward's county; it is celebrated as a very proper fruit for the manufacture of *sparkling wine;* it ripens later than most other varieties, but yields abundantly.

SELECT DESCRIPTIVE LIST OF FOREIGN GRAPES.

[Those designated thus * will ripen in the open air. Those marked thus † require but little forcing in favorable seasons.]

* BLACK CLUSTER, *Black Morillon, True Burgundy, Early Black, Auverna.* Bunches rather larger than those of the Miller's Burgundy; berries middle size, somewhat oval; skin of a very black color; juice rich and sweet; the fruit ripens in the open air about the middle of September.

BLACK DAMASCUS, *Worksop Manor Grape.* Bunches middle

size; berries large, globular; skin thin, of a fine black color flesh delicate; juice rich, and of exquisite flavor when properly cultivated under glass.

† Black Frontignan, *Black Frontignac, Violet Frontignac, Muscat Noir, Black Constantia* of some. Berries of medium size, round, and grow close on the bunches; skin black; flesh tender; the juice of a rich vinous musky flavor; it ripens in October, in favorable seasons without fire-heat.

† Black Hamburgh, *Warner's Black Hamburgh, Potier Bleu, Victoria* of some collections. Bunches tolerably large, with two short compact shoulders; berries pretty large, of an oval figure; skin rather thick, of a deep purple color, nearly black; flesh tender; juice sugary and rich: a good and regular bearer. *Wilmot's New Black Hamburgh* is said to bear larger berries.

Black Lombardy, *West's St. Peter's.* Bunches long, with large shoulders; berries large, roundish oval; skin thin, very black at maturity; juice plentiful and high flavored; it requires a high temperature, and is then a great bearer.

Black Muscat of Alexandria, *Red Muscat of Alexandria, Red Frontignac of Jerusalem.* Bunches large and shouldered; berries large, oval; skin thick, of a reddish color, becoming black at maturity; flesh quite firm, with a rich vinous flavor: requires a vinery with fire-heat.

† Black Muscadine, *Black Chasselas, Chasselas Noir.* Bunches of medium size, compact; berries globular; skin black, covered with fine bloom; juice rich if well ripened: it requires a vinery.

† Black Prince. Bunches rather long; berries large, oval; skin dark blackish purple, covered with a thick blue bloom; flesh white, abounding with sweet well flavored juice: this variety will ripen here in the open air, and bear profusely in the vinery with the easiest culture.

Black St. Peter's, *Black Palestine, Saint Peter's.* Bunches pretty large and long; berries rather large, almost globular; skin thin, of a black color; flesh delicate, with a very excellent

and well-flavored juice: this is one of the best sorts for a vinery without fire-heat, and the fruit may be preserved on the vine for early winter use.

Chasselas Mosque, *Musk Chasselas.* Bunches of medium size; berries middle-size, round; skin thin, yellowish-white; flesh tender; juice rich and abundant: the highest-flavored chasselas known, having much of the flavor of the Muscat of Alexandria when properly forced.

Chasselas Rouge, *Red Muscadine, Red Chasselas.* The berries of this variety are something larger than those of the Black Muscadine; they are of a dark red color, when highly ripened in the vinery; juice sweet and luscious.

* Early Black July, *July Grape, Madeleine Noire, Maurillon Hatif.* The earliest of grapes. Bunches small and compact; berries small, quite round, of a black color, covered with a blue bloom; flavor moderately sweet, but not rich or perfumed: it ripens here in the open air early in August.

* Esperione, *Hardy Blue Windsor, Turner's Black Cumberland Lodge.* Bunches handsomely shouldered, and differing little in size from the Black Hamburgh; skin of a deep purple color, covered with a thick blue bloom; flesh adheres to the skin, and is of a pleasant flavor: the vine is very prolific.

Grizzly Frontignan, *Grizzly Frontignac, Muscat Gris.* Bunches middle-size, with small narrow shoulders; berries round, of medium size; skin thick, pale brown, blended with red and yellow; flesh very rich, musky, and high flavored: this is one of the best varieties for the vinery.

Lombardy, *Flame-Colored Tokay, Red Rhenish, Wantage.* Bunches very large, frequently weighing six or seven pounds, being from twelve to eighteen inches in length; berries large, of somewhat oval figure; skin of a pale red or flame color; flesh firm, with pretty well flavored juice: this variety requires fire-heat to bring it to perfection.

* Miller's Burgundy, *Miller Grape, Le Mennier, Morillon Taconne.* Bunches short, thick, and compact; berries small, roundish, very closely set together; skin thin, with fine blue

bloom; flesh tender, abounding with sweet, high-flavored juice; each berry contains two small seeds.

* Pitmaston's White Cluster. A pretty hardy English variety. Bunches of medium size, compact and shouldered; berries middle-size, round; skin thin, light amber color, occasionally shaded with russet when fully ripe; flesh tender, juicy, sweet, and excellent.

† Red Hamburgh, *Warner's Red Hamburgh, Brown Hamburgh, Gibraltar.* The berries of this are of a dark red or purple color, with a thin skin, and juicy, delicate flesh. The size and figure of both the bunch and the berry are very much like the Black Hamburgh, except the latter being less oval, and growing more loosely on the bunches. When the berries are imperfectly ripened, they are of a pale brown color, hence it is called Brown Hamburgh.

* Royal Muscadine, *Amber Muscadine, Early White Teneriffe, Golden Chasselas, White Chasselas.* Bunches large and shouldered; berries round, larger than those of the Sweetwater; skin thin, at first greenish-white, but turning to an amber color when fully ripe; flesh tender and of a rich flavor.

Syrian. Bunches enormously large, with broad shoulders; berries large, oval; skin thick, white at first, but amber color when fully ripe; flesh firm, juicy, and sweet. A bunch of this variety was gathered in Mr. Speechly's vinery at Welbeck, England, four feet and a half in circumference, weighing nineteen pounds and a half. The Syrian grape is supposed to be the sort mentioned in Numbers xiii. 23.

Verdelho, *Verdal, Verdilhio, Madeira Wine Grape.* Bunches rather small, loose, inclined to shoulder; berries oval, small, rather unequal in size; skin thin, almost transparent; juice, when fully matured in the vinery, of a rich saccharine flavor.

White Frontignan, *White Frontignac, Muscat blanc, White Constantia.* Bunches rather long, without shoulders; berries middle-size, round, rather closely set; skin thin, of a greenish-

yellow, covered with a thin bloom; flesh tender, very rich, and of a high musky flavor, when cultivated in the vinery.

White Hamburgh, *White Raisin, White Portugal, White Lisbon, Raisin Muscat.* Bunches large, loosely formed; berries large, of an oval figure; skin thick, of a greenish-white color; flesh hard; juice sweet, and slightly acid. Bunches of three pounds weight have been gathered in vineries near Boston.

White Muscat of Alexandria, *Jerusalem Muscat, Passe-longue Musque, Malaga, Tottenham Park Muscat.* The most delicious of all grapes, but requires to be grown under glass in this climate. Bunches large, and well shouldered; berries large, oval; skin thick, of pale-amber color when fully ripe; flesh firm; juice of a sweet, musky, and most delicious flavor.

* White Melier, *Melier blanc, Early White Malvasia, Early Chasselas.* Berries middle-size, somewhat of an oval figure; color yellowish-white; flesh sweet, juicy, and agreeable in flavor: ripens in August.

White Nice. Bunches very large, with loose shoulders; berries roundish, of medium size; skin greenish-white, becoming yellowish when ripe; flesh crisp, and of good flavor. Mr. McIntosh has gathered from his vinery in England bunches weighing eighteen pounds.

* White Sweet-water, *Early White Muscadine, Early Sweetwater.* Bunches middle-size; berries round, growing close; skin whitish, sometimes shaded with a light russet; flesh sweet, watery, saccharine, and luscious: the fruit ripens in the open air towards the end of August.

* White Tokay, *Gray Tokay, Tokai blanc.* Bunches of medium size, compact; berries oval, closely set; skin dull white; flesh very delicate, sweet and perfumed: good for wine and for the dessert. It will ripen in the open air.

SELECT DESCRIPTIVE LIST OF NATIVE GRAPES.

DIANA. A seedling of the Catawba, raised by Mrs. Diana Crehore, of Boston. Fruit resembling the Catawba, but paler in color; bunches loose; berries round, juicy, and fine flavored; it ripens two weeks earlier than the parent.

GILBERT'S WHITE SHONGA. This variety was found by Garret Gilbert, of the city of New York, on the Shonga Mountains in 1825, and planted in his garden. It is a great bearer, of similar habits with the Isabella, differing from that kind only in color, and coming to maturity a little earlier.

LENOIR, *Sumpter, Clarence.* This variety was introduced by Mr. Lenoir, of the Santee river, Carolina. Bunches large, very handsome; berries small, round; skin purple, with a light bloom; flesh tender, sweet, and excellent.

MISSOURI, *Missouri Seedling.* Bunches of medium size; berries small and round; skin black, with a little bloom; flesh tender, sweet, and pleasant.

OHIO, *Segar Box Grape, Longworth's Ohio.* The cuttings from which Mr. Longworth's first stock originated, were left at his residence by an unknown friend, in a cigar-box. Bunches from six to ten inches long; berries round and small; skin thin, purple; flesh tender and melting: a good dessert fruit.

SHURTLEFF'S SEEDLING. Raised by Dr. S. A. Shurtleff, of Pemberton Hill, Boston. Bunches large, often weighing a pound; berries oval, of medium size; skin thick, light purple, with a greyish bloom; flesh firm, and of excellent flavor: the fruit is fit for the table in September.

UCHEE GRAPE. A native grape found on the banks of the Uchee creek, Russell county, Alabama. The bunches are long, very compact, and of a jet black color; the berries yield but little juice, which is extremely rich, and makes delicious wine without sugar.

WHITE SCUPPERNONG. Bunches short and close set; berries large, of a roundish figure; skin white, with some dark specks; juice sweet and rich: it is a great bearer, ripening its fruit early.

☞ The Managers of the American Institute having at their nineteenth Annual Fair, held at Castle Garden, in the City of New York, awarded premiums for Native Wine, I here insert a copy of the Judges' Report.

"*Report on Native Wine tested October 21st*, 1846, *by* C. HENRY HALL, W. NIBLO, *and* ADONIRAM CHANDLER, *Committee of Judges on Wine.*"

"The five kinds of wine described below, were sent by Mr. N. Longworth, of Cincinnati, Ohio, to whom a Silver Cup was awarded.

"No. 1.—A fine light wine, called 'Ladies' Wine,' with sugar added before fermentation; delicious in flavor. and will compete with foreign sweet wine.

"No. 2.—A light dry wine, from the Catawba grape; sound, of peculiar flavor, resembling that of Hock, and of the Bouquet.

"No. 3.—A good dry wine, of pure juice, different vintage from the last described, but good sound wine, although not high flavored.

"No. 4.—A dry wine from the pure juice of the Herbemont Grape. It is sound, of the peculiar flavor of the grape, and will without doubt be admired.

"No. 5.—From the Missouri Grape, five per cent. brandy. The wine is thin in body, and wanting flavor, perhaps arising from our not having had a fair chance of tasting it at perfection, it having been recently shaken up."

A Silver Medal was awarded for each of the bottles described below.

A bottle of wine furnished by Mr. T. L. Prevost, Greenville, Greene county, was tested, which was represented to be four years old. "A sort of Hock, of fine flavor, but in a state of fermentation, the sugar not being dissolved and the spirit formed."

A bottle from Mr. Charles Peabody, made by him from a native grape found on the banks of the Uchee creek, in Russell

county, Alabama, was pronounced by the judges, "a pleasant wine, sweet, like Malmsey, and if no sugar has been added to the juice, as is represented, it is remarkable in its character."

It is recorded in the *Southern Cultivator*, "that some of the most celebrated wine connoisseurs of Columbus describe the wine made from the Uchee Grape as having the body of Port, with a little of the Muscat flavor, and equal to the best imported."

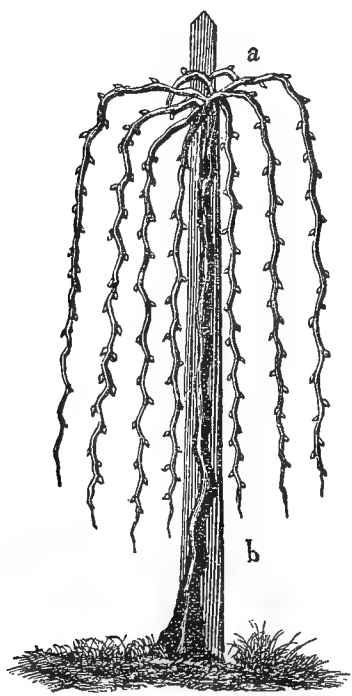
TRAINING AND PRUNING.

There are various methods adopted in training and pruning the vine; and it appears impossible to lay down rules to suit every cultivator. The vine having, like other trees, a tendency to produce its most vigorous shoots at the extremities of the branches, and particularly so at those which are situated highest, it generally happens, when it is trained high, that the greater portion of the fruit is borne near the top; and it has been observed that the fruit produced on the vigorous shoots, which naturally grow at the extremities of the long branches, is generally more abundant, and of finer quality than that produced on the short lateral ones, from which circumstance some fruit-growers contend that high training is best calculated for private gardens.

In some parts of Italy, vines are cultivated together with Mulberry-trees, and are allowed to mingle and hang in festoons. Thus silk and wine are produced on the same spot; and it is considered that when vines are allowed to grow over trees, on the side of a house, or on bowers, or extended on tall poles, without much trimming, they will produce more fruit, and are not so liable to mildew.

Dr. G. W. Chapman, of New York, having paid some attention to the cultivation of native grapes, observes that the vine, in its natural state, seldom or never throws out bearing-shoots until it reaches the top of the tree on which it ascends, when the branches take a horizontal or descending position. From this fact he considers horizontal training preferable to that in

the fan shape. From the experiments he has made, he has found that the shoots coming from those parts of the branches bent downwards, are more productive than from those ascending. He considers deep digging around the vine, even to the destruc-



tion of some of the extending roots, as calculated to promote the growth of more fruit and less wood than if allowed to spread near the surface; and he disapproves stopping the shoots before the fruit until early in July.

LAYING DOWN VINES IN WINTER.

Mr. William Wilson, of Clermont, leaves his foreign vines

their whole length at the time of trimming in October. In November, they are laid on the ground at full length, fastened down with pins, and covered lightly with earth. In this state they lie all the winter. In April, as soon as the weather will permit, they are uncovered, and left lying on the ground ten or twelve days. By the first of May the vines are trained to stakes or poles of the length of ten feet and upwards; and by the middle of June the stakes are entirely covered by new shoots of the vine, and with plenty of fruit, which ripens in September. Mr. W. says, that until he pursued his present course, his fruit was frequently blasted and mildewed; but that he has now vines twenty or thirty feet long, which run up the fruit-trees adjoining; others, being carried up eight or ten feet, are stretched horizontally. It is seldom he gathers fruit within three or four feet of the ground, and he has never any blasted or infected with mildew. He keeps the ground cultivated by frequent hoeing; but he says he has used no manure for ten years or more.

PREPARATION OF SOIL AND PLANTING.

Edward H. Bonsall has a vineyard of American Grapes at Germantown, Pa., in a high state of cultivation. In a letter to the author, from which the following is extracted as appropriate to our subject, he says:

"Mr. Bonsall's vineyard is situated between the Schuylkill and Delaware rivers, four miles from the former, and eight from the latter, at an elevation of three hundred feet above their level; has an aspect facing S.S.E., with a substratum of light isinglass soil, and seems well suited to the purpose. He says: 'From my experience, both on my premises and at other places, it is my opinion that we should reject almost all the foreign varieties, especially where our object in cultivating them is to make wine.' He has upwards of thirty varieties of American vines under cultivation; he recommends preparing the ground by ploughing with two ploughs with strong teams, one immediately behind the other, in the same furrow, each of them set deep; and after

the ploughing is completed, to be harrowed thoroughly. Then in the direction the rows are intended to be planted, parallel furrows are run across the field, at the distance of eight feet from each other; these are afterwards crossed at right angles, five feet asunder. In the opening, at the intersection of these furrows, cuttings from nine to twelve inches long are planted, and arranged with a view to the vines being, when grown, at distances of four by seven feet from each other. He frequently plants two cuttings in a place, some of which are used to fill up with, in case of failures. He says that in 1829 he planted in nursery-beds from two to three thousand cuttings as late as the middle of April to the middle of May, with better success than at any previous time. In this case the slips should be kept in a cool, damp place, where vegetation may be held in check. To insure their freshness, sprinkle them occasionally with water. Previous to planting, cut them a proper length, and place them with their lower ends three or four inches in water, in a tub above the ground, where they may soak three or four days. At this season the temperature will be likely to be such as to spur vegetation at once into healthy and vigorous action. The autumn, or early in the spring, is preferable for rooted plants. In the autumn of the first year, after the frost has killed the unripened part of the young shoots, they should be pruned down to the mature, firm wood, and then with a hoe hilled over with the surrounding soil, which will completely protect them through the winter. If left without protection the first winter, many of them will perish."

TRAINING ON WIRE TRELLISES.

Mr. Bonsall says his mode of training, as far as he is aware of it, is entirely peculiar to himself, which he describes as follows: "I take chestnut posts, the thickness of large fence-rails, seven feet in length; these I plant along the rows, at distances of ten feet from each other, and at such a depth as to leave five feet above the surface of the earth. Then taking three

nails to each post, and driving them to within half an inch of their heads, the first two and a half feet from the ground, a second midway between that and the top, and the third near the top, I attach No. 11 iron annealed wire firmly to one of the nails in the end post, pass on to the next, and stretching it straight and tight, give it one turn round a nail in the same line as the one to which it was first attached. Having in this manner extended it along the three courses, the whole length of the row, my trellis is formed. I have had a portion of my vineyard fitted up in this way for three years, and experience has confirmed the superior fitness of the plan. It is not its least recommendation, that it possesses in a degree the character of labor-saving machinery. A very important and extensive labor-making portion of the operations in the vineyard during the summer is the attention required by the growing shoots to keep them properly trained up. They grow and extend themselves so rapidly, that where the strips of the trellis are lath, or where poles are used to support vines, unless very closely watched, they fall down in every direction, in a very unsightly and injurious manner. Here the wire being small, the tendrils or claspers eagerly and firmly attach themselves to it, and thus work for themselves in probably two-thirds of the instances where the attention of the vigneron would otherwise be required. There is a free access afforded to the sun and air, and no hold for the wind to strain the frame. After the vines have attained a full capacity for production (say five years from the cutting), my view is to prepare them for bearing an average of fifty clusters to each, leaving several shoots of from three to five joints on a vine for this purpose. When fresh pruned, they will not be more than four feet high, at their greatest age."

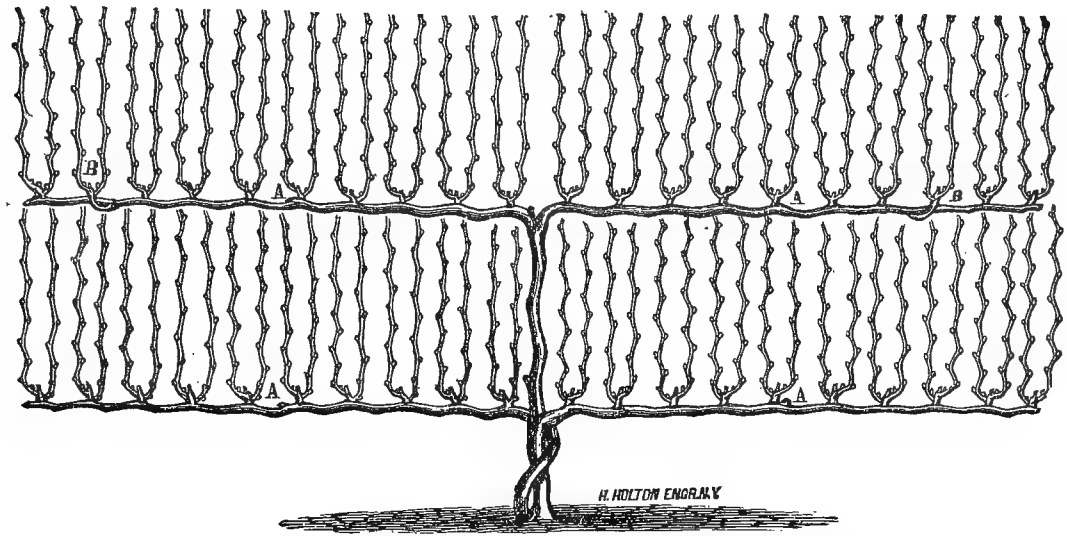
The modes of training in vineyards and vineries are alike suited to the garden. Low training may be practised in borders or hedge rows in large gardens; and high training in sheltered situations, on high trellises or arbors. By proper management, the vine may be elevated to the middle story of

a house by a single stem, and afterwards trained to a great height according to the taste of the proprietor.

INFLUENCE OF CLIMATE.

Dr. R. T. Underhill, of New York, has a vineyard at Croton Point, near Sing Sing, where, after having sunk thousands of dollars in attempting to raise the most celebrated foreign varieties, he abandoned the project as visionary, and commenced planting the Isabella Grape in 1832, and the Catawba in 1835. Mr. Underhill has now upwards of twenty acres of these grapes, chiefly of the former, under the most successful cultivation. He says that the Isabella Grape ripens two or three weeks earlier than the Catawba, and that these two varieties are, in his estimation, the best adapted for general purposes; the former yielding with him a more valuable crop than any other with which he is acquainted. He says that the quality of this fruit has improved very much within a few years, the clusters and berries being much larger and sweeter; and that they are capable of still greater improvement by high cultivation.

"In this latitude (south of the highlands of the Hudson), I find that the Isabella Grape ripens quite as well when planted in a level field, protected from the north and west winds by woods or hedges, as on declivities. Several of my vineyards are thus located, and, as far as I can perceive, the fruit ripens at about the same time, and is of the same quality as those planted on steep side-hills. I think, however, that north of the highlands, side-hills would be preferable. To prepare the ground for a vineyard, the best way is to turn over the whole of the surface soil from fifteen to eighteen inches in depth, early in the spring, by ploughing twice in the same furrow. This will place the richest part of the soil in a position where it will give the greatest supply of nourishment to the vines. Few vineyards in this country have been prepared in this way. But the cost is so small and the advantages so great, that it

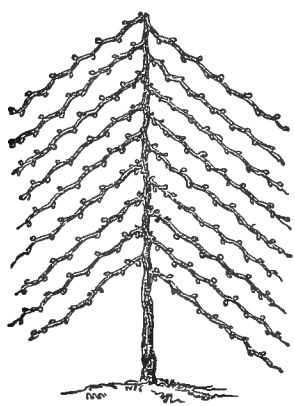


The Horizontal and Renewal System of Training Grape-vines.

should be done wherever there are no rocks or large stones to prevent it."

HORIZONTAL TRAINING.

A vine may be trained horizontally under the coping of a close fence or wall, to a great distance, and the borders in an east, south-east, and southern aspect of large gardens may be furnished with a variety of sorts, which will ripen in great perfection, without encumbering the borders; or the plants may be trained low, like currant-bushes; in which case, three or



Training in the Form of a Tree.

more shoots, eighteen inches or two feet in length, may diverge from the stem near the ground, to supply young wood annually for bearing. The summer pruning consists in removing shoots which have no fruit, or are not required for the succeeding season; and in topping fruit-bearing shoots, and also those for succeeding years when inconveniently long and straggling. For as, by this mode, the shoots destined to bear are all cut into three or four eyes at the winter pruning, no inconvenience arises from their throwing out laterals near the extremities, which topping will generally cause them to do.

In training vines as standards, the single stem at the bottom is not allowed to exceed six or eight inches in height, and from this two or three shoots are trained or tied to a single stake of three or four feet in length. These shoots bear each two or three bunches, within a foot or eighteen inches of the ground; and they are annually succeeded by others which spring from their base, that is, from the crown or top of the dwarf main stem. This is the mode practised in the north of France and in Germany. In the south of France and Italy, the base or main stem is often higher, and furnished with side shoots, in order to afford a great supply of bearing-wood, which is tied to one or more poles of greater height. The summer pruning, in this case, is nearly the same as in the last. In the winter pruning, the wood that has borne is cut out, and the new wood shortened, in cold situations, to three or four eyes, and in warmer places to six or eight eyes.

PINCHING AND RUBBING OFF BUDS.

Nicoll observes that "most of the summer pruning of vines may be performed with the fingers, without a knife, the shoots to be displaced being easily rubbed off, and those to be shortened, being little, are readily pinched asunder." After selecting the shoots to be trained for the production of a crop next season, and others necessary for filling the trellis from the bottom, which shoots should generally be laid in at the distance of a foot or fifteen inches from each other, rub off all the others that have no clusters, and shorten those that have, at one joint above the uppermost cluster. For this purpose, go over the plants every three or four days till all the shoots in fruit have shown their clusters, at the same time rubbing off any water-shoots that may rise from the wood.

Train in the shoots to be retained as they advance. If there be an under trellis, on which to train the summer shoots, they may, when six or eight feet in length, or when the Grapes are swelling, be let down to it, that the fruit may enjoy the full air

and light as it advances towards maturity. Such of these shoots as issue from the bottom, and are to be shortened in the winter pruning to a few eyes, merely for the production of wood to fill the trellis, may be stopped when they have grown to the length of four or five feet. Others that are intended to be cut down to about two yards, and which issue at different heights, may be stopped when they have run three yards, or ten feet, less or more, according to their strength. And those intended to be cut at or near the top of the trellis, should be trained a yard or two down the back, or a trellis may be placed so as to form an arbor; or they may be placed to run right or left a few feet on the uppermost wire.

The stubs or shoots on which the clusters are placed will probably push again after being stopped, if the plants be vigorous. If so, stop them again and again. But after the Grapes are half grown, the shoots will seldom spring. Observe to divest the shoots, in training, of all laterals as they appear, except the uppermost on each, in order to provide against accidents, as hinted before, in training the newly-planted vines. When these shoots are stopped, as directed above, they will push again. Allow the lateral that pushes to run a few joints, and then shorten it back to one, and so on as it pushes, until it stops entirely. When the proper shoots get ripened nearly to the top, the whole may be cut back to the originally shortened part, or to one joint above it, if there be reason to fear that the uppermost bud of the proper shoot will start. Divest the plants of all damp and decayed leaves as they appear, as such will sometimes occur in continued hazy weather, and be particularly cautious not to injure the leaf that accompanies the bunch; for if that is lost, the fruit will be of little value.

THINNING THE GREEN FRUIT.

"Everyone of penetration and discernment," Nicoll observes, "will admit the utility of thinning the berries on bunches of Grapes, in order that they may have room to swell fully; and,

further, that of supporting the shoulders of such clusters of the large-growing kinds as hang loosely, and require to be suspended to the trellis or branches, in order to prevent the bad effects of damp or mouldiness in very moist seasons. Of these, the Hamburgh, Lombardy, Royal Muscadine, Raisins, St. Peter's, Syrian, Tokay, and others, should have their shoulders suspended to the trellis, or to the branches, by strands of fresh matting, when the berries are about the size of garden peas. At the same time, the clusters should be regularly thinned out with narrow-pointed scissors, to the extent of from a fourth to a third part of the berries. The other close-growing kinds, as the Frontignacs and Muscats, should likewise be moderately thinned, observing to thin out the small seedless berries only of the Muscadine, Sweet Water, and flame-colored Tokay. In this manner, handsome bunches and full-swelled berries may be obtained; but more so, if the clusters of overburdened plants be also moderately thinned away. Indeed, cutting off the clusters, to a certain extent, of plants overloaded, and pushing weak wood, are the only means by which to cause them to produce shoots fit to bear fruit next year; and this should be duly attended to so long as the future welfare of the plants is a matter of importance."

ROSE-BUGS ON GRAPE-VINES.

"When the rose-bugs first appear on the vines, they are so feeble as to be unable to fly even for a few yards. I directed my men to take each a cup, with a little water in it, and go through the vineyards every morning, removing every bug from the vines; and this was done quite rapidly by passing the cup under the leaf and merely touching it, when the bugs instantly dropped, and were received in the cup containing the water. When the cup was full, they were soon destroyed by crushing them with the foot. This plan was persevered in every morning as long as a bug could be found, and was attended with such success, that they have given me very little trouble since. I also tried ploughing my vineyards just before

winter set in, so as to expose to the weather the insect in the larva state, which will certainly destroy the young tribe that have not descended below the reach of the plough. For two years past the number has been so small that I have omitted this process for their destruction."—*R. T. Underhill.*

MULBERRY.

MURIER. *Morus.*

There are several species of the Morus or Mulberry. The white kind is commonly cultivated for its leaves to feed silkworms, though in some parts of Spain, and in Persia, they are said to prefer the Black Mulberry. In China, both sorts are grown for this purpose. The most esteemed variety of the white is grown in Italy, and especially in Lombardy, with vigorous shoots, and much larger leaves than the other. The *Morus multicaulis* is cultivated in many parts of France, and is by some preferred to all other varieties. It is said that a less quantity of foliage from this variety will satisfy the silkworms. The late Andrew Parmentier, Esq., was the means of introducing several choice varieties from that country; and our nursery-men, in general, have of late years turned their attention to the cultivation of such as are best adapted to silkworms.

In France, the white Mulberry is grown as pollard Elms are in England. In Lombardy it is grown in low, marshy ground. In China it is also grown in moist loamy soil; and both there and in the East Indies, as low bushes, and the plantations rooted up and renewed every three or four years. In many parts, when the leaves are wanted for the worms, they are stripped off the young shoots, which are left naked on the tree; in other places the shoots are cut off, which is not so injurious to the tree, while the points of the shoots, as well as the leaves, are eaten by the worms.

PROPAGATION BY SEEDS.

The plants are sometimes raised from seed, and one ounce of seed will produce five thousand trees, if sown in rich loamy soil in the latter part of April, or early in May. But the young plants will require protection the first winter. The berries are put in a sack of coarse cloth, crushed with a foot or with the hands, and the pulpy matter all washed out, leaving the seeds quite clean. They are then spread out on boards or cloth, and dried in the shade, and kept in a cool and dry apartment till planting-time. The soil should be very mellow, and in a good state of fertility. The seeds may be planted in drills four feet apart, and not more than one inch deep. Half an inch deep is better. If the soil be heavy, cover the seed with leaf-mould, or some other fine and mellow dirt. Cultivate between the drills with a horse-hoe; and dress out the young plants as if they were carrots.

PROPAGATION BY LAYERS.

The different kinds of Mulberry are more commonly propagated by layers and cuttings put down in the spring. The ground is well prepared and enriched the previous year; and the cuttings are taken from the trees early in the spring, or even in the winter, and kept like scions till the ground is ready to receive them. Transplant the cuttings as recommended for currants (which see on a previous page), and cultivate in drills till the young trees are of a suitable size to transplant. The Italian variety is frequently grafted on seedling stocks of the common sort, in order to preserve it from degenerating. In the East Indies, the plants are raised from cuttings, three or four of which are placed together, where they are finally to remain.

THE FRUIT.

Mulberry-trees are valuable for their fruit; and in England

the black and red kinds are in great esteem, and much cultivated. The fruit of the white Mulberry is white, and less acid than that of the black species. The black is naturally a stronger tree than the other; the fruit is of a dark, blackish red, and of an agreeable aromatic and acid flavor. The red Mulberry has black shoots, rougher leaves than the black Mulberry, and a dark, reddish fruit, longer than the common sort, and of a very pleasant taste. The fruit of the yellow Mulberry is sweet and wholesome, but not much eaten, excepting by birds. The timber, however, is valuable, from its abounding in a slightly glutinous milk of a sulphurous color, and is known in Europe under the name of fustic wood, for dying a yellow color. In Russia, the fruit of the *Morus tartarica* is eaten fresh, conserved, or dried. A wine and a spirit are also made from them; but the berries are said to be of an insipid taste.

All the species of the Morus are remarkable for putting out their leaves late, so that when they appear, gardeners may safely set out their green-house plants, taking it for granted that all danger from frost is over. From this circumstance, plantations of Mulberry-trees may be made in this country in the spring of the year with greater safety.

The Mulberry produces its fruit chiefly on little shoots of the same year, which arise on last year's wood and on spurs from the two-year-old wood, mostly at the ends of the shoots and the branches. In pruning, thin out irregular crossing branches, but never shorten the young wood on which fruit is produced. If any of the dwarfish kinds are cultivated as espaliers for their fruits, cut so as to bring in a partial succession of new wood every year, and a complete succession once in two years, taking the old barren wood out, as may be necessary. As the blossom-buds cannot be readily distinguished from others in the winter, the best period for pruning is when the blossoms first become visible in the spring.

THE PAPER MULBERRY.

There is another genus of plants, known as the Paper Mul-

berry, which is very ornamental, called *Broussonetia papyrifera.* Though a low tree, it has vigorous shoots, furnished with twc large leaves. The fruit, which is small, is surrounded with long purple hairs, changing to a black purple color when ripe, and full of juice. "In China and Japan it is cultivated for the sake of the young shoots, from the bark of which the inhabitants of the Eastern countries make paper. The bark being separated from the wood, is steeped in water, the former making the whitest and best paper. The bark is next slowly boiled, then washed, and afterwards put upon a wooden table, and beat into a pulp, which being put in water, separates like grains of meal. An infusion of rice, and the root of manihot, are next added to it. From the liquor so prepared, the sheets of paper are poured out one by one, and when pressed the operation is finished."

"The juice of this tree is sufficiently tenacious to be used in China as a glue, in gilding either leather or paper. The finest and whitest cloth worn by the principal people at Otaheite, and in the Sandwich Islands, is made of the bark of this tree. The cloth of the Bread Fruit tree is inferior in whiteness and softness, and worn chiefly by the common people."

VALUE OF THE WOOD.

The wood of Mulberry is more durable than the best of White Oak, when it is exposed to the influences of the weather. For fence-posts, it will out-last white cedar; and it is nearly equal in durability to red cedar. I know of posts in Connecticut that have been set in the ground for fifty years and are yet sound.

NECTARINE.

PECHERA FRUIT LISSE, OU BRUGNONS. *Amygdalus nectarina.*

The varieties of this fruit resemble the Peach in every respect, except that the skin is smooth, of a waxen appearance,

and the flesh generally more firm. Although of the same genus as the Peach, which is so plentiful in this country, the fruit of the Nectarine is quite a rarity, and seldom appears in our markets. There are seventy-two varieties cultivated in the Horticultural Gardens of London under name.

It is generally allowed that their failure here is occasioned by the attacks of insects. The most efficacious method that I have heard of for securing anything like a crop of Nectarines, is to fumigate the trees in the evening, when the air is calm and serene, at the season when the fruit is ready to set. Tobacco is the most effectual antidote for these insects; but a friend of mine collected a quantity of salt hay that had been used for his Spinach the preceding winter; with this he created a smoke, first on one side of his plantation, and afterwards on the other, by which means he obtained a good supply of fruit. Our enterprising horticulturist, Mr. W. Shaw, has succeeded in gathering fine fruit by training his trees against a close fence; and it has been discovered by others that the Nectarine, like the Grape-vine, will yield best in sheltered situations. That eminent horticulturist, Mr. David Thomas, observes that "A vast quantity of fruit is annually destroyed by the Curculio, which causes the Plum, Apricot, and Nectarine prematurely to drop from the tree. To prevent this loss, let the tree, after the blossoms fall, be frequently shaken by a cord connected with a swinging-door, or with a working pump-handle; or let the bugs be jarred from the tree on sheets spread beneath the tree and killed. Or keep geese enough in the fruit-garden to devour all the damaged fruit as it falls. We know that this last method is infallible."

As some may object to shaking or jarring fruit trees, for fear of disturbing the fruit, such are here reminded, that if the blossoms set more fruit than can be supported, it will not come to full perfection, and the trees may be injured in their future bearing; for these reasons, when fruit sets too thick, it should be thinned in an early stage of its growth.

The Nectarine, as also the Peach-tree, is subject to injury

by an insect different from the Curculio species, which feeds on the sap beneath the bark, principally near the surface of the earth, but if not checked, will commit ravages on the trunk and root, so as to eventually destroy the tree. The egg is supposed to be first deposited in the upper part of the tree; and in the months of June and July it becomes a very small maggot, which drops to the ground and approaches the tree near the surface. If the ground be kept clear around the roots, as it ought always to be, the worm can readily be detected by a small speck of gum, which appears on the tree after it has made its entrance, which gumminess will increase in quantity as it progresses. But if the trees are thoroughly examined about once a week, or ten days, and the gum, wherever found, removed by means of a small knife or pointed wire, the worm may be at once defeated from making any havoc on the trees. An orchard of several acres may be kept free from worms by going over it a few times. After a shower of rain is a good time, as the gum can then be more easily discovered; and when it is removed, the wound will soon heal up, and the danger is over, provided the ground be kept cultivated around the trees, and the collar, or that part from which emanate the main roots, be near the surface.

ILL EFFECTS OF PLANTING TOO DEEP.

This is an important precaution, and should be attended to at the time of transplanting all descriptions of trees and smaller plants; because *deep planting* prevents the essential circulation of the juices of plants in their regular and natural courses, and consequently causes disease and premature death; and it must be admitted, that from the circumstance of this fruit being generally raised on standard trees, and in a light soil, our cultivators are apt to plant too deep; and thus act contrary to sound judgment and philosophy, with a view to save the trouble and expense of staking or otherwise supporting their newly-planted trees, which precaution is absolutely necessary

to their preservation, even in less tempestuous climates, and in stiff as well as in light soil.

SALTPETRE FOR NECTARINES.

Saltpetre dissolved in the proportion of one pound to five gallons of water, and applied around the stems and roots of trees, as recommended for plants in general, is, in my opinion, one of the best remedies for the destruction of various kinds of insects. It is, moreover, allowed by modern and learned physiologists to contain the most essential nutriment for all descriptions of trees or smaller plants, when judiciously used. Other remedies are recommended to be applied for the destruction of these insects around fruit-trees, besides those previously mentioned; as dissolved potash, coal-tar, sulphur, vinegar, and soapsuds. Culture, upon correct principles, will operate not only as a radical cure, but as a preventive to all defects in trees and plants; which, to be healthy and productive, should be so managed that the sap and nutrimental juices can circulate through every pore which nature has designed for their perpetuity.

PROPAGATION BY BUDDING.

The Nectarine is generally budded on stocks of the same species, or on the Peach or Plum, two or three years old. Knight recommends growing Almond-stocks for the finer kinds of Nectarines and Apricots, as likely to prevent the mildew, and as being allied to the Peach. Dubreuil recommends a Plum-stock for clayey soils, and the Almond for such as are light, chalky, or sandy. The same opinion is held by the Montreal gardeners. The Flemish nursery-men graft both the Peach and Nectarine on the Myrabella Plum, a small cherry-shaped fruit.

The budding may be performed in July or August, in the side of the stock; which will, if properly managed, shoot the following spring, and attain the length of three or four feet the first year. After the budded trees have ripened their first year's shoots, they may either be planted where they are to remain, or

retained in the nursery for two, three, or four years, till in a bearing state. Whether the plants be removed into the orchard at a year old, or remain in the nursery, the first shoots from the bud must be headed down in a judicious manner, in order to promote the most desirable form. In annual pruning, thin out superfluous branches and dry wood, and shorten the bearing-shoots. Nectarines may be trained to a close fence or wall, in private gardens; in which case, such plants should be chosen as are budded low. (See article on Apricot.) The Nectarine may be raised from the seed, planted the same as Peach-pits.

SELECT DESCRIPTIVE LIST OF NECTARINES.

FREESTONE NECTARINES.

AROMATIC. A middle-sized, rather globular fruit, skin pale straw-color, with deep red or brown next the sun; flesh pale straw, but red at the stone; juice of a rich vinous flavor; ripe early in August.

BOSTON, *Lewis's Seedling.* A fine native variety, raised by Mr. Lewis, of Boston; fruit of medium size; heart-shaped; color bright yellow, mottled with red; flesh yellow, firm, pleasant, and peculiar in flavor; ripe in September.

ELRUGE, *Claremont, Temple's, Vermash of some collections.* One of the very best and most highly flavored Nectarines; fruit medium size, of a green or pale yellow color, with violet cheek; pulp whitish, melting, very juicy, rich, and high-flavored; ripens early in August.

FAIRCHILD'S EARLY. Fruit very early, but small; of globular shape, yellow in the shade, deep scarlet next the sun; flesh yellow, not juicy, but well flavored; ripe in July and August.

PERKINS'S SEEDLING. A very large beautiful Nectarine, raised by S. G. Perkins, from the Boston, *Lewis's Seedling;* the form is globular; color bright yellow, with dark crimson on one side; flesh tender, juicy, and high flavored; ripe in September

PITMASTON'S ORANGE. A good-sized globular, almost heart shaped fruit, of a rich yellow color, but dark crimson or purple next the sun; flesh golden yellow, but red next the stone, from which it separates; it is melting, juicy, saccharine, and high flavored; ripe in August.

SCARLET. A middle-sized fruit, somewhat ovate, of a beautiful scarlet color next the sun, and pale red on the shaded side; the flesh separates from the stone, and is at maturity in August.

VERMASH. *True Vermash.* This fruit is rather of small size and roundish form, tapering towards the eye; the skin is of a very deep red color next the sun, and of a greenish hue on the other side; flesh white, rich, melting, and juicy; at maturity in August.

VIOLET, *Violette Hative, Petite Violette Hative, Lord Selsey's Elruge, Large Scarlet.* Fruit variable in size, generally medium; pale yellowish-green, but darkish purple and red next the sun; flesh melting, juicy, rich, and excellent; ripe in July and August.

WHITE, OR FLANDERS NECTARINE, *New White, Emerson's New White, Neale's White.* A middle-sized, roundish, very pale fruit, slightly tinged with red next the sun; flesh tender and juicy, with a fine vinous flavor; ripe in August.

CLINGSTONES, OR PAVIES.

BRUGNON VIOLET MUSQUÉ, *Brugnon Musqué.* Fruit large, of a deep red and yellow color; skin very smooth; flesh yellow, but red at the stone; saccharine, vinous, musky; at maturity in August and September.

EARLY NEWINGTON, *Large Black Newington, Lucombe's Seedling.* Fruit below the medium size, ovate; skin pale green, and on the sunny side of a deep red color; pulp superexcellent; considered by some as the best of all Nectarines; ripe in August and September.

GOLDEN. Fruit medium size, of the finest orange color, delicately and beautifully mottled with red next the sun, which

gives to it a clear waxen appearance; flesh firm, yellow, pale red at the stone, and has a poignant rich flavor; ripens in August and September.

Red Roman, *Roman Red.* A very excellent Nectarine, of large size; the skin dark red next the sun, and of a yellowish hue on the other side; flesh yellowish, but red next the stone; it abounds with rich juice when fully ripe, in August and September.

Scarlet Newington, *Late Newington, Sion Hill.* This variety is much esteemed, the fruit is large, of a beautiful red color next the sun, and of a fine yellow or amber on the other side; its quality is excellent, being rich and juicy; early in September.

Tawny Newington. Fruit large, somewhat ovate; tawny-colored, marbled with dull red or orange next the sun; flesh pale yellow, but red at the stone; very juicy, sugary, and of the most delicious flavor; ripens in August and September. This, in England, is considered one of the best of clingstone Nectarines.

ORANGE, LEMON, &c.

Oranger, Citronier. *Citrus.*

Notwithstanding this fruit, and also the Lemon and Lime, are attainable at all seasons of the year, by supplies from our Southern States, the West Indies, and the South of Europe, yet the plants are entitled to our notice on account of their being so easily cultivated, and from their affording an ornament by exhibiting their fruit the whole of the year. The Orange is generally cultivated as a green-house plant; but may be kept in a light room throughout our severe winters, provided the temperature is not suffered to be below the freezing point, 32 degrees. Its recommendations are, handsome evergreen, shining, tree-like form; most odoriferous flowers,

and brilliant, fragrant, and delicious fruits, which succeed each other perpetually, and are not unfrequently seen on the tree at the same time, in two or three stages of growth.

All the species of Citrus endure the open air at Nice, Genoa, and Naples; but at Florence and Milan, and often at Rome, they require protection during the winter, and are generally planted in conservatories and sheds. Loudon says that in the south of Devonshire, and particularly at Saltcombe, may be seen in a few gardens, Orange-trees that have withstood the winter in the open air upwards of a hundred years. The fruit is as large and fine as any from Portugal. Trees raised from seed, and inoculated on the spot, are found to bear the cold better than trees imported.

Any of the varieties of the Orange, Lemon, Lime, Shaddock, Citron, etc., may be grafted or budded on stocks of the common Orange or Lemon; but seed of the Shaddocks and Citrons produces the strongest stocks, and on these may be grafted such kinds as may be needed for a conservatory. The most suitable time for budding is July and August; but this operation may be performed at any time when the sap is in motion. The directions for the management of green-house plants apply also to this family of plants.

PEACH.

PECHER. *Amygdalus Persica.*

The *Peach*, plump and ripe, brings us excellent fare,
Let the *Nectarine*, too, in this eulogy share—
Their flavor how grateful—their juices how fine,
Unequall'd in taste by the fruit of the vine.

It is generally considered that the Peach is of Persian origin. In Media, it is deemed unwholesome; but when planted in Egypt, becomes pulpy, delicious, and salubrious. It has been cultivated, time immemorial, in most parts of Asia.

When it was introduced into Greece is uncertain. The best Peaches in Europe are supposed to be grown in Italy, on standards.

Although this fruit will thrive in any sweet, pulverized soi that is properly prepared, a rich sandy loam is the most suitable. Next to the selection and preparation of a suitable soil, a choice of good healthy trees is of the utmost importance. The seed for stocks should be selected from the vigorous growing young, or middle-aged healthy trees; and the buds should be taken from some of the choicest fruit-bearing trees that can be found. Let the stocks be fairly tested before they are budded; and if any infection exist in the stocks, or in the vicinity where the choice buds are found, reject them if you wish to rear a healthy progeny; as more depends upon these particular points than many are aware of.

BUDDING PEACH-TREES.

In this country the Peach is generally budded on stocks of its own kind; but in England it is often budded on damask Plum-stocks, and some of the more delicate sorts on Apricot stocks, or old Apricot-trees cut down; or on seedling Peaches, Almonds, or Nectarines. (See article Nectarine.) Cobbett says: "There are thousands of Peach-trees in England and France that are fifty years old, and that are still in vigorous fruitfulness." He attributes the swift decay of the Peach-trees here to their being grafted on stocks of their kind. Mr. Michael Floy, of the Harlem Nursery, makes the following observations on this subject, which he says are the result of thirty years' experience as a nursery-man in the vicinity of New York:

"In this country Peaches are generally budded on Peach-stocks. Their growth is rapid, and they will form a tree large enough to transplant from the nursery, the first and second year after budding. Notwithstanding the rapid growth of our peaches, and their coming to maturity so early, with but little care and trouble, it must at the same time be admit-

ted that they too often decay with almost the same celerity. A question here will naturally arise on this subject. What can be done to remedy this?

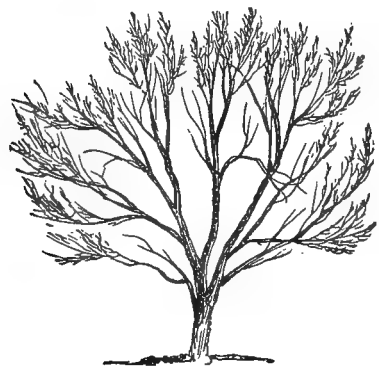
"CAUSE OF PREMATURE DECAY.

"I think the Peach stock is defective, and is not sufficiently strong and lasting to make a permanent tree. The roots are soft and delicate, very liable to rot in cold heavy ground, particularly if suffered to stand in a sod, or where the ground is not kept clean, dry, and manured every season. *Secondly.* Supposing that the trees are planted in a warm free soil (which is the proper soil for the Peach) they are liable to the attacks of the worm, which eats into their roots, and barks the trees all around, until the trees are completely destroyed. No better method of destroying these worms has been discovered than simply digging round the trees, and examining the infested plants, and where gum is seen oozing out, there the worm may be generally found and destroyed.

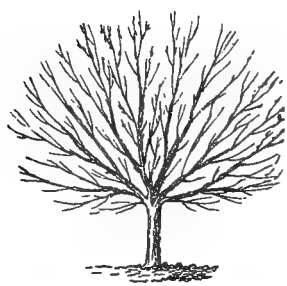
"I think an effectual remedy against this intruder may be found, by budding Peaches and Nectarines on the common bitter ALMOND STOCK. The worm does not like this stock. Peach scions will take on it, and grow about as freely as on the common Peach-stock. *Thirdly.* The Peach-stock causes the Peaches and Nectarines to grow too rapidly, making strong shoots, these producing secondary or lateral shoots; and the fruit of the following summer is produced on the top of these lateral shoots, instead of being produced on the principal or first shoots. This causes naked wood at the bottom; and a straggling, unsightly tree, whose branches being heavy at the top with the fruit, are broken down by high winds."

The illustrations of peach-trees represent the right way and the wrong way of pruning peach-trees. If the branches be not shortened in every year, the limbs will become long and bare, except at the ends; and the fruit will be very inferior. On the contrary, if the ends of the limbs be clipped off the inside of the top will be filled with bearing-branches of excellent

fruit. Beginners should aim to have the tops of their peach-trees well filled up with bearing branches. By pruning a little



Peach-Tree badly Pruned.



A Peach-Tree well Pruned.

every year, there will be no difficulty in doing it in a most satisfactory manner.

THE YELLOWS.

For several years past Peach-trees have been subject to what has been deemed a disease called the yellows, from the circumstance of the trees having a yellow and sickly appearance. Much curious philosophy has been spent on this subject with-

out arriving at any satisfactory conclusion. As a remedy for the yellows Mr. Floy recommends budding the Peach on Plum-stocks. He writes:—"The Plum-stock is undoubtedly the best for Peaches and Nectarines in the *Northern* and *Eastern* States; but especially for open dwarfs or espaliers, for which I give the following reasons:—*First.* The Plum-stock prevents the too rapid growth of the shoots, and causes the principals to bear the fruit the following season, instead of producing lateral shoots the same season, and causing the tree to be more dwarf. The branches are strong and fruitful to the bottom of the shoot, thereby having more fruit in a smaller compass. *Secondly.* It makes harder and less pithy wood, and enables it the better to withstand the cold; and this may be easily proved by cutting the branches of each. The shoot on the Plum-stock will be twice as hard and firm as the one on the Peach-stock. But, *Thirdly*, and the most important reason is, that the Plum ceases to send up its sap early in autumn, causing the Peach to perfect its wood before the cold weather sets in."

It is also evident that a tree deprived of its functions or means of growing luxuriantly, is in a similar situation to a diseased animal. If disease be not checked before the juices of the tree become putrid, it will not only die, but will contaminate the earth in which it is planted, to the destruction of its neighboring inmates of the garden or field. All experienced nursery-men admit this to be the case with diseased Peach-trees, and some have actually abandoned their Peach-orchards, and chosen fresh ground for new plantations.

It is precisely the same with smaller vegetable plants. A diseased Cabbage, for instance, by its excremental and corrupt juices being spent in the ground, will render the cultivation of the same or allied species a casualty; and daily observation teacheth, that young and thrifty plants often fall a prey to worms and reptiles which were generated by a previous crop.

Deep planting and injudicious culture are the causes of most of the diseases and failures of fruit-trees; and in

this way I account for Peaches being less plentiful than they were when left almost to nature; which was the case, I am informed, in the beginning of the present century. That this malpractice in horticulture is general, the most superficial observer may discover by comparing the thrifty growth of those trees scattered by nature in our highways and byways with many of those aided by the art of man. If any of my readers should require proof of my assertions, I can show them from the window of the room where this article is being written, scores of living, or rather dying evidences of the evil of deep planting.

PRUNING AND TRANSPLANTING.

All the varieties of the Peach produce their fruit upon the young wood of a year old, the blossom-buds rising immediately from the eyes of the shoots. The same shoots seldom bear after the first year, except on some casual small spurs on the two years' wood, which is not to be counted upon. Hence the trees are to be pruned as bearing entirely on the shoots of the preceding year, and a full supply of regular grown shoots must be retained for successional bearers. Cut out the redundant shoots, and all decayed and dead wood, and reduce some of the former bearers, cutting the most naked quite away.

A Peach Orchard may be planted at any time after the bud is established, until the trees are three or four years old, which may be placed from fifteen to twenty feet from each other, or from any other spreading trees. The dwarf kinds may be introduced into the kitchen-garden, and trained against fences, as directed for the Apricot, or as espaliers or dwarf standards.

A judicious pruning of Peach, Nectarine, and other kinds of young trees is necessary to prevent the long, straggling growth of limbs which are frequently bare of shoots for some distance from the body of the tree, which should be shortened, to cause the production of lateral shoots. An annual sum-

mer pruning is essential to the well-being of a tree, as by shortening the wood of the preceding year's growth, a symmetrical tree containiug a good supply of bearing-wood may be formed. By this treatment the longevity of a tree will be promoted, provided the work is done with judgment and care, so as not to render the tree impervious to the influence of the sun and air; for, be it remembered, the head of a tree must always be kept moderately open, for the purpose of giving the fruit the best possible chance of ripening perfectly.

Divest young budded and grafted trees of all shoots from the stocks, below the bud or graft, as they appear; also rub off all useless buds in early-shooting wall trees.

DESCRIPTIVE LIST OF PEACHES.

FREESTONE PEACHES.

ASTOR. An excellent variety, originating in the city of New York; the fruit is above medium size; skin pale yellow, with red cheek; flesh melting and pleasant flavored; juice sweet and plentiful; ripe the latter end of August and early in September.

BEERS'S RED RARERIPE, *Middletown Late Red Rareripe.* Fruit very large, of oblong shape; skin nearly white, with a red cheek; flesh firm, juicy, and high flavored. This variety originated with Joseph Beers of Middletown, New Jersey; it ripens there from the middle to the end of September, and is represented as a good market fruit.

BELLE DE VITRY, *Admirable Tardive, Bellis, Beauty of Vitry* A large fruit, of fine red color next the sun; on the opposite side a yellowish white; flesh white, stained with red at the stone; firm, juicy, sweet, vinous, and excellent; ripe early in September.

BELLEGARDE, *Galande, Violette Hative, Noire de Montreuil, Smooth-Leaved Royal George of some.* The tree is vigorous

and productive; fruit above medium size, globular; skin greenish-yellow, and on the sunny side rich deep red, with dark purple streaks; flesh pale yellow, very melting, saccharine, and juicy; a first-rate fruit, early in September.

Buonaparte. A fine early variety, introduced by Joseph Buonaparte, and recommended by Caleb R. Smith, of Burlington, New Jersey, as being the best market fruit known at that place; its color is red, mottled with yellow; flesh melting; juice sweet and delicious, in August.

Brevoort's Seedling Melter, *Brevoort's Morris.* A superior Peach, raised by Henry Brevoort, Esq., of New York. Skin of a dingy white color, with red cheek; flesh white, firm, rich, and sugary; ripe by the middle of August.

Columbia. Fruit of medium size; skin rough and thin; color dull red; flesh yellow, fibrous, similar to a pineapple; juicy and rich. It is supposed that this Peach originated with Mr. Cox. It is a singular variety.

Cooledge's Favorite, *Cooledge's Early Red Rareripe.* A large handsome globular fruit; skin red, tinged with crimson; flesh very melting, juicy, and of delicious flavor, in August. The tree is vigorous and very productive.

Crawford's Early Melocoton, *Early Crawford.* Fruit large, oblong; skin yellow and red; flesh yellow, juicy, sweet, with an agreeable acidity. It originated with Mr. Crawford, Middletown, New Jersey. The tree is a great bearer, and the fruit is considered one of the most marketable varieties, in August and September.

Crawford's Late Malacatune. Fruit very large, round; skin yellow and red; flesh yellow, sweet, juicy, and excellent. It is highly estimated at Middletown for its productiveness and adaptation for market; in September and October.

Double Montagne, *Sion Early, Double Mountain, Montauban.* A beautiful and excellent Peach of middle size; skin greenish white, but soft red, marbled with a deeper red next the sun; flesh white and melting, juice plentiful and highly flavored; ripe in August.

Early Orange, *Orange Freestone, Yellow Rareripe, Yellow Melocoton, Golden Rareripe, Early Yellow.* Fruit under a medium size, inclining to the oval shape, apex full, with a small tip; skin greenish yellow; flesh fine and yellow; juice rich and sweet, but not plentiful; ripe in August and September. There are several varieties under the same name, some of which are inferior to the true Orange Peach.

Early Royal George. *Red Magdalen of Prince.* A superior variety, of medium size and rather globular form; skin yellow, with red cheek; flesh melting and delicious; in August. There are several varieties cultivated under this name, differently described.

Eastburn's Choice. Fruit large, nearly round; skin pale yellow, with a red blush; flesh yellowish white; juice exceedingly pleasant and sprightly, in September and October. The tree is represented as hardy, luxuriant, and vigorous, by the Editor of Hoffy's Orchard Companion, of Philadelphia, from which this description is taken.

Emperor of Russia, *Serrated Leaf, New Cut-Leaved Unique.* The fruit of this species is deeply cleft, one half of it projecting considerably beyond the other; the skin is downy, of a brownish yellow and red color; flesh melting; juice sweet and delicious; towards the end of August. This sort was found by Mr. Floy in New Jersey, 1809, and all the stones of this fruit are said to produce plants with jagged leaves.

George the Fourth. An excellent Peach, of medium size and globular shape; of pale yellow color in the shade, and dark red next the sun; flesh yellow, but red at the stone, from which it separates; a fruit of very superior flavor when at maturity, which is early in September. It originated in the garden of Mr. Gill, Broad street, New York.

Green Nutmeg, *Early Anne, Avant Blanche.* This early variety is said to have originated in Berkshire, England. The fruit is small; its color yellowish green; its pulp melting, juicy, of very pleasant flavor, and ripens in July and August.

Murray's Early Anne is a variety raised from the seed of this. It is esteemed for its early maturity.

Grosse Mignonne, *Veloutée de Merlet, Grimwood's Royal George, Large French Mignonne, Vineuse*, according to Lindley; and the following synonymes are added by Kendrick: *Belle Beauté, Smooth-leaved Royal George, Royal Souverain, Pourpre de Normandie, Royal Kensington, Early Vineyard, Transparent*, and *Morris's Red Rareripe*. One of the most beautiful and delicious varieties in cultivation. Fruit large, depressed, hollow at the summit, with a deepish suture; skin rather downy, or rich deep red, thickly mottled on a greenish ground; flesh pale yellow, rayed with red at the stone; melting, juicy, and of a rich vinous flavor when in perfection, which is early in September.

Heath Freestone, *Kenrick's Heath*. This variety was first obtained from the late General Heath, of Roxbury, near Boston. The fruit is very large, oblong, and beautiful, frequently weighing half a pound; color pale yellowish green, with crimson or violet next the sun; its flesh is melting, juicy, rich, vinous, and agreeably acid; ripens in September and October.

Hoffman's Pound, *Morrison's Pound, Hoffman's Favorite*. This fruit is by some called the *Morrisania*, from it having been first obtained by Mr. Floy from Governeur Morris; but it originated with Martin Hoffman, Esq., of New York. The fruit is very large, skin brownish white and red; flesh yellow, firm, very juicy and delicious, parting from the stone; greatly esteemed from its ripening late in September and October.

Late Admirable, *Royale, Royal, Bourdine, Téton de Venus of Prince and Downing*. Fruit large, roundish, inclining to oblong; suture deeply impressed along one side, having the flesh swelling boldly and equally on both sides, with a slight impression on the summit; skin downy, of pale green color, streaked with dull tawny red; flesh white, delicate, melting, and highly flavored; a magnificent Peach, ripening in September.

Malta, *Pêche Malte, Belle de Paris, Malte de Normandie, Italian Peach*. Fruit above the medium size; color pale yel-

lowish green, marbled with purplish red; flesh yellow, juicy, rich, vinous, and of superior flavor; ripens at the end of August.

Madeleine de Courson, *Madeleine Rouge, Rouge Paysanne, Red Magdalen. Royal George and New Royal Charlotte of some collections.* An excellent fruit, of large size; color yellow and red; ripens at the end of August; flesh firm, white, but red at the stone; sugary and rich.

Monstrous Lemon, *Largest Lemon.* This variety was first discovered in the garden of Mr. Tiebout, now Union Place; the fruit is of the largest size, and in the gardens of two persons in New York has weighed seventeen ounces, as stated by Mr. Prince, who says that the tree requires a sheltered situation, and that the fruit is late in ripening; October.

Morris's Red Freestone, *Red Rareripe. Grosse Mignonne and Royal Kensington according to Prince.* Fruit nearly round, of large size, apex a little sunken; skin greenish yellow, with red cheek; flesh delicious and melting; a first-rate variety; ripe towards the end of August.

Morris's White Freestone, *White Rareripe, Luscious White Rareripe, Philadelphia Freestone. Lady Ann Stewart of Downing and Prince.* Fruit large, and inclining to the oval form, suture even, but not deep; apex a little sunken; skin white or rather yellowish; flesh white, juicy, rich, and sweet; ripe in September.

Neil's Early Purple, *Early Purple of Miller, Johnson's Purple Avant, Padley's Early Purple, Veritable Pourprée Hative, Pêche du Vin.* One of the most beautiful of Peaches, of medium size; skin yellow, but on the sunny side of a fine deep red and purplish color; it ripens by the middle of August; flesh melting, juicy, with a rich vinous flavor; an excellent fruit.

New Royal Charlotte, *Queen Charlotte, New Early Purple, Kew Early Purple.* A delicious Peach, rather above medium size; skin pale greenish white, with deep red next the sun; flesh greenish white, rich, and agreeable; ripe in August.

Noblesse, *Mellish's Favorite. Vanguard of Prince and*

Winter. The tree is of a vigorous growth, and very productive; fruit large, somewhat oval, of a pale red color, marbled with different shades; pulp juicy, rich, and melting when at maturity, which is in August and September.

PRESIDENT. This variety originated at Bedford, on Long Island. It is a rich, melting, juicy fruit, of large size, roundish, with a shallow suture; skin very downy, dull red next the sun, pale yellowish green in the shade; the surface covered with small red dots; a first-rate Peach; ripe in September.

PRINCE'S LATE YELLOW FREESTONE. A beautiful fruit, of a greenish-yellow color, tinged with red; flesh firm and rich. A partially ripe specimen of this variety was exhibited by Mr. Prince in the Horticultural room of the American Institute, October 24, 1843.

RARERIPE YELLOW, *Yellow and Red Rareripe, Red Velvet, Large Yellow Nutmeg. Marie Antoinette of some.* This variety is large; skin yellow and red; flesh firm, rich, and delicious, in August and September. It is considered one of the most valuable market varieties.

RED CHEEK MALACATUNE, *Hogg's Melacoton, Alberge Incomparable, Lady Gallatin, Probyn Peach.* The fruit of this variety is of large size and oval form; its color is yellow, with a red cheek on the sunny side; the flesh is also yellow, melting, rich, juicy, and luscious. There is another variety of this fruit, which originated with Mr. Polls, of New York, said to be very productive, and of excellent quality; ripens in September.

ROBINSON CRUSOE, *Early Robinson Crusoe.* Fruit large, round, and handsome; skin pale red, marbled with dark red; flesh juicy, sweet, and delicious; ripe in September. The stone from which this variety was raised by Dr. Coxe, of Philadelphia, was brought by Lieutenant Coxe from the far-famed island of Alexander Selkirk or Robinson Crusoe.

SMOCK FREE, *Smock's Freestone.* An esteemed market variety at Middletown, New Jersey, where it originated, in Mr. Smock's orchard. Some specimens of the fruit have measured

twelve inches in circumference. It is of oblong shape, skin pale yellow and dark red; flesh juicy, a little acid, and very palatable; in September and October.

Sweet Water, *Early Sweet Water. American Nutmeg of Prince.* This variety is said to have originated at Flushing; its form is round, and its color whitish green, with a red blush at maturity, which is early in August. The flesh is very tender, melting, rich, and juicy.

Teton de Venus. *Royale of some collections.* There are two or three varieties bearing this name; the fruit of the best variety is large, globular, of a pale yellowish-green color, marbled with red; flesh greenish yellow, but red at the stone; a delicious flavored Peach; ripe in September.

Van Zandt's Superb, *Waxen Rareripe.* This variety originated with Mr. Van Zandt, of Flushing; its form is oval; its skin smooth, somewhat mottled, and of a beautiful waxen appearance; flesh melting, and of excellent flavor; in August and September.

Walter's Early. Fruit large; color white in the shade, and red next the sun; flesh red, very juicy and delicious. It is considered one of the most productive and early Peaches cultivated at Middletown, New Jersey, where it ripens about the middle of August.

Washington Peach, *Boyce Peach, Washington Freestone. Early Rose of some.* A first-rate Peach; color a pale yellow in the shade, but pale red next the sun; flesh very juicy and delicious; ripens towards the end of August. A peculiar trait in this Peach is its rapid growth; it will, while ripening, in about ten days nearly double its ordinary size, weighing over half a pound.

White Blossom, *Willow Peach, Snow Peach, White Blossomed Incomparable.* This variety originated on Long Island; the fruit is white, of an oval form and handsome appearance; the flesh is also white, melting, juicy, and pleasant; it is much used for preserves when not over ripe, and is at full maturity in September.

YELLOW ADMIRABLE, *Abricotée, Admirable Jaune, Pêche d' Orange, Grosse Jaune, Pêche de Burai, Sandalie, Hermaphrodite, Apricot Peach.*

MONSTROUS PAVIE OR POMPONNE, *Gros Melocoton, Gros Persique, Rouge Pavie Monstreux, Pavie Camu.* Fruit very large, roundish, with an obtuse nipple; skin downy, of a fine red and greenish-white color; flesh white, deep red at the stone, juicy, and vinous; excellent for preserving; in September and October.

NEW YORK WHITE CLINGSTONE, *Williams's New York. New Newington of some catalogues.* Fruit large, round, with a pointed apex; skin white, tinged with rose; flesh yellow, melting or soft, but adhering closely to the stone; juice very plentiful, sweet, luscious, and high flavored; ripe in September.

OLDMIXON CLINGSTONE. Of all clingstone Peaches this is considered the most delicious; the skin is yellow, with a bright red cheek, marbled; flesh red at the stone, rich, juicy, sweet, and high flavored; the fruit ripens gradually in September. This variety is cultivated in Massachusetts under the above name; but Mr. Manning says that he has cultivated this fruit with the Old Newington and the Catharine, and could never perceive any difference in the fruit or trees.

OLD NEWINGTON, *Newington.* The fruit of this variety is large, rather globular, of a fine bright red and pale-yellow color, marbled with dashes and streaks of a deeper color; the flesh is yellowish white, but red at the stone; also juicy, rich, sweet, and well flavored; the tree is very productive; in September.

ORANGE CLING, *Round Alberge.* A beautiful native Peach, of round shape, and bright yellow or orange color; flesh orange color, aromatic, rich, and juicy. The tree is a great bearer, and from the beauty of its fruit, which ripens in September, is entitled to extensive cultivation for the market.

PAVIE MADELEINE, *Pavie Blanc, Melecoton, Myrecoton, Merlicoton, Persique à Gros-Fruit Blanc.* The fruit of this

variety is of medium size, somewhat broadly globular; skin pale yellowish white and marbled red; flesh yellowish white to the stone; juice sugary and of an agreeable flavor; toward the end of August and September.

Prince's Climax. Fruit very large, oval; skin yellow, mottled with crimson; flesh yellow, and of rich pineapple flavor; ripe in September, and good in October.

Selby's Cling. Fruit large, highly esteemed; skin white and red; flesh melting, juicy, and of peculiar rich flavor; ripe in September and October.

Smock's Clingstone. Fruit very large, oblong; skin yellow and red; flesh juicy, rich, a little acid; it ripens in October at Middletown, New Jersey, and is considered one of the most productive and profitable late market fruits.

Tippecanoe Peach, *Hero of Tippecanoe.* This variety originated with George Thomas of Philadelphia, and the fruit has been much admired at the Pennsylvania Horticultural exhibitions; it is of large size, of a beautiful yellow color, with a fine red blush; flesh yellow, firm, and juicy, possessing an agreeable acidity; it ripens late in September.

SELECT DESCRIPTIVE LIST OF PEACHES.

Baltimore Beauty. A native variety. Fruit rather small, roundish oval; skin deep orange, with a rich brilliant red cheek; flesh yellow, but red at the stone, sweet, and very good. Ripens early in August.

Bergen's Yellow. A native of Long Island. Fruit large, often measuring nine inches in circumference; skin deep orange, with dark red cheek; flesh deep yellow, melting, juicy, and delicious. Ripens early in September.

Coles' Early Red. A good early market fruit of medium size; skin pale red, mottled with darker red; flesh melting, juicy, rich, and very sprightly.

Druid Hill. A seedling Peach, raised by Lloyd N. Rogers, of Druid Hill, near Baltimore. Fruit very large, roundish; skin greenish white, clouded with red; flesh juicy, melting, and rich; towards the end of September.

Early York, *Large Early York.* Fruit of medium size, roundish; skin pale red, dotted and mottled with dark red; flesh greenish white, full of rich sprightly juice. Ripens towards the end of August.

Early Newington Freestone, *Newington Peach.* A large and exceedingly high-flavored Peach; skin pale yellowish white, dotted and mottled with a rich red; flesh white, but red at the stone; juicy and melting: end of August.

Haines' Early Red. A popular orchard fruit in New Jersey, of medium size; skin pale white, nearly covered with bright red; flesh greenish white, very juicy, sweet, and melting. Ripe about the middle of August.

La Grange. A late Peach, raised by Mr. John Hulse, Burlington, New Jersey. Fruit large, oblong; skin greenish white, tinged with red; flesh juicy, melting, and delicious. Ripe towards the end of September.

Oldmixon Freestone, *Oldmixon Clearstone.* A large American Peach, slightly oval; skin pale yellowish white, marbled with deep red; flesh white and tender, with a rich vinous flavor: early in September.

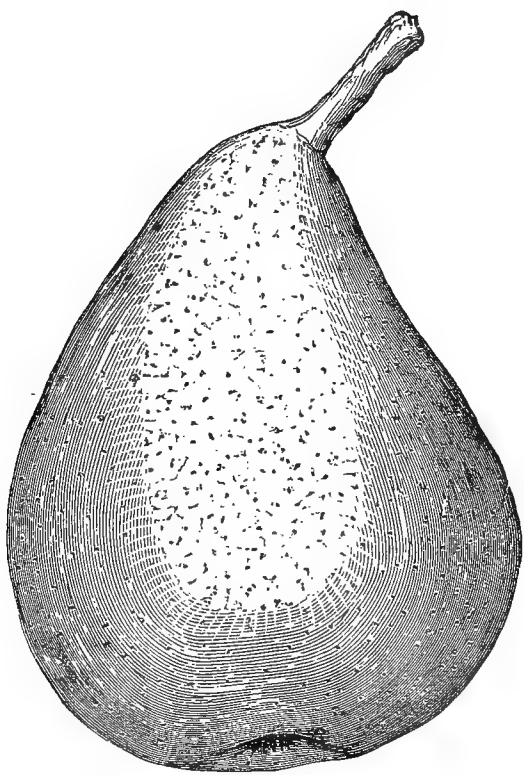
Pool's Large Yellow, *Pool's Late Yellow Freestone.* A large and handsome Pennsylvania Peach of the Melocoton family; skin deep yellow, with a dark red cheek; flesh juicy, and of excellent flavor: late in September.

Rareripe, *Late Red, Prince's Red Rareripe.* One of the finest of all peaches. Fruit large and heavy, roundish oval; skin downy, pale yellow, thickly marbled with red and fawn-colored specks; flesh white, but deep red at the stone; very juicy, melting, and of an unusually rich flavor. Ripens the second and third week in September.

Pear. Poirier. *Pyrus.*

The *Peach* and the *Pear*-tree have still ample store,
And the *Plum*, most inviting, "makes urchins adore."
A bountiful feast is spread over the land,
For great is the Giver, unsparing His hand.

The Pear-tree, in its wild state, is thorny, with upright branches, tending to the pyramidal form, in which it differs



Beurré Clairgeau.

materially from the Apple-tree. The twigs, or sprays, hang down. The leaves are elliptical, obtuse, serrate. The flowers

in terminating, villose corymbs, produced from wood of the preceding year, or from buds gradually formed on the several years' growth, on the extremities of very short protruding shoots, technically called spurs. The Pear-tree is found in a wild state in England, and abundantly in France and Germany, as well as in other parts of Europe, not excepting Russia, as far north as latitude 51. It grows in almost any soil. The cultivated tree differs from the Apple, not only in having a tendency to the pyramidal form, but also in being more apt to send out tap-roots; in being as a seedling-plant longer in coming into bearing; and when on its own root, or grafted on a wild Pear-stock, much longer lived. In a dry soil, it will exist for centuries, and still retain its health, productiveness, and vigor. The Romans had thirty-six varieties in Pliny's time. There are now several hundreds in the French and British nurseries, and a still larger number in America.

CHARACTERISTICS OF A GOOD PEAR.

Dessert Pears are characterized by a sugary, aromatic juice, with the pulp soft and sub-liquid, or melting, as in the *Beurres*, or Butter Pears, or of a firm and crisp consistence, or breaking, as in the Winter Bergamots. Kitchen-Pears should be of a large size, with the flesh firm, neither breaking nor melting, and rather austere than sweet. Perry Pears may be either large or small; but the more austere the taste, the better will be the liquor. Excellent perry is made from the wild Pear.

PROPAGATION OF PEARS.

Pear-trees are propagated by grafting in the spring, or budding late in the summer, and also by seed taken from the best sorts, for the purpose of obtaining new varieties. In raising Pear-stocks, the wild Pear is preferred in Europe, as being calculated to produce plants more hardy and durable than the cultivated sorts; and for dwarfing and precocity, the Quince is preferred.

The Pear is a much handsomer upright growing tree than the Apple; more durable, and its wood hard and valuable for the turner and millwright; but its blossoms, being white, are less showy than those of the Apple.

A Pear-Orchard may be planted at any time after the trees are two years old from the graft; and as some varieties of trees from young stocks will not come into full bearing until ten or twelve years old, they will bear removing with care at any time within that period. They may be planted at from twenty to thirty-five feet distance from each other, according to the nature of the tree. The dwarf varieties may be planted in the kitchen-garden, and trained either as espaliers or dwarf standards.

Standard Pear-trees will require but little pruning after the heads are once formed; in doing which, the branches should be permitted to extend on all sides freely. Several years may elapse before any cross-placed, irregular, or crowded branches require pruning; yet there are some kinds whose form of growth resembles the Apple, which will need frequent pruning.

IMPROVEMENT OF VARIETIES.

"That some of the fine old varieties of the Pear have deteriorated in some parts of the country, is unquestionable; this is ascribed to various causes; *first*, that the varieties have *run out*, as it is termed; *second*, to the use of diseased stocks, or scions from diseased, or aged, or unthrifty trees, or both; *third*, to the deleterious influence of the salt air, near the seaboard; *fourth*, to the want of proper attention to soil and culture. We cannot subscribe to the soundness of the reason first assigned; there are too many instances of varieties of fruit whose origin is so remote that it cannot be traced, still continuing in full vigor; and the kinds which have deteriorated in some sections of the country still maintain their celebrity in the interior, and more especially in the virgin soil of the West.

Which of the other causes assigned has tended to deteriorate the fine kinds alluded to, we will not undertake to determine; one or more of them may have had their influence, but we think that proper attention to propagation, soil, and culture, may in general, if not in every instance, restore the valuable old varieties to their pristine excellence; and in this vicinity there is decisive evidence of the improvement of that superior old variety, the White Doyenne, Saint Michael, or Virgalieu."

SELECT DESCRIPTIVE LIST OF PEARS.

SUMMER FRUIT.

AH! MON DIEU. A beautiful Pear, introduced by J. B. Mantel, of Bloomingdale, New York. Size medium; form handsome; color rich yellow with bright red cheek; flesh juicy; flavor sweet and perfumed. Tree vigorous and productive, the fruit growing in clusters of four or five together.

AMIRE JOANNET, *Early Sugar*. This fruit is described by Mr. Manning as small, of oblong form; light yellow skin, with a small portion of red; flesh white, and when not overripe juicy and good. It ripens in July, about ten days before the *Petit Muscat*, to which it is superior in flavor.

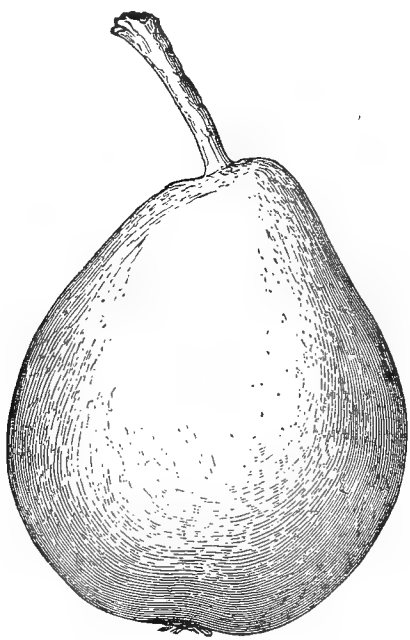
BELLE DE BRUXELLES, *Beauty of Brussels*, *Cours Complet*. A large early Pear of pyramidal form; skin a beautiful clear yellow, with red cheek; flesh white, fine, and of an agreeable flavor; ripe early in August.

BEURRÉ D'AMANLIS. A fine early Pear, imported from France by J. B. Mantel, of Bloomingdale, New York. Size large; form large-bellied; color green, changing to yellow, with a fine blush when fully ripe, and russet spots; flesh melting, juicy, sweet, and excellent; ripe in August and September. Tree vigorous and productive.

BLOODGOOD PEAR, *Early Beurré*. Fruit large; form nearly oval; skin a dull yellow, covered with dark russet spots; flesh

tender, melting, and pleasant. Mr. Manning says: "It comes early into bearing and produces abundant crops every year in August."

Crawford, *Early Crawford.* A fine early Scotch Pear, of medium size, round at the eye, diminishing at the stem; the skin is entirely of a light yellow; the flesh juicy, tender, and good. Ripens its fruit in August.



Theodore Van Mons.

Dearborn's Seedling. This variety originated in the garden of the Hon. H. A. S. Dearborn, of Roxbury. The tree is of vigorous growth; fruit of medium size, rounded at the crown, and regularly diminishes in a parabolic manner to the stalk; the skin is smooth, thin, green, with russet spots; at

maturity it turns to a delicate yellow; flesh very melting, and of the finest flavor. Ripens in August.

Early Rousselet, *Rousselet Hatif, Early Catharine.* This is a small Pear with a long curved neck; skin yellow, with brownish russet; flesh very fine, rich, and high-flavored; in August and September. The tree yields immense crops.

Honey Pear, *American Honey.* This Pear in size and shape resembles the Seckel; the skin is yellow, with a large portion of dull red; the flesh sweet, juicy, and good.

Jargonelle, English, *Beau Present, Saint Sampson, Grosse Cuisse, Madame Saint Lambert, Poire des Tables des Princes.* Fruit rather large, oblong, of a pale green color, a little marked with red; flesh melting, juicy, with a slightly acid, rich, and agreeable flavor. It ripens early in August, is one of the most productive of all Pears, and the very best in its season.

Julienne of Coxe, *L'Archeduc d'Été, Summer Beurré, Summer Doyenne, Summer St. Michael,* of Boston. *Bloodgood Pear of some collections.* Fruit medium size, smooth, bright yellow at maturity, with a faint blush next the sun; form rather ovate, tapering towards the stalk; flesh perfectly melting, rich, and juicy. The tree bears young, and most profusely, and matures its fruit in August and September.

Madeleine, *Magdalene, Citron des Carmes, Early Chaumontelle.* This Pear is of medium size, pale yellow, with an occasional blush next the sun; flesh white, melting, perfumed. A fine early fruit, ripening in July and August.

Rousselet de Rheims, *Musk or Spice Pear.* Fruit small, pyramidal, greenish yellow at maturity, but brown red next the sun, with russety spots; flesh half beurré, fine, very perfumed. Good to put in brandy, and to dry; in August and September

Sabine d'Été, *Bellissime d'Amour, Epargne of the French. English Red Cheek.* This Pear is of pyramidal form, terminating in a round blunt point at the stalk; color yellow, but fine scarlet next the sun; the whole surface smooth, regular, and

polished; flesh white, melting, juicy, and highly perfumed; the tree is an abundant bearer, and ripens its fruit in August.

Stevens's Genesee. Its color is mellow green, with russet blotches; its flesh is represented as white, juicy, and melting; flavor sprightly, rich, and very delicious. Time of ripening, towards the last of August.

Skinless Pear, *Poire sans Peau, Fleure de Guignes.* A small oblong Pear; the skin, which is very smooth and thin, is pale green, marbled with red and yellow; flesh crisp, sweet, and of pleasant flavor. The tree is very prolific, ripening its fruit in August.

Summer Franc Real, *Franc Real d'Été, Fondante, France Cannel, Gros Micet d'Eté, Milan Blanc, Prebles Beurré.* Fruit above medium size; shape oblong, thickest about one-third from the eye; skin yellowish green; flesh melting, rich, and excellent; ripe early in September.

Summer Melting, *Summer Beurré, Fondante d'Été.* An excellent summer Pear of pyriform shape; color yellow, tinged with brownish red; flesh soft, melting, and sweet. The tree bears young, and ripens its fruit in August.

Summer Rose, *Thorny Rose, Epine Rose, Poire de Rose, Rosenbirne Kraft.* A Pear of medium size, in form resembling an Apple; the skin is dull yellow, spotted with russet and marbled with red; a very productive variety, ripening its fruit early in August.

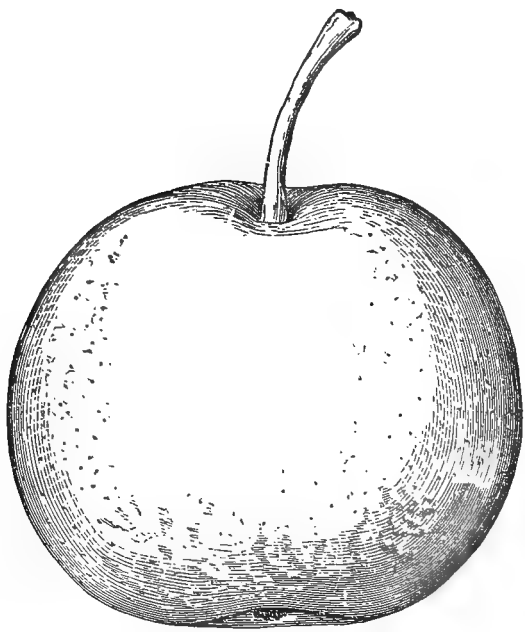
Williams's Bonchretien, *Bartlett, Williams's Early, Autumn Superb of Prince.* The fruit is large, oblong; the stalk thick and fleshy, an inch long; the color at maturity yellow, tinged with red; flesh whitish, very melting, and delicate; juice perfumed, sweet, and abundant. Tree very productive, and fruit ripe early in September.

AUTUMN FRUIT.

Andrews, *Amory, Gibson.* Fruit oblong; skin yellowish green, with a dull red cheek; flesh melting, juicy, and high-flavored. Mr. Manning represents it as "a very valuable pear,

producing its fruit early and abundantly." Ripe in September and October.

Autumn Bergamot, *Common Bergamot*, *York Bergamot*, *Bergamotte d'Automne*, *Andrews*. Fruit globular, depressed; skin rough, yellowish green, and dull brown, with greyish spots; flesh pale, melting, juicy, sugary, and perfumed; ripe in September and October. This variety has been cultivated in



Doyenne Robin.

England from the time of Julius Cæsar, and is still considered by many a first-rate Pear in its season.

Autumn Superb. This is a large Pear, full and round at the eye, diminishing to a point at the stem; the skin is yellow, mixed with dull red; the flesh melting and good. Mr. Manning says it bears young, and that the fruit ripens in October.

Belle et Bonne, *Belle de Flanders, Schone und Gute, Gracieuse.* Fruit very large, globular, depressed; the stalk long, skin greenish yellow, but next the sun yellow, with spots of russet; flesh white, sweet, exceeding rich, and agreeably perfumed. The tree is very productive, and the fruit ripens in September. This variety has been cultivated under the erroneous names of *Charles d'Autriche, Belle de Bruxelles,* and *Bergamotte Crassane,* which are distinct fruits.

Belle Lucrative, *Fondante d'Automne.* A beautiful Flemish Pear; middle-sized, roundish, tapering at the stalk; skin yellow, slightly russeted, and tinged with pale red; flesh melting, sweet, and juicy, with a slight musky perfume; early in October.

Beurré Bosc, *Calebasse Bosc.* Fruit large and very long; terminated with a crown, near three inches in diameter; somewhat calabash-formed; skin grey fawn-color, but russety-yellow at maturity; flesh white, melting, highly flavored, and delicious. It ripens in October.

Bleecker's Meadow, *Large Seckel of Prince. Meadow Pear of Winter & Co.* A native fruit of medium size, roundish form, and of a yellow color, tinged with dull red; the flesh melting, juicy, sweet, musky, and of delicious flavor. Ripe in October. A prolific bearer.

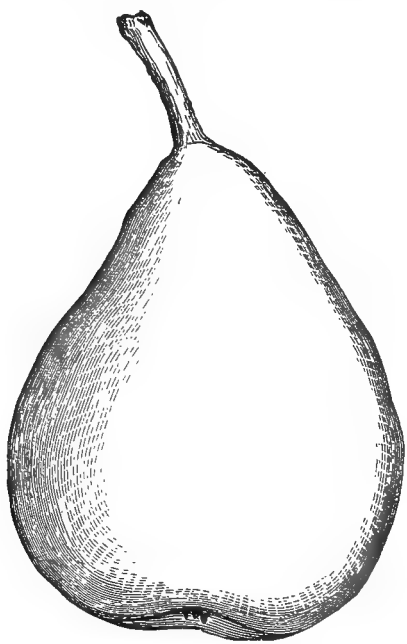
Brown Beurré, *Beurré Rouge, Beurré d'Or, Beurré Dorée, Beurre du Roi, Beurré d'Amboise, Isambert, Red Beurré, Golden Beurré, Pore d'Amboise.* This was formerly considered the best of all Pears in its season. Fruit rather large, of greenish yellow and dusky red color, covered with thin russet; flesh melting, buttery, rich, and excellent; at perfection in October and November.

Capiumont, *Beurré de Capiumont, Calebasse Vass.* This variety is much esteemed in the vicinity of Boston; fruit of medium size; skin yellow, tinged with fine red or cinnamon; flesh yellowish, melting, very rich, and high-flavored; in September and October.

Capsheaf. A medium-sized Pear, much cultivated near

Providence, Rhode Island ; the shape is rather globular ; skin a light cinnamon russet ; flesh white, melting, and juicy. The tree bears well, and the fruit ripens in October.

CHARLES D'AUTRICHE, *Gracieuse, Charles of Austria.* A fine and beautiful fruit, large, three and a half inches long, and three inches broad ; color greenish yellow with brown spots, and partially russeted ; flesh white, melting, juicy, and delicious ; ripe in October and good in November.



Beurré Nantais.

CUMBERLAND. A native fruit from Cumberland, Rhode Island, of large size and oblong shape ; skin orange color, with bright red cheek ; the flesh melting, juicy, and good ; ripe in October. The tree is of vigorous growth, and bears abundantly.

Cushing. A native fruit from Hingham, Massachusetts; of medium size and oblong shape; skin, when ripe, smooth, of a light yellow, mottled with dull red on one side; flesh white, melting, sprightly, and good. It comes early into bearing, and produces plenty of fruit in September and October.

Delices d'Ardenpont, *Delices d'Hardenpont de Toulouse. Beurré d'Ardenpont of some.* Fruit above medium size; oblong, pyramidal; skin yellow at maturity, and partially covered with a thin cinnamon-colored russet; flesh yellowish white, nearly melting; juice pleasant, sweet, and abundant; in October and November. The tree is a good bearer.

Dix. A native variety originating in the garden of Mr. Dix, in Boston; fruit large, oblong; skin, when ripe, yellow, with a blush of red; flesh melting, juicy and rich; in October and November.

Doyenne Santelete. A new, fine, handsome Flemish Pear; fruit above the middle size, pyramidally oblong; skin pale green, speckled with grey russet; flesh white, a little gritty, but tender; juice saccharine, with a slight musky perfume. The tree is hardy, and ripens its fruit early in October.

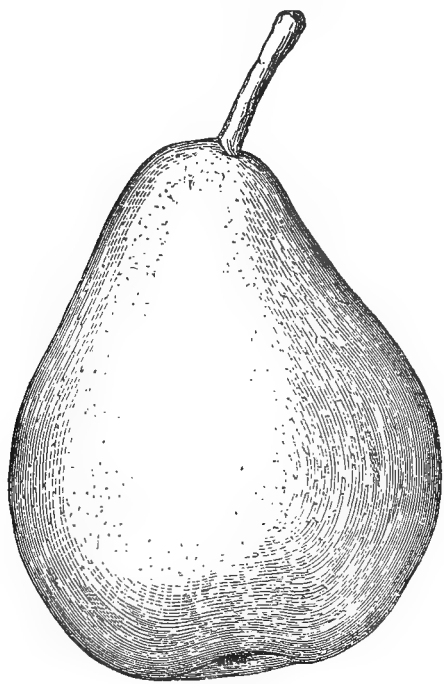
Duchess of Angouleme, *Duchesse d'Angoulême.* A Pear of first-rate excellence. Form roundish oblong, tapering towards the stalk; skin dull yellow, with broad russet patches; flesh white, rich, melting, very juicy, and high-flavored, with a most agreeable perfume. Specimens of this fruit have been shown in England, weighing twenty-two ounces; at perfection in October and November.

Flemish Beauty, *La Belle de Flanders. Imperatrice de la France. Brilliant, Bosch, Bouche Nouvelle.* A fine Flemish Pear in great repute; it is of large size, obovate, obtuse at the stalk; greenish-yellow russet, tinged with crimson; flesh rather firm, yellowish white, sweet, rich, and excellent; it ripens in October.

Frederick of Wurtemburg, *Roi de Wurtemburg, Capiumont of some collections.* A large and splendid Pear, of pyramidal form and fine yellow color, covered with beautiful crim-

son on one side; flesh melting and of delicious flavor. The tree bears while young, and very abundantly.

Fulton. A fine Pear of medium size, raised from seed by Mr. Fulton, of Topsham, Maine; shape roundish turbinate; skin dark yellow; russeted; flesh melting, juicy, and of delicious flavor; ripe in September, and lasts a month. The tree is a great and constant bearer, and highly deserving of cultivation.



Comte de Flander.

Gaisel's Bergamot, *Broca's Bergamot, Ives's Bergamot, Bonne Rouge.* Fruit varying from middle size to large; ovate flattened; color dull green, slightly red next the sun; flesh white, melting, sweet, rich and high-flavored. A delicious Pear; ripe in October, and good till Christmas.

Golden Beurré of Bilboa. Fruit of medium size, oblong, color a bright golden yellow, with patches of russet; melting and of fine flavor. A beautiful Pear-tree, a great bearer, and worthy of cultivation; ripe in October.

Gore's Heathcot. A native variety, highly esteemed in Massachusetts. Fruit of medium size; form long; skin of a uniformly light yellow; flesh melting, juicy, and high flavored. The growth of the tree is handsome and vigorous, producing abundant crops in September and October.

Green Sylvange, *Sylvanche Vert, Bergamotte Sylvange.* A most superior Pear, of medium size, skin rough and green, speckled with grey or black. The flesh is greenish near the skin, white in the centre, soft, saccharine and juicy; fruit in perfection from October to Christmas. The tree is a great bearer, and specimens of the fruit have been known to weigh thirteen ounces.

Hacon's Incomparable. *Norfolk Seedling, Downham Seedling of Winter & Co.* Fruit middle-sized, of pale yellow color, mixed with green, partially covered with orange russet; flesh yellowish white, slightly gritty, but very tender, juicy, sweet and rich; and possessing a high musky and perfumed flavor. The tree is a great bearer, and the fruit excellent. Ripens in November and December.

Harvard, *L'Epergne, Boston Eparne* This variety is highly prized in the Boston markets; fruit above medium size; oblong, swollen at the crown; skin russety yellow, tinged with red; flesh white, juicy, and melting. Ripens in September and October.

Henry the Fourth, *Henri Quatre.* Fruit of medium size, oblong, skin a dull yellow, mixed with brown and green; flesh yellow, rather gritty, juicy, and melting, with a peculiar rich flavor; ripe in September and October.

Long Green of Autumn, *Verte Longue, Mouthwater.* Mr. Manning says that this is one of the best of the old varieties; its form is very long; skin at maturity a light green; flesh white melting, and rich-flavored. The tree is of vigorous

growth, bears well, and the fruit is ripe in September and October.

Marie Louise, *Marie Chrétienne.* Fruit oblong, tapering towards both ends; size varying from medium to large; skin nearly smooth, yellowish green, and cinnamon-colored russet; flesh white, melting, juicy and rich. It ripens in October and November, and is an excellent fruit in its season.

Moor Fowl Egg. Fruit rather small, globular, ovate, swollen in the middle; skin orange-brown next the sun, with spots of russet; flesh yellowish white; a little gritty, but tender and mellow; juice saccharine, a little perfumed. This is a hardy Scotch variety; ripe in September, and good in October.

Napoleon, *Medaille, Sauvageon Liart. Roi de Rome, and Wurtemburg of Prince.* Fruit large, form of the Colmar; skin smooth; color bright green, but at maturity pale green; flesh very melting, with an unusual abundance of rich agreeable juice. At perfection in October and November.

Princess of Orange, *Princesse d'Orange, Princesse Conquette.* The fruit is roundish; the skin bright reddish-orange russet; flesh yellowish white, sugary and rich, in some seasons perfectly melting, but occasionally a little gritty. A beautiful Pear, and of good quality; in October.

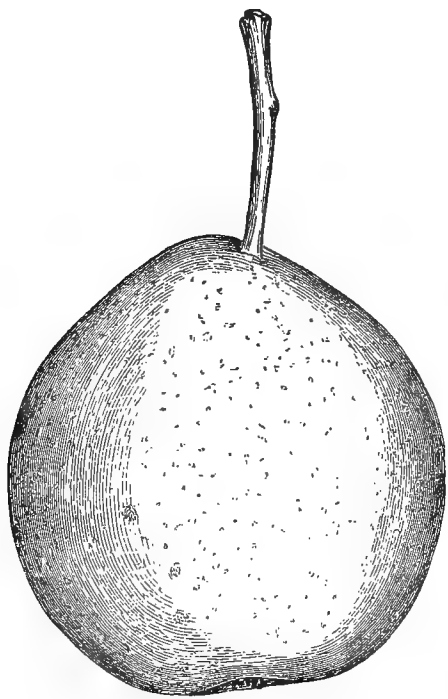
Seckel, *New York Red Cheek, Red Cheek Seckel, Sycle.* An excellent native fruit, in size rather small; color varying from yellowish to brownish russet, but bright red next the sun; flesh melting, spicy, and of a most extraordinarily rich flavor. This fruit grows in clusters, in great abundance, and is at perfection in September and October.

Swan's Egg, *Moor Fowl Egg of Boston.* Fruit small, of an oval, turbinate figure; color yellowish green, and dull russety brown; flesh tender and melting, with a rich, saccharine, musky flavor. An excellent fruit; ripe in October. The tree is remarkably tall, upright, vigorous, and productive.

Urbaniste, *Beurré du Roi.* The fruit is of medium size, pyramidally ovate; skin pale green, inclining to yellow, with green streaks; flesh white, but reddish yellow next the core; it is

quite melting, juicy, and very sweet, with a little perfume; it ripens from the middle of September to November.

Washington. A native fruit from New Jersey, of medium size and oval form; the skin is light yellow, covered with small brown spots, with a tinge of red; the flesh melting and of ex-



Des Nonnes.

cellent flavor. The tree bears well, and is worthy of general cultivation; fruit ripens in September.

White Doyenne, *Doyenne Blanc, Beurré Blanc, Bonne ente, St. Michael, Carlisle, Citron de Septembre, Kaiserbirne, Poire à courte queue, Poire de Limon, Poire de Seigneur, Poire Monsieur, Valencia, White Beurré, Virgalieu of some collections.*

Fruit pretty large; roundish oblong; skin pale citron yellow, with cinnamon-russet, speckled; flesh white, juicy, very buttery and delicious; ripe in September and October. An old and once celebrated variety, still admired by many, although excluded from some nurseries or cultivated under new names.

WILKINSON. A native Pear from Cumberland, R. I. The tree bears young, and is very fruitful; size above medium; form oblong; skin yellow, with a brownish blush near the sun; flesh white, juicy, and melting. At perfection in October and November.

WINTER FRUIT.

BEURRÉ D'AREMBERG, *Beurré d'Arembert, Duc d'Aremberg, Poire d'Aremberg, Beurre Deschamps, Beurré des Orphelins of Deschamps, Colmar Deschamps.* The English and French writers speak of this Pear as one of the best in cultivation. The tree is a great bearer, comes early into cultivation, and the fruit will keep till March. Fruit large, turbinate; skin of a delicate pale green, dotted with russet, which becomes of a deep yellow at maturity; flesh whitish, fine, very juicy, perfectly melting, and very extraordinarily rich, sweet, high-flavored, and excellent.

BEURRÉ DIEL, *Diel's Butterbirne, Dorothée Royale, Beurré de Yelie, Beurré Royale, Poire de Melon. Beurré Incomparable of some.* This ranks amongst the best of Pears. The tree is of vigorous growth; fruit, when in perfection, four inches long and three inches broad; the skin at maturity is bright orange, with reddish russet; flesh clear white, melting, juicy, and of a delicious aromatic flavor; from November to January.

BEURRÉ RANCE, *Beurré Epine, Hardenpont de Printemps.* This is said to be a first-rate Pear. The tree is vigorous, and a good bearer; fruit middle-sized, oblong; skin deep green, with russety specks; flesh green, melting, having a rich delicious flavor, with very little acid. It shrivels in ripening, but will keep till April.

BEZY VAET, *Bezy de Saint Vaast.* A most excellent Pear,

somewhat the shape of the Swan's Egg, but larger; skin dull green, covered with russety spots; flesh yellowish; perfectly melting, sweet, and agreeably perfumed; at perfection in November and December.

Catillac. Fruit very large, rather turbinate; pale yellow, stained with red; flesh firm and breaking; its flavor astringent; an excellent baking Pear; from November to April. Specimens of this variety have been known to weigh upwards of two pounds.

Chaumontel, *Bezy de Chaumontelle, Poire de Chaumontelle, Beurré d'Hiver.* This noble old variety is a fruit varying in size from large to very large; its color at maturity yellow, tinged with brownish red next the sun; its form variable; flesh melting, juicy, sweet, musky, excellent; in season from November to February.

Colmar, *Colmar Souverain, Poire Manne, Bergamotte Tardive, Incomparable.* This fruit is rather large; skin smooth, of a green color, changing to a yellow at maturity; form pyramidal; flesh melting, juicy, saccharine, and of excellent flavor. The fruit is in perfection from November to February.

Columbia, *Columbian Virgalieu.* A large native Pear of oblong or pyramid form, and fine yellow color, tinged with red; flesh rich, firm, juicy, and excellent; from November to January. Tree productive and of very handsome form.

Easter Beurré, *Bergamotte de la Pentecôte, Beurré d'Hiver de Bruxelles, Doyenne d'Hiver, de Bruxelles, Bezi Chaumontelle Très Gros.* Of all the late-keeping Pears this is considered the best (for England). Fruit large, roundish, oblong; color green, but yellow at maturity, with specks of rūsset brown; flesh yellowish-white, perfectly buttery and melting, also extremely high-flavored; it is eatable in November, and will keep till May; it is a most profuse bearer, on a quince stock.

Echassery, *Bezy de Chassery, Bezy de Landry, Poire d'Œuf, Ambrette, Walnut, Tilton of New Jersey.* Fruit middle size, of a roundish turbinate figure, something like a Citron, or the Ambrette; skin smooth, greenish-yellow, with grey specks;

flesh melting, juicy, and delicious; from December to March.

Glout Morceau, *Gloux Morceaux, Beurré d'Aremberg, Roi de Wurtemburg, Gloria, Colmar d'Hiver of Prince, and Beurré de Hardenpont of Downing.* A very large Belgic variety, of great excellence; fruit of ovalish form, pale green color inclining to yellow, with russety specks and blotches; flesh whitish, firm, very juicy, and excellent; in perfection from November to March.

Lewis. This variety originated on the farm of Mr. I. Lewis, of Roxbury, Mass. The size is medium; form somewhat globular; skin, when ripe, a greenish yellow; the flesh is white. Very melting, juicy, and excellent; from November to March, The tree grows quick, and bears abundance of fruit.

Louise Bonne de Jersey, *Louise Bonne d'Avranches.* A large Pear; oblong; a good substitute for the old *St. Germain;* skin yellowish green, sometimes tinged with red; flesh extremely tender, and full of an excellent saccharine, well flavored juice. A first-rate fruit, from October till after Christmas.

Newtown Vergalieu. A large Pear, of a yellow color, with a very short stalk; the tree grows very crooked and of an irregular form, bending by the weight of its fruit, which is excellent to preserve, or for baking; from November to January. Its productiveness renders it desirable in an orchard.

Passe Colmar, *Fondante de Panisel, Passe Colmar Gris dit Precet, Poire Precel, Passe Colmar, Epineux, Beurré Colmar Gris dit Precel, Beurré d'Argenson, Present de Malines, Colmar Souverain, Chapman's.* A most valuable Pear, of medium size, conical, flattened next the eye; skin at maturity yellowish, sprinkled with russet, a tinge of red next the sun; flesh yellowish, melting, rich, and excellent. The tree is a good bearer, and the fruit is in perfection from November to February.

Pound Pear, *Black Pear of Worcester, Parkinson's Warden, Grande Monarque, Livre, Groote Mogul, Gros Rateau Gris, Love Pear. Winter Bell of Downing.* Fruit very large, of a roundish turbinate figure; skin rough, covered with dull russet;

flesh hard and coarse, but excellent when baked or stewed in winter. Grafted on a Pear-stock, the tree bears so abundantly as to bend like a weeping willow. A specimen of this variety was exhibited at the sixteenth annual fair of the American Institute, October, 1843, weighing 33 oz.

Prince's St. Germain. Fruit about medium size; form obovate; skin russety yellow, with dull red cheek; flesh melting and good. Mr. Manning says that its abundant bearing, and its ripening gradually in the house during winter, render it a very valuable market fruit; good till after Christmas.

Surpasse Marie Louise, *Pitt's Prolific Marie, Pitt's Marie Louise.* A large Pear; oblong or calabash-formed; green, covered with brown-yellow russet; flesh melting and rich-flavored; ripe in October and November. It is a very prolific bearer.

Surpasse St. Germain. Fruit of medium size; round at the crown, tapering to the stem; it is of very irregular form; the skin is rough; color yellow, mixed with dull brown; flesh coarse-grained, sugary, and high flavored; good from November till January.

Surpasse Vergalieu. Fruit large, oblong, some specimens nearly round; the skin smooth, its color yellow, with a light red cheek; flesh rich, juicy, and delicious eating; in October and November. Mr. Manning says the tree bears young, yields large crops, and is worthy of extensive cultivation.

Unedales St. Germain, *Belle de Jersey.* A large fine pyriform Bell Pear, of a brownish-green color, with russety spots; flesh firm and high-flavored. It is considered a first-rate baking Pear, and will keep till March. Mr. Reid, of the Murray Hill Nursery, exhibited some fine specimens of this fruit at the sixteenth annual fair of the American Institute, October, 1843.

Vicar of Winkfield, *Bourgmestre of Boston, Monsieur le Curé, Dumas, Clion of Boston, according to the catalogue of Winter & Co., Flushing.* Fruit oblong, or pyramidal; skin russety-yellow, with ruddy color on one side; flesh firm,

sweet, and rich; good as a table fruit, from December to February. This variety is deserving extensive cultivation for its beauty, large size, keeping qualities, and productiveness.

WINTER NELIS, *Nelis d'Hiver*, *La Bonne Malinoise*, *Spreeuw*. All accounts agree that this is a most excellent Winter Pear; its size is above medium, somewhat oval; its skin green and russety, full of grey dots; flesh yellowish white, melting, high-flavored, with a musky perfume; at perfection in December and January.

PERRY PEARS.

BARLAND. This variety took its name from the original tree, growing in a field called Bare Lands, in Herefordshire, England. The fruit is smallish, of ovate form; skin dull green, russeted with grey. It is deemed excellent for perry.

HOLMORE. Fruit small globular; skin of a dingy yellowish green, tinged with red. Excellent perry is made of this variety in Herefordshire, England.

HUFFCAP. There are several varieties of Pears bearing this name, but the best perry is made of the true Herefordshire Huffcap. The fruit is middle-sized, of pale green color, marked with grey russet.

MONARCH. A new Pear, considered by Mr. Knight as without a rival. The tree is of rapid growth, and an abundant bearer; fruit large, of an extraordinary musky flavor, and deemed excellent for perry; good also for the table; from October to December and January.

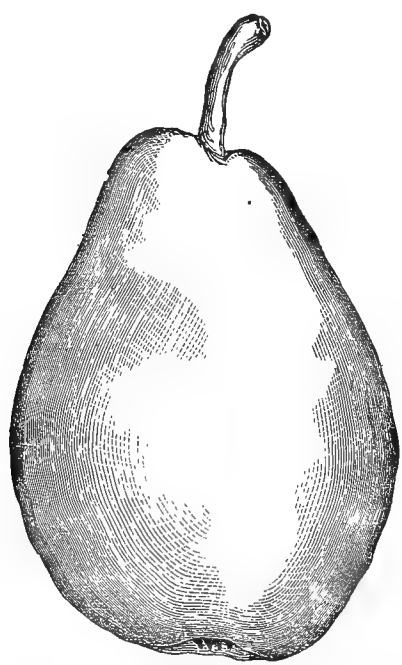
OLDFIELD. Fruit below the medium size, of pale green color, with russety spots. An excellent perry fruit. Specific gravity of its juice 1067. From this variety is made the celebrated Ledbury Perry.

LONGLAND. Fruit very handsome, much like the Swan's Egg in shape; skin bright gold color, tinged and mottled with a russety lively orange; specific gravity of its juice 1063. The tree is handsome and upright, and much cultivated in Herefordshire for perry.

Teinton Squash. Fruit middle-sized, of angular shape, skin a muddy russety green, marbled with dull orange, interspersed with ash-colored specks. The perry made from this fruit is of the very highest quality, something approaching in color and briskness to champagne, for which fine samples of it have sometimes been sold.

SELECT DESCRIPTIVE LIST OF PEARS.

The Ontario Pear. This variety promises well. Those persons who have raised it state that the trees grow vigorously,



Ontario.

and will doubtless make an excellent pear for market. It is a seedling of the Canandaigua variety.

Beurré d'Anjou. A first-rate autumn Pear, imported from

France by Col. Wilder, of Boston; fruit rather above medium size; obovate; skin greenish-yellow, a little clouded with russet; flesh very fine-grained, buttery, and melting, with a rich, sprightly vinous flavor.

Bezi de la Motte, *Bein Armudi*, *Beurré Blanc de Jersey* Fruit of medium size, bergamot-shaped, skin pale yellowish green, sprinkled with russet dots; flesh white, very fine-grained, buttery and juicy, with a sweet perfumed flavor; an old autumn variety, ripe in October.

Bishop's Thumb. An old English autumn Pear, usually considered first-rate; fruit rather large, oblong, and narrow; skin yellowish-green, dotted with russet, and tinged with red; flesh juicy, melting, and of a rich vinous flavor.

Bon Chretien Fondante. A new Flemish Pear, abounding with juice, and having a refreshing and agreeable flavor; skin pale green, mottled, and dotted with russet; ripe in October.

Buffum. A native orchard Pear, from Rhode Island, of the Doyenne family; fruit of medium size, oblong ovate; skin deep yellow, finely suffused with bright red and russet dots; flesh sweet and excellent; ripe in September.

Compte de Lamy, *Beurré Curte*, *Dingler*, *Marie Louise the Second.* A rich Flemish autumn Pear, of medium size, roundish obovate; skin yellow, with a brownish-red cheek, and russety; flesh melting and high-flavored.

Duchesse de Mars, Duchess of Mars. A French autumn Pear of medium size, obovate; skin dull yellow, partially covered with brown russet, with a dull red cheek; flesh very melting, and of a rich perfumed flavor.

Dunmore. A truly admirable and hardy Pear from the garden of the London Horticultural Society. Fruit large, oblong obovate; skin greenish, speckled with russet; flesh buttery, melting, and rich; ripe in September.

Eyewood. A hardy and prolific seedling of Mr. Knight's. Fruit of medium size, oblate or flattened; skin much covered with russet; flesh buttery, rich, and melting; in October and November.

Fondante Van Mons. An excellent melting Pear, introduced by Mr. Manning. Fruit of medium size, roundish; skin pale yellow; flesh white, juicy, sweet, and palatable; towards the end of October.

Jalousie de Fontenay Vendée. A fine autumn French Pear, of medium size; turbinate or obtuse pyriform; skin dull yellow and green, with red cheek, marked with russet; flesh melting, with a rich-flavored juice.

Lawrence. A seedling winter pear, from the nursery of Messrs. Wilcomb & King, Flushing. Fruit rather large, obovate; skin yellowish-green, with patches of brown; flesh melting and rich; from November to January.

Paradise d'Automne. A newly imported early autumn Pear, of large size; pyriform, tapering into the stalk; skin dull yellow, russeted; flesh white, fine-grained, melting, and luscious.

Petre. This fine autumn variety originated in the old Bartram Botanic Garden, near Philadelphia, from a seed furnished by Lord Petre of London, in 1735. Fruit of medium size, obovate; skin pale yellow, marked with greenish russet; flesh fine-grained and melting, with a perfumed high flavor.

Queen of the Low Countries, *Reine des Pays-Bas.* Fruit large, broad pyriform; skin dull yellow, mottled with russet, and overspread with fine dark red; flesh melting, with a rich sub-acid vinous flavor; early in October.

Rostiezer. A German Pear of medium size; oblong pyriform; skin yellowish-green, with reddish-brown cheek, and light-colored dots; flesh juicy, melting, sweet, and palatable; in September and October.

St. Ghislain. An excellent Belgium autumn Pear, introduced by S. G. Perkins, Esq., of Boston. Fruit of medium size, pyriform; skin pale yellow, with a few grey specks; flesh white, buttery, juicy, and of a rich sprightly flavor.

Thompson. This fine autumn Pear was named in honor of Mr. Robert Thompson, Superintendent of the London Horticultural Society's garden. Fruit of medium size, obovate;

skin pale lemon-yellow, dotted and streaked with russet; flesh white, buttery, and melting, with an agreeable aromatic flavor; tree hardy and prolific, producing its fruit in October and November.

Van Mons Leon Le Clerc. A splendid autumn Pear, imported by Col. Wilder of Boston. Fruit large, oblong-ovate; skin yellowish, mingled with brown; flesh yellowish-white, rich, and melting; in October and November.

Van Buren. A seedling raised by Gov. Edwards of New Haven. Fruit large, obovate; skin clear yellow, with a rich orange-red blush, and russet spots; flesh sweet and perfumed; excellent for baking and preserving.

SELECTING PEARS ADAPTED TO LOCALITIES.

The reader should bear in mind that many of the foregoing kinds of pears will succeed well in certain localities, and in other places be nearly worthless. Locality is everything with pears. The first question of importance is, when a person is about to plant pear-trees—Will that kind succeed in my locality?

The list of pears might be increased to several times the present length, but those desiring other varieties may find them minutely described in fruit catalogues of nursery-men in various parts of the country. New varieties are originated every year, some of which are much inferior to those that have been grown for a long period. Previous to selecting trees, extensive inquiry should be made, to ascertain, if possible, if there are any trees in that locality, and whether they bear abundantly, or yield but a small crop. Every beginner should heed this caution, and not select a variety that he knows nothing of, because some person has recommended it as worthy of cultivation.

FIRE-BLIGHT AND MILDEW.

The Pear, and also the Quince, and sometimes other trees, are subject to the fire-blight. This malady may be completely

checked on its first appearance, by cutting off and immediately burning the injured branches. Generally speaking, careful pruning, cleaning the bark all over with a brush, applying soap or tobacco-water to the leaves, and occasionally putting good earth and good manure to the roots, will remedy most diseases in fruit-trees. Removing them from a bad to a better soil will, of course, effect this, where it proceeds from a poorness of land; for the old adage, "Remove the cause, and the effect will cease," will be here exemplified. To cure the oozing of the gum, nothing more is necessary than to cut away the diseased parts of the bark; and by thus assisting nature in casting out the excrementitious or noxious juices, a complete cure may be effected.

When a tree is affected by mildew, let it be immediately sprinkled with soapsuds, and then be dusted over with sulphur and tobacco-dust, or snuff; at the same time dig around the tree, and examine the soil and subsoil; if it be wet and cankery, it should be taken away, and replaced with good healthy soil, and the ground drained. On the contrary, if the ground be dry, give it a plentiful watering. The same remedy may serve as a preventive of the extension of blight, if applied in time. When any canker is observed, the part affected must, at the time of pruning, be cut clean out, and the part thus dressed be pared, so that no water can lodge in the wound. When this is done, let a quantity of soot be mixed with water, and a little train-oil well worked among it, but so that the mixture finally remains stiff. This may be plastered over all the wounds that have been pruned. The application of this mixture keeps out the wet from the wounds, where it would be likely to lodge, and both the soot and oil promote vegetation. When trees are cankery from having a bad subsoil, it is in vain to apply any remedy till the ground is properly drained, some fresh soil mixed with the natural soil, and the tree replanted. When trees are known to be so situated as to be particularly liable to the attacks of insects or disease, they should be attended to at the time of winter or early

spring pruning, in order to destroy the insects in their larva state.

MANAGEMENT OF DWARF PEAR-TREES.

The two illustrations of dwarf pear trees shown under this head will furnish a fair idea of the manner of training dwarf-trees. The short lines will show where the branches must be shortened, or cut off, during the successive years. The knife must be employed freely in order to produce a beautiful dwarf-tree of any kind of fruit.

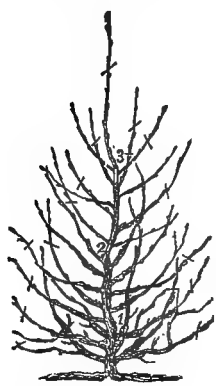


Fig. D.
How to produce a Dwarf Pear-Tree.

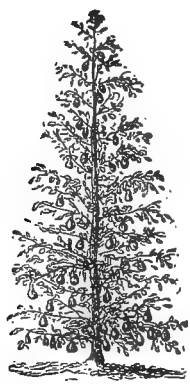


Fig. E.
Dwarf Pear-Tree.

Figure D represents a four-year pyramidal tree, pruned three times, each section being shown by the figures 1, 2, 3; and the lines across the branches represent the point where the knife is to be applied at the next pruning. Figure E represents a tree loaded with fruit, after the top has been pruned in the pyramidal form. Such trees are kept in form from year to year, by cutting and punching off the ends of the growing branches.

Plum. Prunier. *Prunus.*

The Plum-tree grows fifteen feet or more in height, branching into a moderately spreading head; the leaves are ovate, serrated, and on short petioles; petals white. The natural color of the fruit is generally considered to be black; but the varieties in cultivation are of yellow, red, blue, and green colors, and of different forms and flavors. There are several good sorts that grow wild in the hedges of Britain, and also in America, but its original country is supposed to be Asia. According to Pliny, it was taken from Syria into Greece, and from thence into Italy. There are many varieties cultivated in France; and in the London Horticultural Garden there are about three hundred sorts kept under name. The Green Gage is considered the best dessert Plum, and the Egg Plum for sweetmeats; but the Damson is the best baking Plum.

The Plum is said to succeed best in a lofty exposure, and may yield well in the mountainous parts of the United States. Plum-trees yield well near Albany, but the fruit is by no means plentiful in the vicinity of the city of New York. Like the Nectarine, it is subject to the attacks of the Curculio and other insects.

It has been observed that Plum-trees growing in frequented lanes or barn-yards, are more generally fruitful than those cultivated in private gardens or secluded situations. This circumstance is by some attributed to the jarring of the trees, by cattle and swine rubbing against them; thus causing the defective fruit to fall on the ground. Geese kept in orchards or fruit-gardens often prove beneficial; as they, by devouring the defective fruit and other corruptible matter, prevent the possibility of insects getting into the ground, so as to perpetuate their existence or multiply their species.

Cobbett attributes the scarcity of Plums in New York to neglect. In his American Gardener he asks: "How is it that we see so few Plums in America, when the markets are supplied

with cart-loads in such a chilly, shady, and blighty country as England?"

I would answer this query by informing the reader that the inhabitants of our parent country, with a view to derive the full benefit of the sun's rays for the cultivation of Plums, Peaches, Nectarines, and such other fruit as require extra heat, train their trees against walls, fences, or trellis-work; and from their having these means of support, gardeners have no inducement to plant them deeper than is necessary; whereas, from the circumstance of the American climate being sufficiently warm to ripen those fruits on standard trees, they are generally so cultivated. Many persons, to save the trouble of staking or otherwise supporting their trees, plant them too deep, and thus defeat the operations of nature. That this is a prevalent error has been shown in the articles Nectarine and Peach, to which the reader is referred for a more concise view of the subject.

New varieties of the Plum are produced from seed; and the old kinds are generally propagated by budding on stocks of free-growing Plums, in preference to grafting, because Plum trees are very apt to gum wherever large wounds are made in them. All the sorts produce their fruit on small natural spurs rising at the ends and along the sides of the bearing shoots of one, two, or three years' growth. In most sorts, new fruit branches are two years old before the spurs bear. The same branches and spurs continue fruitful, in proportion to the time which they take to come into bearing.

After the formation of the head is begun, it takes from two to six years before the different sorts come into bearing. Standards must be allowed to expand in free growth, occasionally pruning long ramblers and irregular cross branches. In annual pruning, thin crowded parts, cut away worn-out bearers, and all decayed and cankery wood. The Plum may be cultivated in small gardens, trained as an espalier, or to a close fence, like the Apricot. The tree is of further use than for its fruit as a dessert. The bark dyes yellow; the wood is used by turners;

and the dried fruit, or prune, is formed into electuaries and gentle purgatives. Prunes were originally brought from Damascus, whence the name *damson.*

MANAGEMENT OF PLUM-TREES.

Plum-trees require a soil free from superabundant moisture and well cultivated. The trees may be planted out in the spring, or in autumn, in ground that is kept clear from weeds and grass for at least four or five years. The soil for plums should have a good proportion of clay in it; and if clay predominates, mingle some sand with the clay. Wood-ashes, iron filings, iron turnings, and oxide of iron, which may be collected at the blacksmith's shop, are excellent for plum-trees. Coal-dust, soot, and all such materials, will promote the health of plum-trees and render them eminently productive.

SELECT DESCRIPTIVE LIST OF PLUMS.

American Yellow Gage, *American Wheat.* A beautiful medium-sized oval Plum, of a bright yellow color, when fully ripe; its flavor is rich, equal to the Green Gage. The fruit is not apt to crack nor to be attacked by insects. It is a very suitable variety to cultivate for the market; it ripens in August and September.

Apricot Plum, *Prune Abricote, Abricotée de Tours.* A large freestone Plum; its form is globular, depressed, divided by a deep suture; whitish yellow, but faint red next the sun, and covered with bloom; its flesh is firm, juicy, sweet, musky, and excellent; it ripens in August and September.

Bingham, *Bingham's Yellow Cling.* A delicious clingstone Plum, of large size and oval form; skin bright yellow, spotted and blotched with red; flesh yellow, rich, and delicious; ripening in August and September.

Bleecker's Gage. This fine freestone Plum is stated to have been raised by the Rev. Mr. Bleecker, of Albany, from the stone of a German Prune; it is a large globular fruit, of excellent quality; skin dark yellow, with red spots and blotches; the flesh is rich, saccharine, and juicy; in September.

Coe's Golden Drop, *Coe's Imperial, Bury Seedling, Golden Gage, Fair's Golden Drop.* Raised by Mr. Coe, Bury St. Edmunds, Suffolk, England. The tree is vigorous; fruit oval, of large size; skin greenish yellow, spotted with violet and crimson; the flesh, which separates from the stone, is of gold color, rich, and excellent; the fruit ripens at the end of September, and will keep several weeks. A first-rate fruit, and worthy of general cultivation.

Coe's Late Red, *Saint Martin, Saint Martin Rouge.* An excellent freestone Plum of medium size, in form almost round; its color is violet purple, with a partial degree of bloom; flesh rich, saccharine, and high flavored. It is one of the best of late Plums; ripening in October and November.

Columbia, *Columbian Gage.* A beautiful native clingstone Plum, of light purple color; the flesh is firm, of a greenish hue, with an abundance of rich-flavored juice. The tree is a great bearer, and ripens its fruit in August.

Cooper's Large Red, *Cooper's Large American, La Delicieuse.* This Plum is of extraordinary size, measuring within an eighth of two inches in each direction; the skin is of a fine dark purple color; the flesh is yellowish green, rich, juicy, and of pleasant flavor; the fruit makes excellent preserves, if gathered in August; its great defect is an inclination to rot, if left long on the tree.

Denniston's Superb is an excellent variety. The color is a pale yellowish-green, somewhat similar to the Green Gage plum. It was originated by Isaac Denniston, Albany, N. Y.

Diamond Plum. Some consider this as the largest Plum known; its color is a dark purple; in form it resembles the Magnum Bonum, but its flavor is considered rather superior; it ripens in September, and the flesh separates clear from the

stone. The tree, which grows vigorously, originated with Mr. Hooker, Kent, England

Denniston's Superb.

Downing's Emerald Drop. A beautiful clingstone Plum of medium size, oblong form, and green color; flesh firm and of delicious flavor; this variety originated at the Nursery of A. J. Downing & Co., Newburgh, State of New York.

Downton Imperatrice. A superior late Plum, of medium size, shaped similar to the Blue Imperatrice; skin dark yellow, and very thin; the flesh yellow, soft, juicy, with a high-flavored acidity; at perfection in October and November.

Drap d'Or, *Cloth of Gold, Mirabelle Double. Yellow Perdrigon of Winter & Co.* A small freestone Plum, of a round-

ish form and bright yellow color, marbled with red; flesh yellow, tender; juice sugary and excellent; ripe in July and August.

Duane's French Purple, *Dame Aubert Violet. Purple Magnum Bonum and Purple Egg of some collections.* A very superior clingstone Plum, of large size, and oblong form; the skin dark purple; flesh sweet, juicy, rich, and excellent; ripe in September. This variety, from being imported by Mr. Duane of New York, was named after him, as he had lost the original name.

Early Orleans, *New Orleans, Early Monsieur, Monsieur Hatif.* A fine freestone plum, above medium size; form round; its suture deep; color dark purple, covered with a fine bloom; flesh greenish yellow, of excellent flavor; sweet, combined with a pleasant acid; it ripens in August.

Early Tours, *Precoce de Tours, Early Violet.* The tree is vigorous and fertile; fruit small, oval, dark purple covered with fine bloom; flesh greenish yellow, tender, juicy, and of very agreeable flavor; one of the best early varieties, and very productive; ripe at the end of July.

Elfry. *French Cooper of Prince.* A native clingstone Plum, highly esteemed in Pennsylvania and New Jersey for its productiveness and other good qualities; the fruit is below medium size, of oblong shape and dark blue color; flesh firm, very rich and delicious; in September.

German Prune, *Prune d'Allemagne, Damas Gros, Quetsche, Quetzen.* The fruit of the Quetsche Plum is grown for the purpose of drying, and is considered the best for use as prunes; fruit below the middle size; of an oval figure; skin red and purple; flesh yellow; juice sweet, with a slight acid; ripe early in September.

Goliath, *Goliah, St. Cloud, Caledonian. Wilmot's Late Orleans.* This fruit is very large, sometimes weighing four ounces; the skin is a deep reddish purple; the flesh pale yellow, firm, and well flavored, but not rich, slightly adhering to the stone; the tree is a great bearer, and the fruit is much used for cooking; ripe in September.

Green Gage, *Great Queen Claude, Dauphine, Grosse Reine, Claude Abricot Vert, Verte Bonne, Gros Damas Vert.* A middle-sized round fruit, of a yellowish-green color, and purplish russety red next the sun; the flesh is of a greenish hue, melting, with an abundance of very sweet and highly perfumed juice, of an exquisite taste; it arrives at maturity towards the end of August.

Horse Plum, *Large Sweet Damson.* Fruit of medium size, oval, with a deep suture in the middle; skin dark red, inclining to purple when ripe; flesh greenish yellow; juice acid but agreeable. Quantities of these Plums are sold in the New York markets in August and September, for sweetmeats. The trees are generally raised from suckers; and Peaches, Apricots, and Nectarines will bud and thrive well on such stocks.

Huling's Superb, *Keyser's Plum.* This Plum is of monstrous size, and has been known to weigh nearly four ounces; it is of roundish form, and of a greenish-yellow color; the flesh sweet and excellent. It was raised from seed by Mr. Keyser, is of Pennsylvania, and brought into notice by Dr. Wm. Hulings, of that State.

Imperatrice, *Imperatrice Violette, Blue Imperatrice. Simiana of some collections.* One of the best of late clingstone Plums; fruit medium size, oval; skin rich deep purple, covered with bloom; flesh yellowish green, a little firm, very sweet, rich, and juicy; the fruit hangs long on the tree, and is at maturity in October and November.

Imperial Diadem, *Red Imperial, Red Diaper.* A fine fruit, admirably adapted for culinary purposes; shape oval; color pale red, but dark when mature; flesh yellow, and separates from the stone; juice plentiful when perfectly ripe, which is early in September; it is of good flavor, and highly perfumed.

Italian Damask, *Damas d'Italie.* This fruit is of medium size, nearly round, a little flattened at the base; its color blue or violet, and covered with a purple bloom; its flesh is yellow, rich, and juicy, and the tree, which matures its fruit in August, is very productive.

KIRKE'S PLUM. This variety is said to be as hardy and prolific as the Orleans, as handsome as the Damask, and as good as the Green Gage; fruit large, roundish; skin covered with a close, firm, azure bloom, through which appear a few golden specks; flesh greenish-yellow, firm, juicy, and rich; in perfection the early part of September.

LA ROYALE, *Royale.* A large and excellent freestone Plum, of a homely dull red color, but concealed by a thick violet or azure bloom; flesh fine, yellowish-green, firm, juicy, high-flavored, and delicious; a superior Plum; at maturity early in September.

LATE PURPLE DAMSON, *Purple Winter Damson, Blue Damascene, Blue Damson.* This variety is in great esteem for preserves, and generally commands a high price. It is of a dark purple color, covered with bloom; the flesh has rather too much acidity for a table fruit, but this tartness gives it an agreeable flavor when cooked; and if the fruit remains on the tree until November, it becomes sweet.

LAWRENCE GAGE, *Lawrence's Favorite.* A large round free stone Plum, of a yellowish-green color, tinged with red; flesh firm, and of delicious flavor, similar to the Green Gage. The tree is very fertile, and yields an abundance of fruit in August and September.

LUCOMBE'S NONESUCH. This Plum is large, compressed at the summit and base; its breadth is two inches; its color at maturity, as well as its form, resembles the Green Gage, but more streaked with yellow; flesh firm, rich, and juicy; at maturity in August; tree a good bearer.

MIMMS, *Mimms Plum, Diaprée Rouge.* The fruit is very large, a little oblong; color bright purple, covered with thick bloom; its flesh, which separates from the stone, is yellowish-green, tender, juicy, and very agreeably flavored; ripe in September.

MOROCCO, *Early Black Damask, Black Damascus, Black Morocco, Early Damask, Early Morocco.* This is considered one of the best of early Plums. The tree is very hardy and

productive; fruit middle-sized, roundish; skin deep blackish purple, covered with a light blue bloom; flesh greenish-yellow, juicy, rich, and high-flavored; ripe early in August.

NECTARINE PLUM, *Caledonian, Howell's Large, Prune Pêche, Jenkin's Imperial.* One of the most beautiful Plums known; large, nearly round; the skin at maturity varies from red to crimson, covered with azure bloom; flesh yellowish, coarse-grained, astringent; juice abundant, and of a mild, pleasant flavor; at maturity in July and early in August.

NEW YORK PURPLE, *Brevoort's Purple Bolmar, Brevoort's Purple Washington.* An excellent fruit, raised from a seed of Bolmar's Washington Plum, that had been impregnated with the pollen of the Blue Gage. The fruit is very large; skin brown red, covered with purple bloom: flesh yellow, of a rich and brisk flavor, and adheres to the stone; ripe towards the end of August.

OCTOBER GAGE, *Frost Gage.* A beautiful native fruit, a drawing of which has been taken from nature, and may be found in "Hoffy's Orchardist's Companion." Fruit of medium size; form oblong; color dark brownish-purple, covered with a black bloom; flesh firm and juicy; flavor sprightly and agreeable; ripe early in October.

ORLEANS PLUM, *Red Damask, Damas Rouge, Monsieur.* A well known and productive Plum; of medium size, and somewhat oval form; the skin is dark red, approaching to purple, with a thin blue bloom; flesh yellow, firm, and good, separating freely from the stone; ripe in August.

POND'S PURPLE, *Pond's Seedling.* A large round purple clingstone Plum, a native of Massachusetts; it is of peculiar rich flavor, not apt to crack, and is well adapted for the markets. The tree bears wonderful crops, which ripen in August.

PRINCE'S IMPERIAL GAGE, *Flushing Gage, Superior Green Gage, White Gage.* This tree was originated at the Flushing nursery, from a seed of the Green Gage. The fruit is one of the finest of its class; the skin at maturity is yellow, with a

whitish bloom; the flesh is rich, luscious, and of excellent flavor. It makes fine preserves, if gathered towards the end of August; at maturity in September.

Prince's Orange Egg. A large, splendid, orange-colored clingstone Plum, of oval form, and of peculiarly rich flavor; ripe in August. The tree yields abundant crops of truly beautiful fruit, which is never attacked by insects, as many kinds are.

Prune Suisse, *Semiana, Prune d'Altesse, Monsieur Tardif, Swiss Prune.* Fruit very handsome, round, flattened; color varying from bright amber to deep red, and covered with azure bloom; flesh yellow, delicious, melting, and closely adheres to the stone; juice very abundant. An excellent fruit; ripening in September.

Purple Gage, *Blue Gage, Reine Claude Violette, Die Violette Königinn Claudian.* This fruit is of medium size, almost round, and may be considered as one of the finest varieties; its skin is of a violet purple color, with pale yellow dots, and covered with a light blue bloom; flesh greenish-amber, rich, saccharine, and high-flavored: at maturity in August, and good until October.

Queen Victoria, *Sharp's Emperor, Dennyer's Victoria.* An excellent freestone Plum, as large as the *Red Magnum Bonum;* of a roundish oval form, and red color, covered with a fine bloom; the flesh is firm, rich, juicy, and delicious. The tree grows very strong, and yields abundant crops in September.

Red Diaper, *Diaprée Rouge, Roche Carbon.* One of the most beautiful Plums known; form oval, above medium size; color bright red; flesh greenish-yellow, soft and sweet, separating from the stone; the fruit makes excellent prunes, if gathered early in September; and like the Imperatrice, will hang some time on the tree.

Red Magnum Bonum, *Red Imperial, Imperial Violette of the French, Purple Egg of Prince and others.* A large, oval Plum, of deep red color, covered with blue bloom; the flesh, which parts from the stone, is harsh and acid; consequently good for cooking, preserves, etc.: in September and October.

Red Perdrigon, *Perdrigon Rouge.* An excellent Plum, of the first class; of medium size, oval shape, and fine red color, with gold-colored dots, and a fine bloom; flesh bright yellow, transparent, and separates from the stone; juice sweet and delicious; ripe early in September. It makes excellent prunes, not inferior to the White Perdrigon.

Red Queen Mother. The Plum is of medium size, its color bright red and yellow, somewhat spotted, and covered with pale bloom; its flesh is yellow, sweet, and excellent, ripening early in September. A very productive variety, and highly deserving of cultivation.

Royal de Tours. The tree is of extraordinarily vigorous growth; its principal stem rises vertically; the fruit is globular, of medium size; red violet color, and covered with azure bloom; flesh yellow, fine, good; juice abundant and sweet: ripens early in August.

Saint Catharine. A medium-sized, oblong fruit; skin bright gold color, spotted with red at maturity, and covered with bloom; flesh yellow, tender, sweet, and fine flavor; ripens early in September, and will hang some time on the tree. A good market Plum, for which purpose it is much cultivated.

Smith's Orleans. This variety is held in great esteem as a market fruit; the trees are free from gum and insects, and yields abundant crops of large freestone Plums, of an oval form and purple color. The fruit ripens gradually in September.

Surpasse Monsieur. A large fruit, of oval form, and of a dark red purplish color, raised by a Mr. Noisette; it is said to be more beautiful and perfumed than the Monsieur, and the tree yields suckers, which produce fruit in all its beauty and excellence: in September.

Virginale, *White Virginal.* This fruit ranks among the best of Plums; its shape is round; color yellowish, touched with violet or rose, and covered with dense bloom; flesh melting, juice abundant, and very agreeable; it adheres to the stone: ripe in September.

Washington, *New Washington, Bolmar's Washington,*

Franklin. A very large, globular Plum, inclining to oval; color greenish-yellow, with crimson specks, covered with a rich bloom. This Plum has sometimes weighed over four ounces; its flesh is yellow, firm, sweet, and delicious: in August. This variety originated in New York, from suckers of an old root, the tree of which had been some time previously destroyed by lightning.

White Magnum Bonum, *Yellow Magnum Bonum, Grosse Luisante, Imperiale Blanche, Egg Plum, White Mogul, White Holland.* This fruit is of extraordinary size; oval, yellow, covered with pale bloom; the flesh yellow, firm, closely adhering to the stone; excellent for cooking and preserves: in September.

White Perdrigon, *Perdrigon blanc.* A middle-sized, oblong fruit, of a pale yellow, with red spots, and covered with white bloom; flesh yellow, saccharine, and juicy, separating from the stone: it ripens in August.

Autumn Gage, *Roe's Autumn Gage.* A new late Plum, raised by William Roe, Esq., of Newburgh. Fruit of medium size, oval; skin pale yellow, with whitish bloom; flesh juicy, and of delicate pleasant flavor: in September.

Buel's Favorite. An excellent clingstone Plum, raised by Isaac Denniston, of Albany. Fruit pretty large, ovate; skin pale green, sprinkled with lighter dots, and a little red; flesh juicy and high-flavored: end of August.

Cruger's Scarlet, *Cruger's Seedling.* A seedling raised by Henry Cruger, Esq., of New York. Fruit rather larger than the Green Gage, roundish, oval; skin a lively red, covered with thin blue bloom; flesh of a sprightly flavor.

Damson, *Common Damson, Purple Damson, Black Damson.* A favorite fruit with old housekeepers for preserves, of which there are many varieties, which from being frequently raised from seed vary somewhat in character. They ripen in succession from September to November.

Denniston's Superb. Fruit round, a little flattened; skin yellowish-green, with purple blotches, overspread with a thin

bloom; flesh very thick, juicy, with a rich vinous flavor; a freestone, ripening towards the end of August.

Ickworth Imperatrice, *Knight's No.* 6. A choice seedling from Mr. Knight, of Downton Castle. Fruit above medium size, obovate; skin purple, embroidered with streaks of golden fawn-color; flesh juicy and rich: it ripens early in October, and may be kept till Christmas if laid away in paper.

Isabella. An attractive-looking English clingstone Plum of medium size; skin dark red in the sun, paler in the shade, and dotted; flesh yellow, rich, juicy, and of delicious flavor: towards the end of August.

Jefferson. A Plum of high merit, raised by the late Judge Buel. Fruit large, oval; skin golden yellow, with a purplish red cheek, covered with a thin bloom; flesh rich, juicy, and high-flavored: towards the end of August.

Lombard, *Bleecker's Scarlet, Beeckman's Scarlet.* This variety was brought into notice by Mr. Lombard, of Springfield, Massachusetts. Fruit of medium size, roundish oval; skin delicate violet, dotted with red; flesh yellow, juicy, and pleasant: in August.

Orange Plum, *Orange Gage.* A plum of extraordinary size from the garden of Mr. Teller, of Rhinebeck, New York. Skin bronze-yellow, clouded with purple; flesh deep yellow, a little coarse-grained, but of a pleasant acid flavor: ripens the last of August.

Purple Favorite. This variety was first introduced by A. J. Downing, Esq., of the Newburgh Nursery. Fruit above medium size, roundish ovate; skin light brown in the shade, purple in the sun, dotted with golden specks and thin light, bloom; flesh pale green, very juicy, tender, luscious, and melting: ripens towards the last of August.

Quince. Coignassier. *Cydonia.*

The Quince is of low growth, much branched, and generally crooked and distorted. The leaves are roundish or ovate, entire, above dusky green, underneath whitish, on short petioles. The flowers are large, white, or pale red, and appear in May and June. The fruit, a pome, varying in shape in the different varieties, globular, oblong, or ovate. It has a peculiar and rather disagreeable smell, and austere taste. The fruit takes its name from being a native of the ancient town of Cydon, in the Island of Crete. Some suppose it to be a corruption of *Malus colonea*, by which the Latins designated the fruit. It is used as a marmalade for flavoring apple-pies, and makes an excellent sweetmeat; and it has the advantage over many other fruits for keeping, if properly managed.

Of the several sorts, the following are in greatest esteem: 1. The oblong, or Pear Quince, with ovate leaves, and an oblong fruit lengthened at the base. 2. The Apple Quince, with ovate leaves, and a rounder fruit. 3. The Portugal Quince, the fruit of which is more juicy and less harsh than the preceding, and therefore the most valuable. It is rather a shy bearer, but is highly esteemed, as the pulp has the property of assuming a fine purple tint in the course of being prepared as a marmalade. 4. The mild or eatable Quince, being less austere and astringent than the others. 5. The Orange Quince, a very handsome fruit of peculiar rich flavor. 6. The Musk or Pineapple Quince, very large and beautiful.

The Quince produces the finest fruit when planted in a soft, moist soil, and rather shady, or at least sheltered situation. It is generally propagated by layers, and also by cuttings, and approved sorts may be perpetuated by grafting. In propagating for stocks, nothing more is necessary than to remove the lower shoots from the layer, so as to preserve a clear stem as high as the graft; but for fruit-bearing trees, it is necessary to train the stem to a rod, till it has attained four or five feet in height, and can support itself upright.

When planted in an orchard, the trees may be placed ten or twelve feet apart. The time of planting, the mode of bearing, and all the other particulars of culture, are the same as for the Apple and Pear. The chief pruning they require, is to keep them free from suckers, and cut out decayed wood. The ground should be kept free from grass and weeds; and if the soil be poor, swine manure, chip dirt, or any other kinds of rich manure should be forked into the ground around the trees. If the soil be heavy, containing a large proportion of clay, let a load of sand or fine gravel be spread around each tree, or mingled with the earth before the trees are transplanted.

Raspberry. Framboisier. *Rubus.*

There are several species of the *Rubus* found wild in various parts of Asia, Europe, and America, some of which have upright stems, others prostrate. The American Stone Bramble, and also the common Blackberry, Dewberry, and Cloudberry, are of this family. The *Rubus idæus*, or common Raspberry, grows spontaneously in the province of New Brunswick, and in various parts of the United States, but most of the cultivated varieties are supposed to have originated in England. Loudon describes the true Raspberry as having "stems which are suffruticose, upright, rising to the height of several feet, and are biennial in duration; but the root is perennial, producing suckers which ripen and drop their leaves one year, and resume their foliage, produce blossom shoots, flower, and fruit, and die the next. The leaves are quinate-pinnate; the flowers come in panicles from the extremity of the present year's shoots; they are white, appear in May and June, and the fruit forms about a fortnight afterwards."

The fruit is grateful to most palates, as nature presents it, but sugar improves the flavor; accordingly it is much esteemed when made into sweetmeats, and for jams, tarts, and sauces.

It is fragrant, sub-acid, and cooling; allays heat and thirst. It is much used in distilling. "Raspberry syrup is next to the Strawberry in dissolving the tartar of the teeth; and as, like that fruit, it does not undergo the acetous fermentation in the stomach, it is recommended to gouty and rheumatic patients."

Nichol enumerates twenty-three species and varieties of the cultivated Raspberry, and twenty-one of the *Rubus ronce*, or Bramble; in the latter are included the American Red and Black Raspberry, the Long Island and Virginian Raspberry; also the Ohio Ever-Bearing, and the Pennsylvania Raspberry. The English varieties are, Early Small White; Large White; Large Red; most Large Red Antwerp; Large Yellow Antwerp; Cane, or smooth-stalked; Twice-bearing White; Twice-bearing Red; Smooth Cane, twice-bearing; Woodward's Raspberry; Monthly, or Four Season; Dwarf Red Cane; Victoria Raspberry; Large Red Franconia; Mason's Red Cluster; M'Keon's Scarlet Prolific; Chili Red; Cornish Red; Cox's Honey; Brentford Red; Brentford White; Flesh-colored; Barnet Red; Bromley Hill; Cretan Red; Prolific Red; Canada Purple; Rose-flowering, etc.

HOW RASPBERRIES ARE PROPAGATED.

The varieties can be perpetuated by young sucker-shoots, rising plenteously from the root in spring and summer. When these have completed one season's growth, they are proper to detach with roots for planting, either in the autumn of the same year, or the next spring, in March or early in April. These new plants will bear some fruit the first year, and furnish a succession of strong bottom-shoots for full bearing the second season. New varieties are raised from seed, and they come into bearing the second year. Some of the American species are cultivated by layers, which produce fruit the same year.

Raspberry beds are in their prime about the third and fourth year; and, if well managed, continue in perfection five or six years, after which they are apt to decline in growth,

and the fruit to become small, so that a successive plantation should be provided in time. Select new plants from vigorous stools in full perfection as to bearing. Be careful to favor the twice-bearers with a good mellow soil, in a sheltered situation, in order that the second crop may come to perfection.

When Raspberries are cultivated on a large scale, it is best to plant them in beds by themselves, in rows from five to seven feet apart, according to the kinds. In small gardens they may be planted in detached stools, or in single rows in different parts of the garden, from the most sunny to the most shady aspect, for early and late fruit of improved growth and flavor. It is requisite to cut out the dead stems early in the spring, and to thin and regulate the successional young shoots. At the same time, the shoots retained should be pruned at the top, below the weak bending part, and some rotten dung worked in around the roots of the plants. Keep them clear of weeds during the summer, by hoeing between the rows, and eradicate all superfluous suckers; but be careful to retain enough for stock in succeeding years.

The Antwerp and other tender varieties of the Raspberry are liable to be more or less injured by the severity of our winters; to prevent which, they should be protected by bending them down to the ground late in autumn, and covering them with earth five or six inches, sloping it off so as to prevent injury from rain or snow.

In order to obtain a good supply of Raspberries in the autumn, cut down some of the twice-bearing varieties close to the ground, which will occasion strong suckers to shoot up, that will yield an abundant crop of fruit at a season when other varieties are not attainable.

SELECT DESCRIPTIVE LIST OF RASPBERRIES.

American Black, *Black Cap.* This fruit is of smallish size, and ripens in June and July. It is a favorite with some.

American Red, *English Red, Common Red.* This variety is much cultivated for the market. The fruit ripens in June and July successively.

Antwerp Red, *Large Red Antwerp, Howland's Red Antwerp, Burley.* This species is rather tender, on which account

The Red Antwerp Raspberry.

the branches must be bent down in autumn, and covered with soil. The fruit is large and beautiful, of delicious flavor, and quite fragrant; in June and July.

Antwerp White, *Yellow Antwerp.* This is also tender or half hardy, but very prolific; the fruit is large, of a pale yellow color, and much esteemed. It ripens in June and July.

Barnet, *Cornwallis Prolific, Lord Exmouth, Large Red.*

This is considered a first-rate fruit, and yields abundantly; in June and July.

Beehive. A new variety, introduced by Messrs. Winter & Co., of the Linnæan Botanic Garden, Flushing. The fruit is large, of round shape and red color; ripe in July.

Cornish, *Large Cornish.* A hardy and highly productive variety, yielding an abundance of red berries in June and July.

Double-Bearing Red, *Twice-Bearing.* This species is very prolific, producing its first crop in July, and another in October.

Flesh-Colored, *Framboisier Couleur de Chair.* A new variety, imported by W. R. Prince & Co. from France. It is described as a highly flavored and much-esteemed fruit.

Franconia, *Red Franconia.* This variety is in great repute for its productiveness and the fineness of its fruit, which ripens gradually in July.

Monthly or Four Seasons, *Perpetual Bearing.* This species, if planted in a shady situation, will produce successional crops throughout the summer.

Red Tall Cane. There are several species of the Cane Raspberry, some of which are worthless. The Tall Red Cane produces fine fruit in July and August, and very frequently in autumn.

Victoria. This Queen of Raspberries has been imported by W. R. Prince, and plants are offered for sale at his nursery at Flushing, for twenty-five cents each.

BLACKBERRIES.

This kind of fruit requires about the same kind of management that is essential to raise good raspberries. Clean cultivation and rich ground, with all the old canes removed annually, will seldom fail to secure a bountiful crop. The illustrations of different varieties are not overdrawn as to size. Indeed, in

many instances, the fruit grows larger than it is here represented. It must be borne in mind that in order to raise large berries, the soil must be worked deep and enriched with the best kind

The High-bush Blackberry.

of fertilizing material, and the surface mulched in hot weather. Blackberry bushes should be kept as clean of grass and weeds as growing corn or cabbage.

The Kittatinny Blackberry was originated by E. Williams, Montclair, New Jersey, and sustains the reputation of being one of the best, and with some fruit culturists the very best, blackberry in the country. It is a great bearer, endures our cold winters well, and sells quickly in market. We consider it superior to the celebrated New Rochelle Blackberry either for the table or for market.

Strawberry. Fraisier. *Fragaria.*

The *Cherry*, the *Currant*, and *Strawberry* red,
To the rich and the poor their refreshments have shed;
Pomona has scatter'd her blessings abroad,
The full-bearing branches bend down with their load.

This is a genus of fruit-bearing herbaceous plants, of which there are few in the vegetable kingdom that can equal the Straw-

Wilson's Albany Strawberry.

berry in wholesomeness and excellence. The fruit is supposed to receive its name from the ancient practice of laying straw

between the rows, which keeps the ground moist and the fruit clean. They are natives of temperate, or cold climates, as of Europe and America. The fruit, though termed a berry, is in botanical language a fleshy receptacle, studded with seeds. It is universally grateful, alone or with sugar, cream, or wine, and has the property, so valuable for acid stomachs, of not undergoing the acetous fermentation. Physicians concur in placing Strawberries in their small catalogue of pleasant remedies; as having properties which render them in most conditions of the animal frame positively salutary. They dissolve the tartareous incrustations of the teeth, and promote perspiration. Persons afflicted with the gout have found relief from using them very largely; so have patients in case of the stone; and Hoffman states that he has known consumptive people cured by them. The bark of the root is astringent.

CULTIVATION AND MANAGEMENT.

In cultivating the Strawberry an open situation and rich loamy soil, rather strong, are required for most varieties; and from their large mass of foliage and flowers, they must, till the fruit is set, have copious supplies of water. The row culture is best calculated to produce fruit; and frequent renewal insures vigorous plants as well as large fruit. Some plant them in single rows, from eighteen inches to two feet apart, according to the sorts. Others form a bed with four rows. If several beds be intended, a space of two or three feet may be left between each bed as a path; and in the second or third season the paths may be manured and dug, to admit the runners taking root. By this means a renewal may be made so often; and the old stools being taken away, leave spaces between the beds as before. Or new plantations may be made every season; because, after the roots are fairly established, they multiply spontaneously, as well by suckers from the parent stem as by numerous runners; all of which, rooting and forming a plant at every joint, require only removal to a spot where there is room for them to flourish. If the runners be taken off, and planted

small. A native of Britain. Some of the varieties are in in August and September, they will produce fine fruit the following season, and will bear in full perfection the second summer. Some, however, prefer spring planting, which answers very well if done in damp weather.

A plantation of the Alpine yields fruit the same year that it is made. The Wood and the Alpine are often cultivated from seed, which generally produces fine fruit. The other species are uniformly propagated by offsets, except the intention be to try for new varieties. The Alpine and Wood species may be planted in situations rather cool and shady, in order that they may produce their fruit late in the season, which is desirable. The Strawberry, with a little trouble of choosing a succession of sorts, may be forced so as to be had at the dessert every month in the year; though during the winter months it has not much flavor.

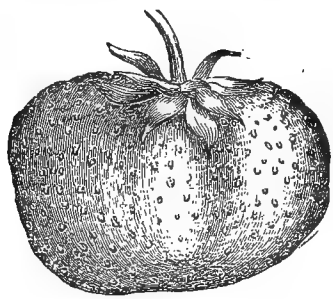
Some gardeners lay straw an inch or two thick over their beds in March, and set fire to it, in order to promote a stocky growth of plants and early fruit; others recommend mowing off the tops of such as are not required to fruit early, while they are in blossom, with a view to obtain a crop of Strawberries late in the season.

The London Horticultural Catalogue contains the names of about one hundred and fifty varieties of all the species, which are classed according to their nature, color, etc. Class 1. Scarlet Strawberries; 2. Black Strawberries; 3. Pine Strawberries; 4. Chili Strawberries; 5. Hautbois Strawberries; 6. Green Strawberries. 7. Alpine and Wood Strawberries. To select all the most esteemed from this, or any other extensive catalogue, is a difficult task. The following description of species and varieties may serve to direct the choice.

SELECT DESCRIPTIVE LIST OF STRAWBERRIES.

The Wood Strawberry, *Fragaria vesca*, with oval serrated leaves; the fruit red, white, and green, which is round and

great repute, as they are very productive and continue long in bearing.



Triomphe de Gande.

The Scarlet. *Fragaria Virginiana*, with leaves like the preceding; the fruit roundish and scarlet-colored. A native of Virginia. Varieties—Methven Scarlet, Knight's Scarlet, Austrian Scarlet, Early Scarlet, Wilmot's Late, Common Late, Wilmot's Early Scarlet, etc.

The Roseberry, *Fragaria, Virg. Var.* An Aberdeen seedling, introduced in 1810. The plants have few roundish leaves, larger fruit than the scarlet, and are very prolific; continues bearing till August.

The Black Var. *Downton.* Dark Scarlet Strawberry, originated by Mr. Knight. The fruit is large, irregular, and cock's-comb-like; plant hardy and prolific.

The Carolina *Fragaria Carolinensis.* Color dark red; a native of America. There are several choice varieties of this fruit, as—Elton's Seedling, Keen's Seedling, Mulberry, Wilmot's Black Imperial, Blood Pine, North's Seedling, Knevet's Seedling, etc.

The Musky, or Hautbois, *Fragaria elatio*, with oval, rough, javelin-edged leaves. A native of Britain. Varieties—Black Hautbois, White Hautbois, Globe Hautbois, Conical Hautbois,

Double or Twice Bearing, producing delicious fruit in spring and autumn.

The Chili, *Fragaria Chiliensis*, with large, oval, thick, hairy leaves, and large flowers; the fruit large and very firm; a native of South America. Wilmot's Superb, or Large Cock's comb Scarlet, Knight's Seedling and Greenwell's New Giant, are highly esteemed varieties.

Keen's Imperial or New Chili, *Fragaria Chili var.*, raised by Mr. Keen, of Isleworth; a most excellent bearer, ripening early. The fruit is very large, the flesh firm and solid, without any separate core; color scarlet.

The Alpine or Prolific, *Fragaria Collina*, commonly lasts from June till November, and in mild seasons till near Christmas; the varieties of this fruit are red and white. Natives of the Alps of Europe.

The One-Leaved, *Fragaria monophylla.* The pulp of the fruit pink-colored. A native of South America.

The following varieties have been lately propagated from some of the above species:—

Bishop's Orange, *Bishop's Globe, Bishop's New.* Fruit large, of roundish or conical form; orange-scarlet color, and very delicious flavor; ripe early in July.

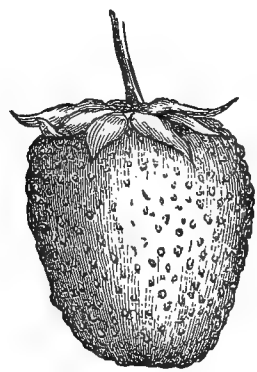
Garnstone Scarlet. A fine, highly esteemed scarlet variety, of large size, roundish form, and peculiarly rich flavor, which ripens early in June.

Elton, *Elton Pine Strawberry.* Fruit very large; form heart-shaped, or obtusely conical; color bright dark-scarlet; rosy red; flavor very rich, spicy, aromatic, and agreeable. A beautiful drawing of this fruit is given in "Hoffy's Orchardist's Companion," from which the above description was taken.

Grove End Scarlet, *Atkinson's Scarlet.* A Seedling raised by Wm. Atkinson, at Grove End, Marylebone, in 1820; fruit large, oblate, of a bright vermilion color, and rich flavor; ripe by the middle of June.

Hovey's Seedling. This favorite variety was raised by Messrs. Hovey & Co. of Boston, in 1834. Fruit very large;

form round or slightly ovate, conical; color deep shining red, paler in the shade; flesh scarlet and firm, abounding in an agreeable acid and high-flavored juice; not surpassed by any other variety; ripe early in July.



Scott's Seedling.

Hudson's Bay, *American Scarlet, Velvet Scarlet, Large Hudson.* Fruit large, of ovate form; represented by Mr Downing as the best for market; early in July.

Monthly Red Alpine. Fruit of medium size, and conical. Continues bearing fruit moderately from June till winter.

Myatt's British Queen. The fruit of this celebrated variety is said to be of monstrous size; in form roundish, and in quality first-rate; about the middle of July.

Myatt's Pine. A medium-sized fruit of ovate form, and very rich-flavored; ripening in July.

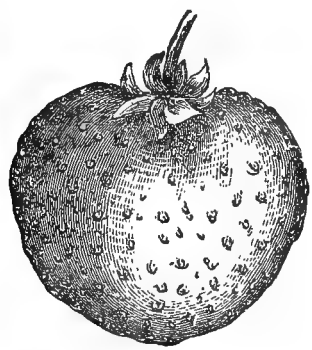
Prince Albert. A new variety raised in London, represented as a large fruit of ovate form, very splendid in appearance and delicious in flavor; ripe in July.

Prince's New Pine. An excellent seedling variety of large size and ovate form. Raised by Wm. R. Prince, of Flushing; ripe early in July.

Roseberry Montevideo, *Montevideo Early Scarlet.* An

improved American Seedling, from the common Roseberry: of large size, conical form, and fine flavor; ripe early in July.

Swainstone's Seedling. This variety is described as large, ovate, and of the very first quality, ripening one crop early in June, and a second crop in autumn.



Trolloppe's Victoria.

Victoria, *Higgin's Seedling.* The fruit of this variety is greatly esteemed; it is extra large, of roundish form, and exquisite flavor; early in July.

Warren's Seedling, *Warren's Methven.* This is represented as a peculiar fruit, being of large size, and in form nearly flat; it is moreover of a rich pineapple flavor, and yields abundantly throughout the month of July.

White Bush Alpine, *New White Alpine* A medium-sized berry, of ovate form and agreeable flavor; the plant has no runners, and ripens its fruit in June and July.

Walnut. Noyer. *Juglans.*

From the circumstance of our having an abundance of the fruit, and from the many species of this genus of trees growing spontaneously around us, it is presumed that the culture of the

Juglans regia, commonly called English Walnut, or Madeira Nut, has been neglected by many of our citizens. It is a native of Persia, and is cultivated in France, England, and in other parts of Europe, both as a fruit and timber tree. The fruit, in England, is much used in a green state for pickling, and also as an adulteration of soy sauce. In France, an oil, which supplies the place of that of Almonds, is made from the kernel. In Spain, they strew the gratings of old and hard nuts, first peeled, into their tarts and other meats. The leaves strewed on the ground, and left there, annoy moles; or macerated in warm water, afford a liquor which will destroy them. The unripe fruit is used in medicine for the purpose of destroying worms in the human body. Pliny says: "The more Walnuts one eats, with the more ease will he drive worms out of the stomach."

The timber is considered lighter, in proportion to its strength and elasticity, than any other, and therefore commonly used in England for gun-stocks. It is used in cabinet work in most parts of Europe. The young timber is allowed to make the finest colored work, but the old to be finest variegated for ornament. When propagated for timber, the nut is sown; but when fruit is the object, inarching from the branches of fruit-bearing trees is preferable. Budding is also practised by some. The buds succeed best when taken from the base of the annual shoots. Ordinary-sized buds from the upper part of such shoots generally fail.

Walnut-trees that have not been grafted or budded may be induced to produce blossoms by ringing the bark, that is, cutting out a streak of the bark around the body or main branches of the tree. Walnut-trees seldom yield much fruit until fifteen or twenty years old. The nuts are produced on the extremities of the preceding year's shoots. The trees should stand forty or fifty feet apart, and be permitted to branch out in their natural order. They need but little pruning, merely to regulate any casual disorderly growth, to reduce over-extended branches, and to prune up the low stragglers.

Lest any of our native Walnuts should be neglected or abandoned by any, I annex a description of the different kinds:

Juglans cathartícus is known under the name of Butternut, Oilnut, and White Walnut; these nuts are used by the Indians as a medicine.

Juglans nigra, the Black Walnut, is a tree of large size; its fruit is known to be excellent.

Juglans olivæformis, Pecan, or Illinois nut, is delicious. The nuts of *Juglans sulcata*, which is called Thick Shell-bark Hickory, and Springfield, and Gloucester nut, are large and well tasted. The Shell-bark Hickory, shag-bark, or scaly-bark Hickory, *Juglans alba*, is so called on account of its bark, which is torn lengthwise in long loose strips, as in *Juglans sulcata*. The *Juglans tomentosa*, the Mucker nut, White-heart Hickory, or common Hickory, and most of the other kinds enumerated, are worth cultivating where there is none, for timber for mechanical purposes; and that of the *Juglans glabra*, or Hog nut, is useful for making the old-fashioned splint-brooms.

HOW TO PROPAGATE.

Any or all of the foregoing nuts may be made to vegetate by planting them late in autumn in a well prepared soil free from superabundant moisture, and covered with about one inch in depth of firm mould. When the young trees are three or four years old they may be transplanted where they are to produce fruit. In some localities White Walnuts will succeed well, and the trees will yield fruit in ten to fifteen years; while in other parts of the country, or in an uncongenial soil, all efforts to make any of the species of the Juglans productive will prove ineffectual.

Mr. Bridgeman alludes to grafting the Juglans. I have heard others speak of grafting Walnut-trees, and I have seen it performed, but have never known a scion to grow, nor have I ever met with a person who had seen a living graft on a Butternut, or Black or White Walnut-tree. I have raised

Black Walnut-trees twenty feet high in eight years, all of which were loaded with large nuts when they were seven years old. Large and excellent nuts of all kinds may be raised by improved cultivation, as well as different kinds of fruit.

REVISER.

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