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Full text of "The fruit grower's instructor, being a practical treatise on the cultivation and treatment of fruit trees: to which is added, full instructions for forcing, with a list and descriptive account of all the best fruits cultivated in Great Britain; also directions for hothouse building, with the most approved modes of heating by fire and hot water ... The whole written from practice"

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THE

FRUIT GROWER'S INSTRUCTOR;

OR,

a practical

ON THE

CULTIVATION AND TREATMENT

OF

FRUIT TREES:

CONTAINING

A DESCRIPTION OF ALL THE BEST FRUITS NOW IN CULTIVATION,

A FULL DESCRIPTION OF

THE APPLE FLY,

COMMONLY CALLED

The American Blight, which causes the Canker in Apple Trees,
WITH AN EFFECTUAL REMEDY :

IT WILL BE FOUND EQUALLY USEFUL TO THE GENTLEMAN, THE

GARDENER, OR THE NURSERYMAN ; AND PARTICULARLY

ADAPTED FOR THOSE WHO CULTIVATE THEIR

OWN GARDENS.

THE WHOLE WRITTEN ENTIRELY PROM PUACIICE,

BY G. BLISS.

LONDON:

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1825.

LONDON:

SHACKELL AND ARROWSMITH, JOHNSON'S-COURT, FLEKT-STRBET.

PREFACE.

IT is necessary to prefix a Preface to a work
of this nature, to give the reader such informa-

tion as may be useful during its perusal ; to explain and point out the nature and arrangements of its principal parts, likewise to duly prepare him for what the work contains, which is of great advantage both to the author and himself.

It often happens in works of this sort, as well as in many others, that quotations are made from other authors in order to sanction and gloss over their own productions, sometimes of praise, sometimes of ridicule, just as it may suit the passage or parts alluded to ; but by cautioning my readers against inexperienced authors, I do not intend throughout

this publication to call any one name in par-
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IV PREFACE.

ticular in question, as, perhaps, much which has been written has been to the best of the writer's judgment. But when a person is about to become a fruit grower, (particularly on an extensive scale,) he ought to be cautious how he follows the advice of inexperienced or theoretical persons ; for I have read many works professing to treat on horticultural and gardening subjects, which are more calculated to amuse than enlighten : there is a difference between rules of treatment by which certain effects can be insured, and hereditary customs^ (if I may use the term) by which advantages may accidentally follow ; yet the sticklers, nay almost worshippers, of these latter, will not hesitate to attack the experienced man, because, in one instance out of a hundred, he has -happened to succeed contrary to the advice of the former.

But the treatment of fruit trees altogether requires k>ng practice and close application ; and I intend in this small treatise to explain so clearly the necessary treatment of fruit

PREFACE. V

trees (particularly apples,) that every one who is able to read it may understand. I might fill three volumes twice the size, and not convey more practical information to the reader than will be found in this small book ; and those who follow its instructions need not fear success, as I do not intend to speak of any thing which I have not fully proved. This work will be confined to that profitable and beautiful part of horticulture, the most leading fruits cultivated in this country ; among which I shall treat largely on apples, they being of all fruits the most profitable and useful, and I may add the most beautiful, for the bloom in Spring is extremely handsome, and the fruit when ripe the same. Indeed it may be denominated with strict propriety, a truly British fruit, being the most staple commodity of the kind grown in England ; and unlike any other, may be obtained in perfection during any month throughout the year.

It is impossible to write a book that will apply to every particular case, and as this is not in-

PREFACE.

tended as an introduction to Botany, or a Gardener's Dictionary, I think it would be wrong to confuse the reader with more than is stated in the_title page. I am certain there is great room for improvement in England, were the soils and situations properly studied, after the following treatise. I should not speak so confidently, were it not from a long series of practice ; for when I say there are thousands, and tens of thousands of apple and other trees, in different parts of England, which have been grafted and managed by my own hands till they have been sent to their respective places of destination, together with the opportunity of fruiting and proving all the best sorts now in cultivation the confidence in attempting this work will not be surprising ; and likewise the discovery of

the remedy for the canker, which I have made my study for some years, and which I am sorry to say, I have no doubt affects, more or less, above one half of the trees which have gone from me as well as others ; and the whole of which were threatened with

PREFACE. Vli

a premature end, had not the real cause and remedy been discovered.

In my history of the American Blight and the remedy, I shall confine myself to what I can speak to with certainty, and it is absolutely necessary the strongest measures' should be resorted to, to prevent the threatened destruction of our apple trees. For some years past, the markets of the metropolis have been supplied from Christmas till Summer, chiefly with foreign apples ; a season, when the price would be of such great service to our own farmers ; the reason of which proceeds from a conviction, that when the trees ought to be coming into bearing, to afford a remuneration for the trouble and expense consequent in rearing them, they are beginning to receive the canker, and notwithstanding a number of years may elapse before they become completely affected, still the fruit they produce, neither keeping so well, nor being so fine in flavour and appearance, as that of those which are healthy, render them little better than an

Vlll PREFACE,

incumbrance to the ground ; this it is which prevents a perseverance in their cultivation.

Those who have had an opportunity of witnessing the above fact, which is now unfortunately but too generally felt, and which deters them from planting, I have the pleasure to state from experience, need no longer let it influence them ; for, by following the rules laid down in this publication they may rely on success. It may be said, to speak so confidently argues too much self-opinion ; but I

think when a man is really in possession of a fact, to assume ignorance is equally contemptible, with him who is too opiniated ; both are despicable in the eyes of men of sound understanding ; it is not because I have written what my practice and judgment have furnished me with, that I wish every one to follow it ; on the contrary, knowing there are more methods than one, though not equally effective, I should wish those who are content with the success attendant on their own, most decidedly to follow it, until by re-

PREFACE. IX

peated failures they may be induced to try mine, and rinding its infallibility become converted ; and as truth and independence ought to guide the pen of every historical author, I shall bear that in mind throughout this publication.

In addition to the treatise on apples, budding, and the various modes of grafting trees, with interesting observations thereon, I have given a list of all the leading fruits now in cultivation, both alphabetical and explanatory, which will be found very useful to those who are unacquainted with them. Also a description of several other insects, besides the apple fly, which are considered injurious to fruit trees.

The work is divided into chapters and paragraphs, each paragraph beginning and ending with the subject it relates to, without being confused with extraneous matter ; and as the index refers to paragraphs as well as pages,

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any subject may be found with the greatest facility. 1

The Canker which first drew my pen to write these sheets, I hope will meet with its due share of attention, as the salvation of our apple trees is not only of individual considera-

tion, but of great national importance.

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THE

FRUIT GROWER'S INSTRUCTOR.

CHAPTER I.

On the Propagation, Cultivation) Pruning, and General
Management of Apple Trees.

ON THE PROPAGATION OF APPLES.

Par. 1 . The propagation of apples is, of all other fruits, the most easy ; and yet no tree requires more care and good management in its general cultivation.

The reason why it is more easy is, because the grafts are, if put on in the proper season, and made to touch the bark, almost sure to grow; but although so easy it is generally attended with more dangerous consequences than any other, tree, if the grafting part is

2 THE PROPAGATION OF APPLES.

not properly attended to, which will be hereafter explained.

The general method of propagating apples, is by grafting on the Crab stock, which stock should be raised from the seed of the true Crab; the seed may be procured from those who make verjuice ; when a large quantity is wanted it is the best way, as you can generally depend on having seed from the true Crab ; but this is not the case with many stock growers, for they often sow the seed from apples made into cider, which will produce various sorts of stocks; some will grow large and vigorous, others of so weak a nature that they will scarcely ever make a standard tree.

f e

The best method is to wash the seed from the pulp, and let it get rather dry, for its own pulp is very apt to rot the pip ; mix it with some light mould or sand, not too damp; then, the following February, or beginning of March, as the weather may suit, you may sow your seed in beds or in drills ; but beds are best, for when you have taken your mould out the proper depth, which should be about an inch, you will be able, when you have sown your seed, to cover it all over alike, which you cannot do so correctly in drills : the beds should be

THE PROPAGATION OF APPLES. 3

about four feet wide, leaving two feet between each bed for a path, to be able to walk between them to weed and keep the beds clean, as that is most material to all young seedlings ; you take the mould out about one inch deep with the spade, and put it into the path or alley ; make the bottom of your beds perfectly level, then sow your seed (just as it is mixt, with mould or sand) as near as you can judge about one inch apart all over the ground, which will be much better for the plants than if you sow them thicker, for Crabs when drawn up very weak, seldom do much good after : then take the mould you have thrown into the alleys, and sift it over them about one inch ; but if the ground is strong and binding, about three quarters of an inch will be quite enough.

The seed will then remain in the ground till the following spring, before you get your general crop, although some few may come up the first year ; during that period, the beds should be kept carefully clean, while the weeds are in a young state, in order that the mould may not be disturbed so deep as the seed.

The following Autumn you may take up the seedlings, having had one summer's growth, and transplant them into beds, putting them about

B2

4 QUARTERING STOCKS FOR GRAFTING.

one foot row from row, and about three inches apart in the rows : let them stand two years, then they will be strong to plant out into quarters for grafting, or if the plants are not too close together in the seed beds, they may stand two years, and the greater part will be then strong enough to plant out for grafting, without being first bedded.

QUARTERING STOCKS FOR GRAFTING.

Par. 2. Where you quarter or plant out Crab stocks, being intended to grow strong

to throw up standard trees, it is necessary to select a piece of deep loamy soil, which should be well trenched two spades deep ; this should be done as early in autumn as you can, in order to get your stocks planted early in November, then they will immediately draw root, which will make a considerable deal of difference in their growth the following summer, for if you do not get them planted till late in December, the coldness of the ground, even if the weather is mild, will prevent them drawing fresh root, and they would be better to remain in the beds till February, when they would soon begin to vegetate, for when the stocks remain in the ground for some months, after being removed and all vegetation ceased,

QUARTERING STOCKS FOR GRAFTING. 5

the small fibres are very apt to rot, and the large roots get in a mildewed stagnant state, which I have proved has been so far injurious to the plants, that it often takes them the following summer to recover themselves, while those planted in February will make a good growth.

If your ground is very poor it will be necessary to give it plenty of good rotten manure, to make them throw up standards quick.

The distance for quartering out the stocks for grafting should be two feet six inches row from row, and about ten inches apart in the rows. Some will give two feet ten inches, or three feet row from row, but that I think unnecessary, as two feet six inches is quite sufficient to get between them for all purposes, and quite room enough for them to grow so long as they ought to remain in the nursery.

When you plant your stocks you should prune the roots, cutting the strong roots shorter, and take away as many of the superfluous fibres as you can ; trim up the stock clean at the bottom, but be sure to leave buds to break from the top, then cut off the top, leaving the stock long enough to be about six-

6 GRAFTING.

teen or eighteen inches out of the ground when planted ; the stocks should remain two years, and then they will be in good order for grafting, during which time they will require very little care or trouble, more than digging between and keeping them clean from weeds.

GRAFTING.

Par. 3. We next come to grafting-, which is one of the most important branches in propagation, particularly of the apple, it being so subject to the canker, and so apt to be injured where the graft is put on the stock, which, if it once takes place, is almost sure to destroy the tree. This will be fully explained under the head of Canker.

Grafting appears to those who may see others performing it very easy, like looking at another who may write a fine hand, but it requires much practice to become a clean grafter, as well as it does to write a clean hand ; at the same time I shall endeavour so fully to explain it, that it may be of considerable advantage to the pupil.

There are various ways to graft, but the best and usual method for stocks, planted as before described, is what is commonly called whip-

GRAFTING. 7

grafting, for which we must first make the necessary preparation. In the first place, some strong loam, such as will stick well together, should be dug and laid in a heap, if in the dry the better ; for if you can run it through a sieve you will free it from all stones or lumps, which will make it mix the better.

In the next place there must be provided a sufficient quantity of horse-dung (I mean the clean droppings from the horse quite clear from straw, for it is the best thing to keep the clay from cracking,) to allow about one-fourth to three-fourths of loam; this must be mix-

ed well together, to make it smooth and fine enough for plastering, and sufficiently moist to be able to mix it about easy in the hands, but not too moist, otherwise it would slip off the stock, but that would soon be found out by those who are using it.

The next thing to prepare is some bass or matting for tying on the grafts. For stocks of the age and size before-mentioned, it should be cut about one foot and a half long, and tied in small bundles ready for the man who is to tie the grafts.

Now having all ready we must watch our

8 GRAFTING.

season for grafting: where there is a great quantity to do it is necessary to begin as early as the season will admit ; and as apples are not so early as cherries, plums, or pears, (where you have these to graft) your apples must wait till they are done ; but if you can begin your apples about the middle of March, and finish by the second week in April, it is very rare that it is too late for apples, for I have grafted apples with success in the last week in April, when the stocks have been out in full leaf; but this is a dangerous practice, for if the weather sets in very dry, it will so dry up the juices of the stocks that many cannot be expected to grow, and what do will be very weak, and scarcely ever make handsome standards.

In the next place must be got ready the scions or cuttings, which should be of one year's growth, and as firm and strong as you can get them, so that they are not too large for the stocks ; for although weak cuttings will grow they will not make near the growth as the strong cuttings, neither will they bear a dry harsh spring so well. Now we proceed to grafting. In the first place you cut down your stocks within four or five inches from the ground, which in large nurseries is done by a man before the grafter. After the grafter a

GRAFTING.

man to tie the grafts, then follow two boys, the one to what is commonly called dabb, or put the clay on the graft, and the other to close the clay ; in this way you may get through much grafting, if the grafter be quick. The grafter should have the scions cut in lengths about six inches long, and carry them in his apron ; then taking out one at a time he should hold it firm in his left hand, then take a slice off the end of the scion, rather more than an inch long, and be careful not to let your knife cut too deep to get into the pith till it gets near the end of the slice this is one reason why I recommend so short a slice, for in taking a long slice you are apt to cut along the pith, which is very injurious, although it may not signify so much with apples it is a bad practice to follow, for in grafting cherries you will scarcely ever have a crop, or what is commonly called a good hit. Having made your slice in the manner described, you then cut a tongue or slit, which should be about a quarter of an inch long, (this is another material thing to pay attention to,) commencing about a quarter of an inch below the top of the slice ; let your knife go in not more than half-way through the scion, for if you cut too far in when your grafts are united, you must be at the unnecessary trouble of shouldering or tying them again

B 3

10 GRAFTING.

round the top, otherwise those cut too far through when they have grown any size, the winds will blow down, even after tying them a second time.

Having got your scion ready you take a slice of your stock the length of the slice on your scion, make a tongue or slit about the same length as that on your scion, beginning nearly at the top of the slice, letting your knife slope gradually into the stock. If your stock is much larger than your scion do not make your slice too deep into the stock, in order that your scion may touch the inner rind of the

stock on both sides as well as the bottom, but be careful to let your scion just touch the bottom of the slice on the stock, as that is necessary both for its making a good growth the first summer, and likewise for its healing well over, for the graft derives by far more nourishment from the bottom than the side, but be sure do not let your scion go below the slice on the stock. By this practice you put on the graft in the centre of the stock, which is much better than putting it on the side, and by this practice you need not tie your grafts a second time.

TYING OF GRAFTS. 11

TYING OF GRAFTS-

Par. 4. Having given the necessary instructions for the grafter, tying of grafts is the next consideration : the tying is done by a man who follows the grafter ; he must have his bass or matting cut in lengths about one foot and a half long, or if the stocks are large, it may be longer ; this tied in small bundles should be taken one at a time, (after dipping it in water to make it tough) and tied in the string of the apron, putting one end in the apron to keep it moist ; the bass should be strong, otherwise should it break if the grafter be quick, he will have to wait for the man who ties : the man being now prepared, he should begin to tie about four stocks behind the grafter, and keep about that distance, which will give the grafter room.

The bass should be placed firm against the bottom of the scion, and not let slip, which will prevent the scion from being put out of its place ; this is very necessary to be observed, for if the scion is removed by the tying, it is useless for the grafter to be particular about putting the grafts on ; he should then tie it tight round till it comes to the top of the stock, where it should have a tight hitch to

12 TYIJFG OF GRAFTS.

fasten off, then cut the end of the bass close off, for if the end is left an inch long, which I have often seen, it prevents the clay from being properly closed, consequently admitting the air to the graft, which often proves fatal.

The next thing is putting on the clay, commonly called dabbing : this is done by a boy who follows the man who ties ; having put his clay into something to carry it with him, he must take a small piece of clay sufficient to cover the whole of the incision, and to come about half an inch above the top of the stock, in order that it may hang well on the shoulder ; this he should roll up in his hands nearly in the form of an egg, then make a hollow in one side of it with one hand, sufficiently deep, that when it is put on the stock, it will enclose it all round alike.

After the dabber follows another boy, called the closer ; he follows with a pot of dry ashes, or dust, to rub his hands with to keep them from sticking to the clay, and closes up every crack, squeezing it tight round the bottom of the clay to keep it from slipping ; then making it perfectly smooth, nearly in the form of an egg, it finishes the grafting.

MANAGEMENT OF GRAFTS. 13

The above is the general way of grafting in large nurseries about London ; but where small quantities only are wanted to be grafted, the grafter may tie his own grafts, and one boy will serve both to dab and close.

I have treated as fully as possible on grafting of apples, as it will serve for most other fruits* for this practice of grafting, is far preferable to saddle or rind grafting for fruit trees.

MANAGEMENT OF GRAFTS.

Par. 5. We next proceed to the management of grafts, which it is necessary to pay great attention to.

The grafts will not require any thing to be

done to them till they have grown five or six inches long, unless suckers should breakout from the stock before the graft shoots, which must be carefully cut off and not pulled off, for by pulling them off you leave holes in the stock which the insect is very fond of getting into, and of course the bottom is the most dangerous part of the tree to get the canker in, therefore they should be cut off as clean as possible, and when the grafts have grown five or six inches long, you should watch your opportunity after rain and the clay is wet, to go

14 SNAGGING OF GRAFTS.

over your grafts and take off those clays which have grown out that length, as they will then come off easy, and leave those which have not grown out sufficient till another time, for if you take them off too soon, and hot dry weather should ensue, they are very apt to wither up ; if the weather should continue dry, and your grafts grow too long, you must then get the clays off by knocking them with the handle of your knife, or any thing that will answer the purpose, but be sure to hold the graft as steady as you can with one hand to keep it from being removed out of its place, for that would be sure death to the graft, therefore as this is so much more trouble it is necessary to take every opportunity after rain.

The day after the clays are removed you may untie the bass, observing that you cut your bass at the back of the stock, and by following the above practice they will require no more tying, nor any further attention through the summer, than keeping them free from suckers, and cutting off the small piece of wood at the top of the stock, commonly called snagging, but this must be carefully done.

SNAGGING OF GRAFTS.

Par. 6. When you commence this work,

which you may do any time after midsummer, it is necessary to have a sharp knife with a smooth edge to avoid the knife slipping and cutting the stem of the graft, which it is very apt to do if your knife has a bad edge, and by making those cuts in the summer season it leaves a place where the insect is very fond of getting in and causing the tree to canker.

It is necessary your knife should be strong, and held very tight in the hand : after a little practice if your stocks are not very strong, you will be able to take the snag off with one cut, and after this work is performed they will require no further attention through the summer. I shall hereafter make some interesting observations on grafting generally, with other methods.

PRUNING AND MANAGEMENT OF APPLES WHILE IN THE NURSERY.

Par. 7. The next thing to explain is the pruning and management while they remain in the nursery. The first autumn after grafting they are what are called maiden trees, and they generally produce from one to three shoots, and are by many preferred in this state for general planting, where dwarf trees are required, which, in some instances, are to be recommended ; for where the tree has thrown

16 MANAGEMENT OF APPLES IN NURSERY.

out three shoots from the alternate buds (but not twin buds from the same joint,) the three shoots will be quite sufficient to form the bottom of the tree, and those shoots will often throw out quite wood enough for the tree to support, which will be hereafter explained under the general head of pruning/

But I shall now confine myself to the general management, while they remain in the nursery. Dwarf trees, as well as standards, being now in general request, it is necessary, when the pruning season commences, to reserve those for dwarfs which are not likely to make standards; therefore, after having drawn or taken away as many maiden trees as you may require, all those you intend for standards you must

take off all shoots but one, leaving the strongest and most upright.

Those intended for dwarfs should be those where the shoots are not upright or strong ; in this case you ought to cut all off but two shoots, and cut those shoots down to about three buds ; or where one shoot is much weaker than the other, in order to form a handsome tree, it is better to take off the weak shoot and cut down the strong one to four or five buds, which will produce quite a sufficient

MANAGEMENT OF APPLES IN NURSERY. 17

quantity of shoots, and prevent the tree growing strong on one side and weak on the other ; this having been performed, will be all the pruning they will require till the following summer, when those intended for standards will require what is called spurring in, that is, while they are in a growing state, soon after Midsummer, the young shoots which they throw out from the side of the tree should be cut off within about an inch from the stem, except about five or six at the top, which will cause a general circulation of the sap, and make the trees grow evidently stronger and taller during the summer ; but unless they are taken before they have done growing, it will be of no use, but had better cut them close off to the stem towards autumn, which it is necessary should be done to form a head with five or six shoots.

The trees at this age being generally about three or four feet high in the stem, and commonly called half standards, those wishing to plant half standards, cannot plant them at a better age, if the trees have made a strong growth, for the shoots are alternately formed, and consequently never crowd or injure each other, which is often the case where a tree has been headed down unless it is carefully pruned.

18 MANAGEMENT OF APPLES IN NURSERY.

but this the reader will be more fully furnished

with under the head of pruning.

The dwarfs likewise after one year heading down, will have formed shoots enough, and will never be at a better age for planting.

Although a few trees may have grown five or six feet high, and make tolerable good standards the second year, you seldom find many ; therefore after taking away as many half standards as you may have occasion for, the March following begin to make your half standards into standards, by cutting off all the side shoots, leaving the upright shoots, cutting that off about five feet six inches high, and some six feet, but trees are none the better for being too high in the stem.

After the next summer's growth, if the trees are tolerably strong and have formed a head of five or six shoots, they cannot be in a better state for general planting, for their shoots likewise are formed alternately from the stem, which when they get large, causes every limb to receive free and equal nourishment from the main stem.

As the trees will not be all fit this season, it is

MANAGEMENT OF APPLES IN NURSERY. 19

necessary to be careful how those are pruned which are left, in order to keep their heads young, free, and flourishing ; if the stem of the tree should not be higher than you may wish it, the best way will be to trim the lower shoots clean off, leaving only the two top ones, and cut those two down to about three or four buds each ; or if you wish the tree lower you must cut it down to the two bottom shoots, and be careful when you are pruning at this season, to cut as close as you can to a bud, for what wood you leave above the bud becomes a dead substance, and if it does no other injury it greatly disfigures the tree, besides making it awkward to remove after the tree has formed a head.

The above instructions are from the time of planting the stocks. I have allowed

them to remain six years in the quarters before the ground is cleared, which I think quite long enough, therefore shall not give any further instructions for pruning while they remain in the nursery, for they would not pay for standing, neither would I recommend old trees for planting, for although old trees may grow and perhaps bear almost immediately, the fruit would not be near so fine as those produced from

20 ON THE CULTIVATION OF APPLES.

young trees, neither would they succeed so well in future.

OBSERVATIONS BEFORE THE GENERAL CULTIVATION OF APPLES.

Par. 8. It is both necessary and important to make some observations on the cultivation of apples, as it more or less affects fruit growers generally, for it is too often the case, (some for want of thought, others for want of experience) to go upon one broad plan, without studying the situation, the soil, or the different sorts of fruit, which would best suit the different situations, which I shall endeavour to explain, at the same time confine myself to a limited number of sorts such as are most esteemed, for to introduce two or three hundred sorts of apples, two thirds of which are not worth growing, would only confuse the reader and render it difficult to choose.

I shall therefore confine myself to fifty sorts, giving each their true character; for it is very necessary when you plant either in large quantities for the market, or in gardens for the use of the family, to plant such sorts as will come in succession all the year round, which will be

CULTIVATION OF DWARF APPLES. 21

here explained, and the different seasons when each sort is in its highest perfection.

CULTIVATION OF DWARF APPLES.

Par. 9. As dwarf apples are now so much cultivated, we will commence with planting untrained dwarfs in gardens : having first selected your sorts, you must get such trees from the nursery as described in paragraph the seventh ; but before you plant, you should study the situation and the soil ; for although many persons are afraid to plant apples, because those of their neighbours do not flourish, and the land does not appear to suit them, I should not be afraid of failing to have fine trees and fine fruit in any soil with my treatment.

Apples are fond of a deep loamy soil, and a situation where they will have plenty of sun, and where the soil is naturally good ; you need not take any further trouble (where the ground is in the habit of being dug) than opening a hole sufficiently large to take the root in easily, loosening the bottom of the hole about a spade deep, and having pruned the roots, plant them in the same soil, and these you may plant in any convenient corner of the garden, the same as you would a currant or gooseberry tree, and if required will not take

22 DIRECTIONS FOR PLANTING IN BAD SOIL.

up more room by being properly pruned ; and the same rule may be followed in the shrubbery, at such convenient distances where you can find an open place for the sun to get at the fruit, or if a piece of ground is set apart for a plantation of dwarf apples, the distance I should recommend, would be about twelve feet apart, and then by keeping them properly pruned, they would have plenty of room to grow and receive the nourishment of the sun and air. See Pruning.

DIRECTIONS FOR PLANTING IN BAD SOIL.

Par. 10. I shall now give directions for planting where the apples are not fond of the soil, say the soil is of a gravelly nature, or nearly a bed of gravel.

You must open a hole at least three feet square and three feet deep, bring in some soil bordering on clay, and put at bottom (which will keep cool) about one foot thick, then fill up the other two feet with rich loam, and plant your tree right in the centre.

This it may be said is a great deal of trouble, but what is a garden without an apple tree, and

CULTIVATION OF STANDARD APPLES. 23

when once done they will last for many years, either in gravelly or sandy soil, in neither of which apples will do well alone.

It is under the above treatment indispensably necessary to study the sort of stock your apple is grafted on \ it should be the small Paradise stock, for apples grafted on these stocks will bloom beautifully and produce fruit even in pots, as the root is of a fine fibrous nature, and will remain in a small compass ; but the crab is naturally a strong rooted tree, and would soon overrun the boundaries of the hole made for it, and consequently not flourish after : in fact, apples grafted on paradise stocks are greatly recommended as dwarfs, where you do not want the trees to grow large, for they generally bear very freely on those stocks, and although the fruit will come very fine, they do not produce near such strong wood as those grafted on the crab ; in all cases in planting of apples be careful not to plant them too deep, but merely cover the roots well.

CULTIVATION OF STANDARD APPLES.

Par. 11 . The culture of standard apples is so generally known in this country, it is not necessary to make many observations ; at the same time a few may not be considered superfluous.

24 CULTIVATION OF STANDARD APPLES.

In the first place, when you select your trees from the nursery, be careful there is no blemish on the stem caused by the canker : and when

orchards are planted the trees should stand at least sixteen feet apart, but distances vary in different counties, from sixteen to forty feet ; I should recommend about twenty feet, or twenty-five if the land is very good, to give room for the under crop, and as there is no fear in future of the trees decaying through the canker, it would be better than planting them nearer, for it is necessary for the meadow to have a free current of air, otherwise it would produce a poor sour pasturage.

It is a very good plan to plant the trees three or four years or more before the ground is laid down for grass, for keeping the ground dug about the trees while young greatly encourages their growth, and they then become strong and out of the way of cattle.

This plan is often adopted by hop growers to plant their trees before the hop grounds are worn out, and when the meadow is laid down, there is at once a fine young orchard in bearing without further trouble, and while the trees are in that young state they do so little injury to the under crops, that the same method may

PRUNING OF DWARF APPLES. 25

be adopted by cropping the land with vegetables or corn, but not too near the tree, for any thing of strong growth is very injurious ; those who plant standards in gardens, must be guided by the spots they can best select to plant the trees where they will do the least injury to the vegetable crops.

It would be very wrong to plant standard apple orchards on very inferior land, and on good land I would by no means recommend very large holes, for the ground will naturally sink, thereby causing the tree to be considerably lower than it ought, which is very injurious, particularly if sunk below the graft, at the same time they should be made sufficiently large to let the roots in easily, and the earth at the bottom of the hole finely loosened full one foot deep before the tree is put in.

PRUNING OF DWARF APPLES.

Par. 12. The pruning of apple trees is a most important thing to attend to, and to understand, both for keeping the trees in a healthy state, and likewise for the production of fine fruit, particularly dwarfs, of which I shall first treat; I mean common dwarfs (called by some dwarf standards) and not dwarf trained trees

It is necessary to commence from the maiden

26 PRUNING OF DWARF APPLES.

graft, and go on till the tree is in a state of maturity, in order to render the process as clear as possible.

Suppose your maiden tree has only one or two shoots, it is then necessary to cut them down to four or five buds, to get a sufficiency of wood to form the bottom of the tree ; the following season leave about five of the most regular shoots which will be quite sufficient, or even four, for they are none the better for being crowded with limbs from the stem.

But as apples, sometimes the first year after planting, will scarcely make any growth, they had better stand one year after planting before they are headed down; but I should prefer those trees which have been one year headed down in the nursery, having enough shoots to form the bottom of the tree ; I should not leave more than six shoots at the outside, but what you take out, take out clean, and be sure not to leave any blemish, nor bruise the bark with the knife, for that part of the tree the insect is very fond of, and of all others, it is the most dangerous.

I here beg leave to differ from those who recommend heading down dwarf apple trees, when they have wood sufficient to form the

PRUNING OF DWARF APPLES. 27

bottom of the tree ; I prefer letting it remain, for, as the new wood will grow but little the

first year, the shoots will swell and get strong, and if it is a good bearer will form bloom buds all up these young shoots : this perhaps, will alarm some to allow the tree to bear so young, but it must be remembered that the trees while young will produce the finest fruit : besides it is necessary to throw them into bearing early, to keep them from growing too luxuriantly. It is useless having a great fruitless tree covering a large space of ground, while by proper management you can get an equal quantity of fruit off a tree half the size, and that fruit finer, and the tree kept sufficiently strong and in perfect health, by the mode of pruning I shall adopt.

Now the tree having stood two years without being headed down as before described, it will throw out some young side shoots towards the top of the original shoots, these should be cut off within two buds of the bottom, allowing the original shoots to grow straight up, till they get to the height you wish them, say five or six feet or higher, then cut their tops off, and keep all the young shoots spurred in every year, to about two buds, nearly the same as you would a red currant tree ; by this means it will throw all those spurs into bloom buds,

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28 PRUNING OF STANDARD APPLES.

and I have seen by this process, the trees hanging from bottom to top with apples like ropes of onions ; and by pruning away all that superfluous wood, the fruit receives the whole strength and nourishment of the tree ; and besides by this method, you not only throw your trees into bearing, and produce more fruit, but they have the advantage of the sun, so essential both for their flavour and beauty; the trouble is no more than that of pruning your currants and gooseberries, and surely apples are to be worth as much attention.

When the trees begin to get old, you may occasionally leave a clean young shoot, and the following year remove an old one, and by so doing you will keep your trees in a young,

healthy, bearing state.

Dwarf apples on the small Paradise stock, may (if required) be kept in a much less space than those described above, and by this way of pruning the trees may be kept perfectly free from the canker. See Canker.

PRUNING OF STANDARD APPLES.

Par. 13. The pruning of standard apples has for many years past been attended with very dangerous consequences, on account of the canker ; for where the tree has not been

PRUNING OF STANDARD APPLES. 29

cut particularly clean, or left at all bruised, there the insect would be sure to get in, and keep wounding the tree further and further, till it completely ruined it ; therefore, in all kinds of pruning, you ought to cut very smooth and clean, and then it will soon heal over, but if bruised or left rough, it will not.

Although I am going to introduce a cure for the canker, it is necessary to give the above caution in pruning.

Now, having selected my standards with young heads, such as are recommended in paragraph the seventh, I should plant them without touching their heads with a knife, for if you cut them down, and they do not break freely the first year, they seldom do well after ; but if the head is not cut, and the tree does not grow much the first year, it will get strong, and the main shoots from the stem will get strong likewise, and sooner get out of the way of cattle.

But where you plant trees that have been two or three years headed down in the nursery, it is necessary to cut out any cross shoots, or where two shoots are close together to take away one, for although they might not injure-

30 PRUNING OF STANDARD APPLES.

while young, they would when they grew old,
and the tree not grow so handsome,

I must add a further reason for not cutting down the heads of fresh planted standard apples : I have often seen them] when they have been cut down, instead of making fine young heads, throw out short shoots two or three inches long, and those (if they are good bearers) formed into bloom, which stagnates the tree, and seldom forms a good head after.

Standard trees planted, and their heads left in this state, will require no pruning till the trees get large and too full of wood, except an occasional cross branch, and taking out all dead pieces,

But old trees should occasionally be thinned where they grow too thick of wood, and this should be performed with a saw where the branches are large, but be sure to saw them off without splitting or injuring the bark, and as the saw will leave it rough, the part where it has been^ sawed off should be made smooth with a sharp knife, otherwise it will not heal so well or so soon ; but I shall treat further on this subject under the head of Canker.

PRUNING OF TRAINED APPLES. 31

PRUNING OF TRAINED APPLES.

Par. 14. As trained apples are not so much in request since the introduction of common Dwarfs, and as the pruning of them has been so fully explained, it is necessary only to state after the tree has been properly trained in the nursery, the pruning it will require, will be similar to the pruning and management of Dwarf apples, in paragraph the twelfth.

There is one great benefit arising from trained apples ; while young the wind has not the power of shaking them about so much, and consequently the fruit is not so likely to fall ; likewise, if they have no other trees to shade them, the fruit is sure to receive the benefit of

the sun.

The season I should recommend for pruning apples, is from the middle of January till the middle of March; some will prune through April, and so late as May ; but my opinion is by causing the sap to flow, and the tree to bleed too freely when the bloom is tender, often causes the fruit not to set well.

Another thing should be observed in pruning of dwarf and trained apple trees : there are some

32 BUDDING OF APPLES.

sorts which bear principally at the end of the young shoots; where that is the case, you should always leave plenty of the young one year shoots ; for want of a knowledge of this many fail in their crops on trained trees, for if the bloom is cut off we cannot have fruit ; this is easily discovered by leaving those sorts you are unacquainted with till March, before you prune them, you will then see where they shew their bloom, and the tree may be kept free by taking away old wood instead of young.

BUDDING OF APPLES.

Par. 15. Budding of apples some years back, was much more practised than at the present day, although in some nurseries in the country, it is still continued, and, of course they think it best : but I will here give my reasons for not approving of the general practice of budding apples.

The argument of those who approve of budding apples is, they generally grow taller for standards the first summer, there being but one shoot for the stock to support : granted ; but this is often the cause of crooked, weak, stemmed trees, for having run up so tall, they frequently throw out shoots at the top the following summer, which are often too heavy

DESCRIPTION OF BUDDING. 33

for the stem to support, and they consequently bend down and grow crooked.

Another very great objection to budding apples is the canker, for buds are generally untied late in summer, and there is naturally a wound in the stock, which the most scientific budder cannot prevent ; and this is the season of the year, of all others the most dangerous, for the insect is fond of a wound where they can enter for their winter quarters, and that spot of all others is the most dangerous in the tree for the canker to take place.

But although I do not recommend it generally, sometimes it is necessary : if you wish to make the most of a cutting, or it might happen you would be able to get a cutting of some favourite sort at the budding season, and could not at the grafting season. I will, therefore, give as clear a description of budding, as can be given in writing, which will serve not only for budding apples, but all other fruits.

DESCRIPTION OF BUDDING.

Par. 16.- Budding is an art which requires long practice, and close attention, to arrive at perfection in ; indeed most authors have said, it is impossible to convey an accurate idea to

34 DESCRIPTION OF BUDDING.

the reader, but I will endeavour to state it so plain, that I think with attention it may be of service.

The budding of apples is what we now have before us ; in the first place, it is necessary to attend to the state of the stocks you intend to bud, for some seasons are much earlier than others, and some soils will cause the stocks, either Crabs or Paradise, to grow much longer than others ; and in budding of all kinds of fruit trees, it is very necessary to bud them before the stocks have stopped growing.

Generally the best time for apples, is late in August, but this must entirely depend on the state of the stocks, or trees, which you intend

to bud.

The stocks being ready, you should endeavour to get your cuttings (which must be of the same summer's growth) as firm and ripe as you can, and having prepared some strong new matting for the purpose, you proceed to bud-cling.

After cutting the leaves off the cutting or scion, cut off the top likewise, as low down as it is soft and too green, then with your budding

DESCRIPTION OF BUDDINO. 35

knife which must have a very keen edge, take off the top bud from the scion, commencing with your knife about an inch below the bud, then hold the bud firm between your thumb and finger, and take out the piece of wood the reverse way of the bud, leaving nothing but the rind, this must be done clean without leaving it any way ragged ; you then look, (and in this it is necessary to be very particular,) to see if taking out the wood has injured the bud, which it will do in various ways ; sometimes it will draw all the centre of the bud out, which renders the bud of no use whatever ; sometimes it will leave the bud very hollow ; in that case they are doubtful ; therefore if you are not short of cuttings do not make use of one bud unless it is quite plump and level with the inside rind, and then you may almost make a certainty of its growing ; on the contrary, you cannot depend on them, for they will often keep alive to all appearance even through the winter, but will not shoot in spring ; in fact, this is one of the most nice points in budding; having your bud ready, you next proceed to open the incision in the stock or tree ; the incision is made nearly in the form of a letter T, cutting through the rind first at the top about halfway round the stock, then commencing with your knife about two inches lower down, draw your knife up

36 HEADING STOCKS WHICH ARE BUDDED.

to the cut at the top, and before you take your

knife out, gently open the rind on one side, which will let in the handle of your budding knife, then open the incision so that it will let in the bud to the bottom, and cut off what may remain too long for the incision ; tie the bud tight round with some strong matting, observing that you do not let the bass go at all over the bud, for that is sure death ; give it a tight hitch to fasten off and the budding is finished.

UNTYING OF BUDS.

Par. 17. When the stocks or trees have been budded about six weeks, it is necessary to untie the bass from them ; it is the practice of some to tie them again, but this is quite unnecessary, except where they have been budded in very free growing young wood, but even then if the bass is not tied too tight, they need not be, or at least very seldom, tied again.

HEADING DOWN STOCKS WHICH ARE BUDDED.

Par 18. The heading down of stocks or trees which have been budded is the next process ; they should be cut off about four inches above the bud; this may be done any time after Christmas, but about the end of February is a good time ; they are not so well to be left

TYING AND SUCKERING OF BUDS. 37

much later in the season, otherwise the bud is apt to go blind, through the sap rising more up into the head of the stock or tree.

A

TYING AND SUCKERING OF BUDS.

Par. 19. The next thing is the tying and suckering of buds; it is necessary when the suckers shoot out from the stocks to cut them clean off, in order to give the bud all the encouragement you can, and when the bud has grown four or five inches long, tie it gently up to the piece of the stock which is left above the bud, but be sure to leave a sufficient space between the bud and the stock for the bud to

swell, after this you have no further trouble with them, except keeping them free from suckers till they want snagging, for which see snagging, Paragraph 4.

OBSERVATIONS BEFORE THE EXPLANATORY LIST OF SORTS.

Par. 20. Having given all the necessary information for the cultivation, pruning, and general management of apple trees, I shall next furnish the reader with an explanatory list of sorts, giving each their true character.

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EXPLANATORY LIST OF SORTS.

TABLE OR DESERT APPLES,

Par. 21. Ribston Pippin ; this is one of the most celebrated apples in cultivation, it is ripe in October, and in the months of November and December, it is considered by most superior in flavour to any apple at that season ; its bloom is simple and by no means showy for the shrubbery ; it is a general bearer, but will not keep late, for if the fruit does not rot, it will lose its juices and become insipid. It will also make excellent sauce, but it is generally recommended as one of the best table apples.

Par. 22. Court of "Wyck Pippin ; this is a very handsome small table, apple ; it is said to be a seedling from the old golden pippin ; it ripens in October, is a good bearer, and will keep through the winter.

Par. 23. Scarlet Nonpareil; this is a very choice table apple, in high perfection at Christmas, at which season it is not excelled by any apple for beauty and flavour ; it is rather larger than the old nonpareil, of very handsome form* and if the fruit stands open to the sun, it will turn of a beautiful scarlet ; it produces a prodigious quantity of bloom, and generally bears well.

EXPLANATORY LIST OF SORTS. 39

Par. 24. Old Nonpareil; this is an apple too well known to require much explanation or recommendation ; it is a fine keeping table fruit.

Par. 25. Downton Pippin ; this is one of the productions of Mr. Knight, of Downton Castle, and President of the Horticultural Society ; it is a very handsome small yellow apple, very full of juice, of rather a tart flavour ; it is a great bearer and in high perfection in the autumn.

Par. 26. Sykehouse; this is a small firm table apple of a russet colour, handsome form, and equal, from Christmas till May, to the old nonpareil ; it is a very great bearer.

We have not a better keeping table apple in England.

Par. 27. Yellow Ingestry Pippin ; this is a very handsome small yellow table fruit, a good bearer, and is in perfection about October.

Par. 28. Hicks Fancy ; this is a most delicious desert apple, of small size, a very great bearer, and will keep; but it is best before Christmas.

40 EXPLANATORY LIST OF SORTS. N

Par 29. Old Golden Pippin ; this apple as a table fruit, is decidedly one of the best in this country ; although there are many apples far superior to it in flavour before Christmas : it is not excelled by any after, and consequently at a season when most of our finest table apples are gone by. I cannot pass over this fruit without making a few observations, knowing an impression has been made on some gentlemen, that the Golden Pippin is entirely wearing out, and therefore useless to cultivate it ; in this I must beg leave to differ: from my great practice among apples, I am satisfied they are to be kept in as flourishing a state as ever they were, for the cause

of its early decay is entirely from the canker, which is the case with most sorts of weak growth, but the Golden Pippin is one of the insect's greatest favourites ; therefore by keeping the body of the trees sound, you may depend on your Golden Pippins flourishing as well as ever.

Par. 30. Franklin's Golden Pippin ; this is a very good juicy table apple, a good bearer and will keep in high perfection in November.

Par. 31. Oslin; the true Oslin is a very early summer apple of a spicy flavour, and by many very much admired ; the bloom is also very handsome for the shrubbery.

EXPLANATORY LIST OF SORTS. 41

Par. 32. Scarlet Pearmain ; this is a handsome table apple of a fine scarlet colour, full of fine sweet juice, and a great bearer; ripens early in the autumn, and will keep through the winter.

Par. 33. Royal Pearmain ; this apple is very handsomely formed, of rather a russet red colour, and a good size for the table, the flavour is very fine, and it is generally a good bearer ; it ripens in September, but soon becomes mealy after it is gathered.

Par. 34. Margaret Apple ; this is a good summer apple of a red colour, with a little russet towards the eye ; it is a good bearer and ripens in August.

Par. 35 Kirke's Duchess of Oldenburgh ; this is a table apple of a tolerable size ; it is rather a flat form ; the ground of the fruit when ripe is a greenish yellow, beautifully pencilled with pink and red ; it is full of fine sweet juice, and may be fairly called one of our best summer table apples.

Par. 36. Kirke's Golden Reinnet ; this is a very handsome table apple of a golden russet

42 EXPLANATORY LIST OF SORTS.

colour, and a fine red next the sun; the flavour is very fine ; it ripens about October, and is good till after Christmas.

Par. 37. King of the Pippins ; this apple ripens late in the summer, and to eat it from the tree it is equal in flavour to any at that season ; but a few days after it is gathered it loses its flavour, or at least is very materially diminished.

Par. 38. Wellington Apple ; this is a very handsome keeping table fruit, and deserves to be brought into general cultivation ; the fruit is of a pale green ground, of a beautiful pale red or rather pink next the sun, and is a great addition to the deserts at, and after Christmas.

Par. 39. Kerry Pippin ; this is a much admired summer table apple, and is a good bearer.

Par. 40. Wheeler's Russet; this apple, as a table fruit, deserves the highest character ; it is rather larger than the old nonpareil, much like it in appearance and flavour ; it is a great bearer, and will keep till May.

Par. 41. Powell's Russet is a most excel-

EXPLANATORY LIST OF SORTS. 43

lent table apple; it is smaller than Wheeler's, very fine flavour, a great bearer, and will keep through the winter.

Par. 42. Devonshire Whitesour ; this is a very early summer table apple, of a whitish yellow colour ; it has fine melting flesh, with very rich juice ; it is a good bearer, and is greatly admired.

Par. 43. Margell is a table apple, in flavour much like the Ribston Pippin, but does not grow so large; it is a great bearer, and will keep till spring.

Par. 44. Christy's Pippin; this is an apple not much known at present ; it is one of

the best table apples among the new varieties-; in form much like the Nonsuch, firm and juicy, of a greenish colour, fine flavoured, is a very great bearer, and will keep through the winter/

APPLES FOR CULINARY PURPOSES.

Par. 45. -Beauty of Kent; this is one of the largest apples in cultivation ; it is a most excellent apple for sauce, looks very handsome on the trees, is a great bearer, and will keep.

Par. 46. Kirke's Emperor Alexander ;

44 EXPLANATORY LIST OF SORTS.

this is a fine sauce apple, and is decidedly the most beautiful apple grown. I have known them measure sixteen inches round ; and although they grow so large, they seldom fall from the trees if sound ; it is a good bearer, ripe late in October, and will keep till Christmas.

Par. 47. Keswick Codlin is a large yellow apple, and one of the greatest bearers we have. This is well adapted for small gardens, for it is a long time before it gets large through its great bearing; it ripens in September, but will not keep long after they are gathered.

Par. 48. Luccumb's Seedling, is a great bearer, of a greenish yellow striped with red, will grow large ; it is a very good sauce apple, and will keep through the winter.

Par. 49. Northern Greening; this is a most desirable apple to plant, it is a firm green fruit, a very great bearer, and will keep sound till spring.

Par. 50. Kirke's Scarlet Admirable ; this is a very fine large sauce apple, of a beautiful scarlet next the sun; is generally a good bearer, and will keep.

EXPLANATORY LIST OF SORTS. 45

Par. 51. Royal Russet; this is a well known good keeping sauce apple.

Par. 52. Cockagee; this apple, which is so celebrated for cider, I have merely recommended for kitchen use, on account of its fine acid for being mixed with other apples in the tart or pudding it answers the purpose of the Quince.

Par. 53. Shepherd's Newington; this is a fine large juicy sauce apple, and is a great bearer.

Par. 54. Striped Holland Pippin; this would be very handsome in the shrubbery, for the bloom which comes out early is extremely beautiful ; it is a good bearer and a very good apple.

Par. 55. Dutch Codlin ; although I cannot recommend this as a general bearer, the fruit is so fine, and the bloom so beautiful it deserves a place amongst a collection.

Par. 56. Kentish Codlin; this is a very good bearer, not so large as the Dutch Codlin, but is a very good sauce apple.

Par. 57. Norfolk Storing; this apple will

46 EXPLANATORY LIST OF SORTS.

keep well through the winter, and is good for sauce when most others are gone by ; it is generally a good bearer.

Par. 58. Norfolk Beefin ; this is a well-known long keeping apple, of a dullish red colour, it is famed for baking, and is good for all culinary purposes. This apple will keep good till August, and is a general bearer.

Par. 59. Lemon Pippin ; this is a very good sauce apple, of a yellow colour, is a good bearer, and will keep till March.

Par. 60. Loan's Pearmain, is an excellent sauce apple, is a good bearer, and will keep.

APPLES FOR DESERT OR CULINARY PURPOSES.

Par. 61. Hawthorne Dean; this apple, for the beauty of its bloom, the beauty of its fruit, its fine flavour when in season, together with its wonderful bearing, surpasses every apple now in cultivation : if the trees stand where they can have the benefit of the sun they look as handsome as a beautiful peach ; the fruit is handsomely formed, of a whitish yellow ground, and a brilliant pink next the sun ; they are very full of juice, and the fla-

EXPLANATORY LIST OF SORTS. 47

your universally admired while in season; it is generally in perfection through the month of September, although they are used much earlier, and till the end of October. If this apple would keep there would not be such an apple in cultivation, for many of them grow large for kitchen purposes, while the small ones produce a beautiful and delicious fruit for the desert, and it is thought by many it would make fine cider : but to have this fruit handsome it is absolutely necessary to plant the trees where the fruit will receive the sun, otherwise it will be of a pale colour. I know of no plant or shrub in cultivation that would adorn the shrubbery more than this tree, for the bloom is extremely handsome in the spring, and in the summer the fruit would not be passed without being admired.

Par. 62. Hertfordshire Pearmain; this is an exceedingly fine apple for winter, it is rather of a red russet colour, the small ones are handsome for the table, having a very fine flavour ; the large ones are most excellent for kitchen purposes.

Par. 63. Kirke's Lord Nelson ; this apple is one of Mr. Kirke's finest productions, it is a great bearer, and very handsome; good for

48 EXPLANATORY LIST OF SORTS.

table or sauce, is in perfection in October, and will keep till Spring.

Par. 64. French Crab, called by some the everlasting pippin ; this is a very firm green apple, it is good for culinary purposes through winter, and in spring is a very fine table fruit ; it will keep good till the early summer apples come in, and may be considered one of the most useful apples in cultivation : it might be grown in the country to very great advantage for the London markets, for they are so firm they will not bruise like other apples, and in the spring they always fetch a great price.

Par. 65. Nonsuch ; this well known apple deserves cultivation, it is a great bearer and very good for kitchen purposes ; and for those who are fond of a sharp juicy apple, they will do for the desert ; it ripens late in summer, but will not retain its flavour long after it is gathered.

Par. 66. Norfolk Paradise ; this is a handsome apple for table, and very good for sauce ; it will keep through the winter.

Par. 67. Woodstock, or Blenheim Pippin ;

EXPLANATORY LIST OF SORTS. 49

this apple was produced at Woodstock, the seat of the Duke of Maryborough ; it is a most excellent apple for all purposes ; it ripens in October, and will keep good some time.

Par. 68. Mank's Codlin ; this is one of the greatest bearers we have ; the fruit is handsomely formed, of a pale yellow colour, and where the sun can get at them they turn of a beautiful pale pink ; it is full of fine rich juice, and good for all purposes ; the bloom is not excelled by any ; it is nearly as handsome as a rose ; it is further to be recommended to plant as dwarfs in the shrubbery, for its great blooming and bearing prevents its growing so large as many sorts ; it is in perfection about September, but will not keep long.

Par. 69. Pile's Russet ; this is an old, well known excellent keeping apple, and good for

all purposes.

Par 70. Braddick's Nonpareil ; this apple, which is rather new and not much known, deserves to be recommended ; it partakes much of the old nonpareil in flavour, but is an earlier apple : it is nearly of a russet colour, fine melting flesh, and full of rich juice ; some of them grow a tolerable size, which will do for cultivated

50 OBSERVATIONS.

nary purposes, and the small ones afford a fine dessert ; it is in perfection about November, and will keep and retain its juices ; it is a great bearer.

OBSERVATIONS.

Par. 71. I have now furnished my readers with a collection of the best sorts of apples now in cultivation, for the different purposes as described in the character of each apple. Although there are more very good apples, there are a great many not worth recommending; indeed, there are some I could mention superior to some of those in the list, but what a disappointment it is when your crops continually fail ! Some may say, why leave out such and such a sort, where it may probably be a favourite ? but there is such a confusion in the names of apples, that it is very likely to be in this list under another name, for there are several among them I know to have three or four different names : but these are properly named as known by the Horticultural Society, and the principal nurserymen round London.

Some may think, if they see a tree full of fruit it must* be a good bearer, but I have known some of the most shy bearers (by chance) produce a fine crop ; it is therefore

ALPHABETICAL LIST OF APPLES. 51

necessary to watch its general bearing : such fruits as I have described here I have tho-

roughly tried, and chosen them from a very large collection ; I can therefore recommend them with confidence. I should also wish it to be understood, that fruit will not ripen at the same time every year; in 1822 fruit generally was three weeks earlier than in 1823, neither will apples keep so well some seasons as others. I have mentioned the time of ripening as that of our usual summers.

To confuse the reader with an explanatory list of other sorts for the above purposes, would be useless, and render it difficult to choose ; but as there are other very good apples, and every one have their favourites, I will give an alphabetical list of 'names of those sorts now generally cultivated.

ALPHABETICAL LIST OF APPLES,

NOW IN GENERAL CULTIVATION.

TJwse marked with an asterisk (*) are described in

the explanatory list.

Par. 72.-

Aromatic Russet Boatswain's Pippin

AshmeacTs Kernel Biggs^ Nonsuch

*Beauty of Kent Barcelona Pearoiain

Beauty of Wilts Benwelfs Pearmain

*Braddick's Nonpareil Bedfordshire Foundling

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ALPHABETICAL LIST OF APPLES.

*Court of Wyck Pippin

Crofton Apple

Cockle Pippin

Tostard Apple

*Cockagee

*Cristy's Pippin

Carlisle Codlin

C irlish Aromatic

Cobham Apple

*Downton Pippin

*Dutch Codlin

*Duchess of Oldenburgh

* Devonshire Whitesour

Duke of Beaufort's Pippin

*Eniperor Alexander

Embroidered Pippin

Flower of Kent

*Franklm's Golden Pippin

*French Crab

Foxley Pippin

Farleigh Pippin

Feartf s Pippin

Formuse Apple

Fall Pippin

* Golden Pippin

*Golden Rennet

Gibbon's Russet

Golden Russet

Gough Apple

Grange Apple

Gray Leadington

Golden Harvey or Brandy

Apple

General Wolf

'Hawthorne Dean

^Hertfordshire Pearmain

*Hick's Fancy

Hughes' Golden Pippin

Holland Pippin

Hall Door

Hunt's Royal Red

*Keswick Codlin

Kirke's Golden Pippin

Kirke's Incomparable

*King of the Pippins

*Kerry Pippin

*Kirke's Lord Nelson

*Kentish Codlin

Kentish Fillbasket

*Luccomb's Seedling

*Lemon Pippin

*Loans' Pearmain

Lewis' Gilly Flower

*Manks Codlin or Irish

Pitcher

*Margaret Apple

Marmalade Pipjaft

*Margil

Minchin Crab

Mommel Pippin

*Norfolk Storing

*Norfolk Beefin

*Norfolk Paradise

*Nonpareil

New Town Pippin

^Northern Greening

CIDER APPLES.

53

*Nonsuch

*Oslin

Orange Pippin

Ord Apple

Potter's Apple

Pidgeon's Heart or Arabian
Apple

Pedley's Pippin
*Piles Russet

Peach Apple

Pomgree
*Powell's Russet

Quince Apple 4,

*Ribston Pippin
*Royal Pearmain

Royal Corpendue

Red Quarentine
*Royal Russet

Ridding's Nonpareil

Red Ingestry Pippin

Red Juneting
* Scarlet Nonpareil
*Sykehouse

Scartet Crab

Siberian Crab

Siberian Harvey
Sops of Wine
Sellswood Rennet
*Scarlet Pearmain
Scarlet Queening
Southampton Pippin

* Scarlet Admirable

* Shepherd's Newington

Stubbard Apple

* Striped Holland Pippin
Spring Grove Codlin
Sandy's Russet
Transparent Crab

* Wood stock or Blenheim

Pippin

*White Juneting
*Wellington Apple
Wormsley Pippin

* Wheeler's Russet
Winter Pearmain
Wyken Apple
White Lilly
Yorkshire Greening

*Yellow Ingestry Pippin

CIDER APPLES.

Par. 73. As it is now become a question whether our old cider fruits are not going to decay from old age, it is necessary to say something on the subject.

54 CIDER APPLES.

I have no doubt but many, where they have not had sufficient practice, will differ with me, but having for many years had thousands, and tens of thousands, continually under my immediate care and notice, it has given me an opportunity of becoming thoroughly acquainted with the constitution of the apple tree ; and I am confident it is nothing but bad management and ill treatment which is the cause of the general decay of our apple trees, and principally, from want of proper attention to the canker, which is caused by the American blight. This is quite evident from all our new sorts becoming affected by it, as well as the Golden Pippin, and our other fine old cider fruits. To conclude, I am convinced so long ~s Eliglian

oak is known to flourish in England, so long by proper management, may our old Golden Pippins be known to flourish, as well as they did fifty years back ; I will therefore give a list of some of the esteemed old sorts, with a list of others which are now generally approved of for cider.

Old Golden Pippin Wood Cock

Fox Whelp Forest Stire

Herefordshire Redstreak Old Queening

Orange Pippin Bennet Apple

Red Musk Friar

Hagloe Crab Yellow Elliott

CULTIVATION OF CIDER APPLES. 55

NEW CIDER APPLES.

Court of Wyck Pippin Kirke's Lord Nelson

Foxley Apple Kirke's Seedling Golden
Downton Pippin Pippin

Stead's Kernel Franklin's Golden Pippin

Cockagee Kirke's Golden Rennet

If I were going to plant apples, purposely for cider, I should confine myself to a few sorts ; for if we have those sorts which are good, and good bearers, what can we wish more? I should therefore recommend the following :

Court of Wyck Pippin Kirke's Lord Nelson

Foxley Apple Kirke's Seedling Golden

JJownton Pippin Pippin

Cockagee Franklin's Golden Pippin

The most favourite cider apple now in cultivation is the cockagee ; I am informed by some of our principal cider merchants it is decidedly

the best for bottleing, and will bring the greatest price ; therefore, as this apple is a good bearer, and a free grower, it would be the most profitable of any to plant for cider.

Kirke's Lord Nelson, is not much known at present as a cider fruit, but this apple, which is a good bearer, produces a large quantity of

56 PRODUCING NEW KINDS OF APPLES.

fine astringent saccharine juice, and makes a most excellent cider to drink from the cask.

List of apples from one to twelve sorts recommended for small gardens.

p ar . 74._

1 Hawthorn Dean 7 Manks Codlm

2 Ribston Pippin 8 Scarlet Nonpareil

3 Kirke's Lord Nelson 9 Scarlet Pearman

4 Cristy's Pippin 10 Hick's Fancy

5 Beauty of Kent 11 Woodstock Pippin

6 Sykehouse 12 Court of Wyck Pippinr

The above are all described in the explanatory list, where the different seasons of ripening, with the character of the apples, may be found.

THE MODE OF PRODUCING NEW KINDS OF APPLES.

Par. 75. It is a well known fact, not only among botanists, but all those who have paid attention to the culture of the vegetable tribe, that by improper management their sorts will degenerate; and this is caused, by such sorts being planted too near together, by which means they unite with each other.

If you plant cabbages and potatoes, or cucum-

PRODUCING NEW KINDS OF APPLES. 57

bers and turnips near each other, or any thing of a different nature, they will not injure ; but if you plant cabbage and cauliflower, or savoy, or any thing of a similar nature, it will cause the most perfect sort to degenerate, if they are allowed to bloom together. The same is the case with apples ; for, if various sorts are in the same garden blooming near each other, although you might save your seed from what appeared a very fine apple, you would not judge which was the male parent : in order to elucidate this particular, I will endeavour to state as plainly as possible, the nature of the apple from its first formation, till it becomes perfect, and produces the ripe pip or seed.

In the first place, when the bloom is quite open, the principal attraction is the leaves of the bloom, five in number; that which is called the corolla is below the flower, where the small green apple is formed, which continues to grow larger till it comes to perfection ; this is called the flower cup or calyx ; in the centre of the cup you see small yellow things which are called stiles, and below the stiles are to be seen several other very small things with round heads like pins, which are called stamens, and these produce a fine dust called the Farina or Pollen, which is collected by the bees and other

D 3

58 PRODUCING NEW KINDS OF APPLES.

insects, and which the former so industriously collect and lay up for their young, &c.

Various have been the opinions on this subject, but it is now become conclusive, that the bloom becomes impregnated with other varieties, through the bees and other insects ; indeed, most insects after they become winged, are fond of the sweets they can collect from flowers ; and although we have not so just an idea of many insects as we have of bees, yet I have no doubt, many of them take part in crossing the fruits and vegetables : but the bees may be seen flying to a great number of different

flowers and trees, before they have a sufficient load to take home to their hive, and by thus flying from bloom to bloom, and tree to tree, they occasionally drop part of the Pollen into another flower, which causes it to be impregnated with the nature of the fruit or vegetable from which it was collected ; it therefore shows the necessity, if we wish to produce a new variety of any peculiar quality, to plant the trees where they will not be within a considerable distance of any other; for instance, suppose you wish to raise a new keeping apple, it will be necessary to chuse two good keeping apples, and if one were very sour, and the other sweet, it will have a great chance of

DIFFERENT MODES OF GRAFTING. 59

combining these two qualities, which are quite necessary to constitute a good apple ; or if you have a favourite early apple, and would wish to get one nearly like it that would keep, then plant by it a good keeping apple, and you will have a chance of getting one nearly like it, and probably much better.

If your seedlings are at all strong, the best method, and most quick to prove them, is, the following spring after they have come up, to graft them on young fruit bearing trees ; it will bring them into bearing early, and by so doing, you likewise have an opportunity of noticing which are likely to become good bearers.

OBSERVATIONS ON THE DIFFERENT MODES OF GRAFTING.

Par. 76. Various are the opinions respecting the influence the stock will have on the scion, or graft : many persons (for want of sufficient practice) to this day, suppose the stock will affect the scion, and consequently the fruit produced from the tree grafted on a stock whose fruit is different ; but during my practice I never have known in any instance, the fruit to become altered through the stock it was grafted on : in order to illustrate this fact

60 DIFFERENT MODES OF GRAFTING.

as clearly as possible, I will give my general opinion on the subject.

It is necessary sometimes to convey our ideas (particularly in writing where it is subject to every criticism) as plainly as possible ; I shall therefore commence from the seed of the stock.

In the first place, when the seed first spears, (say the Crab) its spear grows downwards, (the same by a common bean or pea) perhaps two inches before we see the green seed leaf above ground, this shews that the fund of vegetable matter above ground, must be filtered through the root, for without the root the tree cannot grow, but the root might exist for some time, although the head was cut down ; I am therefore most decidedly of opinioti, that the stock in some degree partakes of the nature of the scion which is grafted on it ; for if we look at the nature and constitution of a tree, and from practice mark its general progress, there cannot be an existing doubt, that the roots, veins, fibres, or whatever they may be called, which strike from the scion into the stock, must take root and run downwards, and that to the very extremity where the sap flows ; this I am furthe convinced of by putting the graft on the

DIFFERENT MODES OF GRAFTING. 61

centre of the stock instead of the side, for you always find them make a considerably better growth, and the trees are more durable ; therefore, if the graft sends its roots down to the very extremities of the roots of the stock, if either becomes impregnated, it must be the stock and not the scion.

The same by budding ; if nature had so ordered it, that the stock should have had any influence on grafting, much more must it have had on budding, where there is nothing left but the mere rind ; yet this small bud has been in no instance ever known to degenerate on account of the stock, if budded on a stock it was fond of.

What I mean by a bud being fond of a stock, is such stocks as buds and grafts are usually worked on ; this is one very necessary branch of a nurseryman's profession, when he has a new fruit, to endeavour to find out such stock as is best suited to its constitution, &c.

I remember many years back, when quite a boy, a common white jasmine which was growing against the house, and being fond even from my earliest years of trying experiments among trees, I took a bud from a striped jas-

62 DIFFERENT MODES OF GRAFTING.

mine, and budded a branch of the green ; the bud grew, and what shoots put forth below the bud, most of them became blotch leaved ; this is a proof the bud or graft must have an effect on the stock.

There are other modes of grafting, but which are little noticed for fruit trees, except when the trees are very large, and as it will not be foreign to the present work I will mention them.

First, rind grafting ; this is principally practised on large trees. After cutting off the branch of the tree (if with a saw it should be made smooth with a knife) cut a slit in the rind, about two inches from the top where it was cut off, open the bark without bruising it, (the handle of a budding knife is the best instrument) then cut a slice of your scion the length of the incision on the branch, nearly the same as described in whip-grafting ; run the scion down between the rind and the wood, placing the wood of the scion against the wood of the , stock, then bind it tight round with strong matting, and put clay round it the same as directed in whip-grafting ; when this method of grafting was more in practice, many would make a shoulder in the scion, to rest it on the shoulder of the stock ; but this I think

DIFFERENT MODES OF GRAFTING. 63

unnecessary, as the two woods would not

gender without the bark, and there would be no bark on the crown of the branch or stock: three or four scions may be put on one large crown; but this method of grafting is by no means to be recommended, for the winds are so apt to blow them out, and if the bodies of the trees were sound and worth grafting, and the branches too strong for whip-grafting, it would be far better to cut them down nearly to the stem of the tree, and the following year they would throw out fine young wood for whip-grafting, and rather than lose, you would save time by this practice ; I have whip-grafted with success, branches six and eight inches in circumference.

Grafting by approach, commonly called enarching ; this method is principally practised among exotics, consequently the fruit grower will not feel interested in its detail, particularly the apple grower, it being by no means necessary ; this practice is principally adopted where the scion and stocks will not unite freely by whip-grafting.

CHAPTER II.

ON THE CANKER IN APPLE TREES.

Introduction.

Par. 77. The white blight, which is now but too well known among the apple trees in this country, is called by some versed in natural history *Aphis Lanata*, and by some American blight, by others the French blight : but whether it is a native of America, or France, or either, I think is a matter of doubt ; in fact, all I have read on this subject have passed it over without any useful information ; but I have been informed by some of the established nurserymen near London, that it first made its appearance in this country in the nursery grounds of Mr. Swinton, of Chelsea, who, being curious in fruits, was in the habit occa-

sionally of importing apple trees in pots on Paradise stocks from France, and that it made its appearance first on them, the following summer after they were imported; and during the same summer made its appearance in a nursery belonging to Mr. Grimwood, at Knightsbridge, being near to where Mr. Swinton then lived. This will not appear at all unlikely that it should make its appearance in a ground only a few hundred yards from each other, when the real nature of this insect is explained ; in fact, for a long period my ears have been open to every word that has been spoken on this subject, for having been in the habit of grafting several thousand apples annually, for many years past*

it induced m to pay more than 01 diu<ay

to this destructive i

THE MANNER THE INSECT OPERATES O# THE TREES WHILE IN THE NURSERY.

Par. 78. It very much puzzled me to account for the strange manner in which it operated during the progress of the trees, for the longer the trees remained on the ground the more they seemed to get the disease. I have often reflected with some anxiety, when thinking of the thousands of fine young trees

66 INSECT IN TREES IN THE NURSERY,

which have gone from my hands, that there could be no remedy against the canker ; for if you asked any one what they thought of it, their opinions were all at variance ; some would say it came with the east winds, others that it was a most extraordinary and unaccountable thing, but no one could give me any useful information. I was often surprised to find trees that had been grafted on fine clean stocks, and which continued so through the summer, and likewise towards the autumn, not a blemish was to be seen, excepting a little white blight on the young shoots, would the following spring be getting cankered where the trees were grafted : on close examination, this was uniformly the

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case where tiit; gia.it was not t,uuiuugu^
healed ; and when once the "tree was attacked,
it would generally get worse every year : in
fact, it became so bad in some parts of the
country, that many nurserymen gave up grow-
ing apples altogether ; and from the destruc-
tion with which they were threatened, it
became quite disheartening to plant ; and had
not the real cause been discovered, our apples,
for which we are so celebrated, must eventually
have gone to total ruin : a doctor may pre-
scribe various things for a patient, but unless
he is acquainted with the disorder, it is all
chance about the effect ; but first find out the

FIRST CHANGE OF THE INSECT. 67

disorder, and then you have a chance of apply-
ing a remedy with safety.

DESCRIPTION OF THE FIRST CHANGE OF THE INSECT.

Par. 79. I have discovered by the means
of glasses, that some of these insects take wing
like the small green fly, such as are seen on
roses, &c. ; but those that become winged in
this state turn to a very small black fly ; and
if the weather is not very warm and favour-
able, they will not survive ; but, if it continues
warm and fine, they soon gain strength, and fly,
and play together in swarms like gnats, in the
a|r but they seem to keep near their native
spot, unless carried away suddenly by the wind.
Those that take wing in this state, are the
largest of the Aphis, which appear so helpless ;
but there is another small insect, which is very
diminutive, and which appears to stick to the
large ones while they remain in the cotton-like
web ; these are scarcely discernible without
the microscope, but they are much more active
on the legs, and soon grow larger ; when
they leave the web, they crawl down to the
ground, and remain just under the earth till
they have gained sufficient strength to find out

their winter's abode, during which season

68 OF THE INSECT IN ANOTHER STAGE.

they cause the canker, which will be hereafter described.

FIRST DISCOVERY OF THE INSECT IN ANOTHER STAGE.

Par. 80. I have often discovered during my practice among the apples, while removing the cankered parts of the trees (which I was uniformly particular in doing) that a small maggot or grub was to be seen in the part affected, but I naturally concluded like others, more from custom, (certainly not reflection,) that it merely got there for shelter; but in June, 1822, by accident, rather assisted by curiosity, the whole mystery was disclosed.

PARTICULAR OBSERVATIONS MADE IN 1822, OF THE INSECT WHICH CAUSES THE CANKER ITS BECOMING WINGED.

Par. 81. It may be recollected by some of my readers that the summer of 1822 was a very fine one; and to that fine summer succeeded a very mild winter ; in the month of June the white blight began to be very general. This, I observed, as I was going through an old apple quarter in the nursery which was intended to be cleared the following autumn ; and this quarter, which contained upwards of twenty thousand apple trees, were now reduced

OF THE INSECT IN ANOTHER STAGE. 69

to about eight thousand ; many of which, from the canker, and other causes were unsaleable ; but I observed those trees which were cankered, was generally where they had been grafted ; and during the time I was cutting them down I paid particular attention, as the white blight seemed to increase daily. In my progress I came to a tree of the Woodstock Pippin, which was almost eaten through with the canker ; I cut it off below the graft, and felt rather surprised to see

a thin brown shell (seven in number,) issuing from holes through the canker ; I could compare the bottom of this tree to nothing but a horse with a very bad greasy heel ; this I passed over, but still I thought it very extraordinary, and on reflection, was induced to examine more trees which had the canker, and having come to a tree which was very much eaten, I saw some shells like the above, and an insect which was just about to leave the shell, its head being quite out. I immediately cut it out, and was not a little surprised to see it had wings, and although it appeared quite motionless, when touched it moved ; and when the chrysalis was removed from it, in a few seconds it began to move its wings, this I put on a leaf on the ground, from whence it soon took flight. I examined the tree further, when cutting away the canker, I further discovered

70 OF THE INSECT IN ANOTHER STAGE.

in the same spot two maggots or grubs, about half an inch long, of a whitish brown, and dark heads, and likewise concealed very safely between the rind and the wood, two insects in a chrysalis, rather a lighter colour than those from which the insects had flown, and I was convinced from what I knew of natural history, that these were all the same species of insect. I then began to think that what produced the canker, and the white blight, must be two distinct species of insect ; but standing reflecting on what I had seen, with a view to further examination, I observed a strange looking fly, about half an inch long to all appearance, fly very deliberately from tree to tree, I may say nearly twenty, and appeared to settle near the bottom, but its wings were scarcely quiet before it again took flight; and as it stopped at every tree it came to, I watched it very closely; at last it came to a tree which had the canker very bad just at the graft: this tree the fly took a fancy to, and having settled for about two or three seconds, it did the same at every knot it could find all up the stem ; after it had settled six or eight times (during which time it seemed very intent,) I knocked it down, and taking it in my hand, and it not being dead, I gave it a squeeze in the palm of my hand with

my thumb to kill it, which caused it to dis-

OF THE INSECT LAYING ITS EGGS. 71

charge several eggs, which I distinctly saw; they were round and almost as small as dust, of a light brown colour, and very hard ; I then examined the fly, which was not dead, neither could I kill it till I pinched the head ; it was a venomous looking fly, with a shining black head, and two prominent eyes, with two horns full a quarter of an inch long, the body of the fly was also black ; it measured three-quarters of an inch from the head to the tail, and an inch from the tail to the end of the horns ; it looked venomous, and was very handsome.

FIRST DISCOVERY OF THE INSECT LAYING ITS EGGS, WITH OTHER REMARKS.

Par. 82. I next turned my attention to the tree where it had been so busy, and examined the spots where I saw it settle, and there I saw in three different places an egg, but one in particular I saw distinctly, with a little mucus attached to it ; this induced me to mark the tree, and the spot where I saw the egg so distinctly ; I continued to watch it almost daily for about three weeks, when I saw a spot of white exactly where the egg was laid, and in a few days it covered about as much space as would contain a sixpence ; this was rather in a hollow where a shoot had been cut off, and the bark had not quite healed over ; I allowed the insect

72 FLIES TAKE SHELTER IN WET WEATHER.

to remain, to watch its progress, which I did more narrowly than I ever did before, and found it subsisted on the bark of the tree, till it gained strength sufficient to leave the web, which several would do some days before the rest, and then crawl away imperceptibly, leaving the part where they had been, completely blistered and up in lumps.

FURTHER DESCRIPTION OF THE LARGE FLY IN ITS PERFECT STATE.

Par. 83. Being thoroughly convinced it was all the same insect, I looked about among the apple trees, and saw several of these flies, but they flew and darted about so quick in the air, that it was a hard matter to knock them down, and very few were so large as the one before described : but later in the season, I found many as large ; the male does not appear to be so large as the female, excepting the head, which is larger.

WHERE THE FLIES TAKE SHELTER IN WET WEATHER

par . 84. The part in this large quarter of apple trees where I found the flies most, was for about thirty yards where some Wych Elms were in the hedge, and which produce large

OPERATIONS OF THE INSECT IN WINTER. 73

leaves, and in wet weather the flies were to be found under them for shelter.

THE MANNER THE INSECT OPERATES ON THE ROOTS IN WINTER.

Par. 85. In the autumn I discovered many of the insects crawling about the ground ; they would enter the cavities close to the apple roots, that are caused by the wind blowing the trees backwards and forwards : at this season, I have no doubt the insect is sufficiently sensible that the approaching cold season will not admit of her young surviving through the winter on the trees, and consequently makes its way to the roots for warmth ; for in the winter season, I have often found the insect in its white state on the roots under ground; but these always appear very small and weakly, compared to those in warm summer weather, and the fly appears to have great strength for its size, as I have seen it force its way into the earth ; in a most astonishing manner; but this singular insect, the large fly, I have brought to its perfect winged state, in a glass, .since I wrote the foregoing pages, which I now have by me, and likewise the piece of the tree where it had formed itself into a chrysalis ; I kept the fly alive nine

days .

74 SECOND CHANGE OF THE INSECT.

DESCRIPTION OF THE FIRST CHANGE OF THE VERY SMALL INSECT, ALLUDED TO IN PARAGRAPH THE SEVENTY-NINTH, WHICH CAUSES THE CANKER, AND BECOMES THE LARGE FLY.

Par. 86. Those versed in natural history, describe moths and all winged insects, to have various changes before they become winged, which is the last stage of their existence ; and I shall now state as plainly as possible the manner in which this insect goes through its different changes : it first enters a crevice in the apple tree, where it begins to feed on the inner rind, and the outside skin of the insect becomes a sort of dead substance, and the inside contains a very small maggot or grub, with a black head, which it puts out at one end for food ; the dry skin is retained most probably to keep it from the inclemency of the weather : its colour is nearly the colour of the bark of the tree, which makes it in this state almost imperceptible ; but during the winter, this small worm makes its way under the rind of the trees, and there hangs by its head, feeding on the juices of the rind.

SECOND CHANGE OF THE INSECT.

Par. 87. When they have cast this skin, (which is quite tough, but as thin as possible,)

INSECT BECOMING WINGED. 75

it begins to eat under the bark ; and in this stage it commits the greatest depredations, and soon becomes a good sized maggot. I am inclined to think from my discoveries this season, that the cold weather does not much affect them; for although we had much severe weather, from Christmas, 1822, to March, 1823, in the latter month, when I came to examine the trees where they were cankered, I found several which, had left the skin quite lively, and could see where they had been recently feed-

ing ; and others with their heads just coming out of the skin ; they adhere by their head to the tree, and if you remove them gently, they hang by a web to keep themselves from falling, and unless you examine them, you would suppose them nothing more than small morsels of dead leaf or bark.

THE THIRD CHANGE OF THE INSECT, AND ITS BECOMING WINGED.

Par. 88. The maggot, having grown to the size of about two-thirds of an inch, looks out for a convenient place in the tree, and after discharging a quantity of excrement, it forms itself into a chrysalis, and remains torpid for some time, when it quits the chrysalis, or shell; it then becomes the winged fly, and commences breeding as before described, after which it dies.

E-2

76 REMARKS RESPECTING OTHER INSECTS, FURTHER OBSERVATIONS,

, Par. 89. Now, I find from my further observations this spring, that many of the chrysalis turn into flies quite early, as I have found them in April on a warm day, and in their first state they appear black. I have examined a great many trees this spring, where the canker appeared, and there found the insect, in its larva state, of different sizes, and while in this state like a small slender maggot ; when you cut to the spot where they are concealed they throw themselves about in a violent manner, and will frequently drop down hanging by a web.

REMARKS RESPECTING OTHER INSECTS,

Par. 90. To speak of ^11 the insects which infest the vegetable tribe, is impossible, (at least I will leave it to entomologists) for, I believe it to be beyond the comprehension of human understanding, to follow the myriads of insects through their various changes, many of which, would be as difficult to discover as the apple-fly, which has been so many years tried at ; but, as they do not appear of that conse-

quence, they have not received that share of pains and trouble, at least, as far as regards myself: at the same time, I will give a brief description of a few> which have come under my notice^ to shew that there are others which

REMARKS ON BUTTERFLIES.

pass through nearly the same changes as the apple-fly.

DESCRIPTION OF THE SMALL BROWN CHAFER, WHICH IS SO INJURIOUS IN NURSERIES, &C.

Par. 91. The first I will mention is a small brown chafer, which is well known to nursery-men, particularly about London ; this chafer, like other chafers, is fond of laying its eggs under ground, close to a tree for protection ; they hatch early in spring, and become a small brown maggot ; it is a very great enemy to the apricot and other buds ; for early in the spring, when the insect comes to life, it crawls up the stem, and forms a sort of web for its protection beside the bud ; and when the young bud of the apricot puts forth, this insect wiU get into it and eat it off, and sometimes eat it completely out; the consequence is, if they shoot again, it is with twin shoots, and frequently so late that the trees do not grow near so strong. This insect, like the apple-fly, afterwards turns into the small winged chafer, as before described ; but there is another caterpillar or maggot, which is very injurious to buds in spring, it turns to a brown moth.

REMARKS ON BUTTERFLIES.

Par. 92. From the accounts I have read

78 DESCRIPTION OF THE SILK-WORM,

in natural history, together with my own observations, I find, the different sorts of butterfly go through similar changes, but at various periods, and each different butterfly differs equally in its caterpillar state : there are smooth caterpillars of different colours and

sizes, and some beautiful and hairy ; likewise, they vary in the different sorts of food they choose, but they all in their different seasons become winged.

DESCRIPTION OF THE SILK WORM.

Par. 93. The silk- worm goes through nearly the same changes, but at a different season to the last named ; the egg is hatched about the month of April or May, and then remains in the caterpillar or worm state till about July ; during this time it will consume a considerable portion of food if you give it what is fond of mulberry leaves are its greatest favourite ; it will then change into a pupa, which is more hard than the larva or worm ; in this state it remains some time, and having produced silk, it then turns to a moth, and after laying its eggs it very shortly dies.

THE REASON FOR INTRODUCING THE ABOVE INSECTS.

Par. 94. I would give a description of a con-

REASONS. 79

siderable number of other insects, but as this is a work not intended for that purpose it would only cause confusion. What I have already said, is merely to show to those wholly unacquainted with the various changes the insects go through, that the apple-fly is by no means extraordinary, when we look at the different changes of all these wonderful insects ; in fact, it is said by some naturalists, that many of those grubs which we find underground, go through four or five different changes before they become winged.

THE REASON FOR BRINGING OUT THE COMPOSITION TO PREVENT THE CANCKER, &C.

Par. 95. I now feel it but just to state to my readers, that having completed my experiments, and found them to answer my most sanguine expectations, I made bold to write to the Earl of Liverpool, offering the discovery to government; but on a subsequent interview

with T. Brooksbank, Esq. at Fife House, (his lordship's secretary,) he said, before government could notice it, it would be necessary to have strong proofs of its utility from the public. I therefore prepared a quantity of the composition, and made it up in packets at one shilling, one shilling and ninepence, and five shillings each, thereby giving every one, at a trifling ex-

80AGENTS FOR THE SALE OF THE COMPOSITION.

pence, the opportunity of a fair trial on their own trees ; this has had the desired effect, as a great quantity has already been sold, and a number of persons owning public nurseries and private gardens have become satisfied of its efficacy ; through which the demand is greatly increasing.

THE TOWN AGENTS FOR THE SALE OF THE COMPOSITION.

Par. 96.- It is sold under the title of the Chelsea Apple Powder, and may be had at the following London agents ; Messrs. Girmley and Co. Covent Garden Market, Messrs. Woodman and Seekers, No. 18, Piccadilly, corner of Air Street, and Messrs. John Hunt and Sons, Seedsmen, No. 53, High Street, Borough, and at the Manufactory, No. 9, Francis Street, Chelsea Common, Middlesex.

LABEL.

81

FORM OF LABEL PASTED ON EACH PACKET.

Par. 97. The following is the form of the label pasted on the packets.

TO
PREVENT AND CURE THE CANKER

IN

APPLE TREES,

CAUSED BY THE

American Blight.

THE

This valuable Composition, with little trouble, will effectually prevent the Canker in sound Trees, afford peculiar Nourishment, and make a perfect Cure of Canker-ed Trees, not past recovery; it will remain on the Trees till it has had the desired effect, cause the wounded Places to heal, produce a fine clear Bark, and retain its Virtues in any Climate.

CHEZiSEA

APPLE

Powder.

PREPARED AND SOLD AT

No. 9,
FRANCIS STREET,

Chelsea Common,

MIDDLESEX.

Direction* for Use.

When the Trees are quite dry, put the Composition in an open Vessel, add as much Water as will make it the substance of Pain', then, with a Brush, apply it all over the Stem, quite to the bottom, and a little underground ; if unplanted, apply it to the principal Roots, likewise the main Branches from the Stem; where the Trees are much Cankered, it should be first cut out, then use the Mixture thoroughly to those Places, and the Trees will become healthy and flourishing.

CAUTION NOT TO USE IMPROPER THINGS.

Par. 98.- -The remedy I have now introduced
E 3

82 DIFFICULTY IN CONVINCING.

although simple, will require some care in its application, to mind it is applied thoroughly as directed on the packets, for I have the satisfaction to state, it may be used over the bloom buds in March, or the most tender shoots in summer: it is the only effectual cure for this disease ever discovered, that is not injurious to the trees. Oils were at one time much used for it, but they were found too powerful ; indeed, I have destroyed many young apple trees by applying sweet oil. Coal tar has also been lately introduced, but that can only be used to old wounds, and then it makes a bad smell, and leaves the trees in half mourning; it is a most dangerous thing to apply to young trees, as I have seen trees

twenty years old destroyed with it, down to the very roots, but this has been when applied all over the principal part of the tree.

THE DIFFICULTY ^IN CONVINCING.

Par. 99. I am aware of the difficulties arising in persuading men against their own inclination, on what they are not personally acquainted with : for in almost every separate county in England, they have different ways of farming, and each supports its own opinions ; and this notwithstanding the wide dissemination of new and acknowledged improvements.

USEFUL REMARKS. 83

But although this is the case among agriculturists, it is carried to a far greater extent by horticulturists ; it would be an extraordinary thing indeed, for one gardener to prune and manage a tree to please another. At the same time, although they may differ much in their opinions, they may produce equally fine fruit, and keep their trees in equally good order.

But the subject before us, is of such great national importance, that every one must feel interested in it, who is fond of horticultural pursuits. The remedy is so very plain and easy, I think I need not recite my experiments, to convince the public of its efficacy. Nevertheless, I will give as much explicit information on the subject, as my memory, together with my memorandums, will furnish me with.

SOME USEFUL REMARKS.

Par. 100. I must beg first of all, to make this impression on the minds of my readers, to prevent any misunderstanding ; that is, that the powder is intended as a remedy for the canker : and although I have said it may be used on the most tender shoots in summer, yet be it understood, although it is necessary to use every means to check it when we see it raging in its white state, yet my object is, to preserve

84 TO PREVENT CANKER IN MAIN STEM.

the main stem and branches from the canker : this it will effect, and keep them free from moss, and other diseases, by applying the composition as it is directed, once in about two years. I have made the foregoing observations, to prevent any mistaken idea, of applying it to a tree, which is probably smothered with the insect in summer, and perhaps not half the eggs hatched. Wherever the brush should pass by, they will of course come to life, and there remain till they are sufficiently strong to leave the cotton-like web, when they instantly crawl to the ground, and finding the principal part of the tree not fit food for them, they will be sure to leave it, and will not deposit their eggs there again : indeed, I would undertake^ if twenty thousand clean standard apple trees were planted on good soil, and treated as will be hereafter described, that they should be as sound in fifty years hence as when first planted ; but the selection of clear trees ought not to be unnoticed, particularly where large orchards are planted.

TO PREVENT THE CANKER IN THE MAIN STEM,
&C. THE MOST NECESSARY.

Par. 101. To prevent the canker in the main stem must be allowed by all to be the most necessary to keep the tree in good bodily

HOW TO APPLY THE COMPOSITION. 85

health ; for it is of little use to keep the tops of our trees clear, if we allow the body to be eaten up and killed by piecemeal ; therefore, as I have before observed, when the insect changes into the small maggot, which some of the early ones do in the autumn, it then finds out its place of residence for the winter, and the spots generally fancied are those which have given harbour to previous generations, till from year to year they so eat away the tree, that we often see large trees almost eaten through the body.

HOW TO APPLY THE COMPOSITION TO YOUNG
STANDARD TREES.

Par 102. I shall first give directions how to apply the composition to young standard trees which are sound. When the trees are dry, put the composition in an open vessel, add as much water as will make it about the consistence paint is generally * used : when mixed thoroughly together, take a brush (a sort of painter's brush would do) and apply the mixture up the stem, and likewise to the leading branches, and if a crack should appear, be sure do not let the brush pass by, but give that an extra quantity. If the trees are unplanted, I should strongly recommend applying it to the principal roots with the brush, or if your ves-

86 HOW TO APPLY THE COMPOSITION.

sel were large enough, after the roots were pruned, dip the whole of the root into it, and the insect would never after get to the roots.

Why I recommend this is, because the insects frequently lay in the roots when they do not appear on the heads ; and as there is not a nursery round London, and I believe scarcely one in England, but what is now very badly infested with this insect, (although at the planting season, it is not much to be seen) it is highly necessary that every one who plants, should use his utmost endeavours to prevent this disease, or he had better at once give his money away than lay it out for apple trees, which would only stand and -annoy their owners, without any source of profit or pleasure ; I should recommend the application of the mixture to the stem, and leading shoots from the stem, about March on sound trees, and it will destroy the eggs of various other insects, at the same time, just as they are about to hatch. It may be applied wherever the insect makes its appearance, at all seasons, for which purpose the composition should be always kept in reserve.

As the insect is very apt to work its way into the tree where the branches leave the main stem, this part should be well brushed, and as

HOW TO APPLY THE COMPOSITION. 87

far up the limbs as you can conveniently reach, and by keeping the trees clear that height, you will ensure their being healthy and flourishing ; for it is a very rare thing to see a tree cankered, to injure it in the head, unless it is first cankered in or near the body ; and there appears to be a great degree of sagacity about these insects, for they always attack those trees, by far the most, which are cankered, and pass by those which are healthy, as if they were aware they should not be disturbed.

HOW TO APPLY THE COMPOSITION TO OLD STANDARD CANKERED APPLE TREES.

Par. 103. The next thing we will attend to is the old standard trees : now instead of a preventive, we want a cure, for there are but few old trees to be found without the disease : the operation these trees have to go through, I should advise to be left till after Christmas, as you would then destroy the insects which are in the trees, and consequently prevent their next brood.

In the first place, cut out the canker clean, (in which you will soon discover plenty of these small maggots) for where the trees are very bad you would not be able to get the solution thoroughly into the parts affected, without first

88 HOW TO APPLY THE COMPOSITION.

cutting away the canker ; this should be done as far as the tree is at all blemished, till you come all round to sound bark, otherwise it will not heal well and such trees as have moss on the stems should be thoroughly cleaned before the mixture is applied ; for this not only fedtfs on the tree itself, but is a complete harboui^for insects. The heads of the trees should be pruned, taking away all limbs that are cankered, unless you cut the canker out, and likewise all branches which are superfluous ; then apply the mixture thoroughly in all parts you can as before described ; and wherever a small crack appears in the bark, be sure not to forget an extra portion, for there is

almost sure to be a maggot ; also well brush the parts where the canker is taken out, and it will so change the flavour, the insect will never attack those places again : should the trees be very bad, you may add a small portion of oil, about a table-spoonful to a one shilling packet, and so in proportion to the larger packets. Why I recommend oil in this case, is because it will convey the mixture into the cavities, for if you spill oil on the floor, it will soon cover a much larger space than where it first fell, and the quantity recommended will not injure ; but this addition will be quite unnecessary on clean trees, as the composition used

DECAYED TREES TO BE DESTROYED. 89

as directed on the labels, will so change the flavour of the outer rind, that the insect will not attack it.

TREES PAST RECOVERY RECOMMENDED TO BE DESTROYED.

Par. 104. Where trees are so much eaten as I have seen some, that the main wood as well as the bark is decayed, I should recommend such trees to be destroyed, for they are only an incumbrance to the ground ; and although they may bear fruit, they are more loss than profit, for the trees have not strength to produce good fruit.

I last season took notice of a fine young standard Scarlet Pearmain about ten years old, full of fruit, which was very fine, excepting one branch, and on that the fruit was small, dwindling, and almost tasteless, with scarcely any juice ; on examination, I found that limb, very near the body of the tree, almost eaten through with the insects, and so much was the fruit altered in its' appearance, that I supposed it was another sort of apple on the tree ; therefore, this is a proof how it must change the flavour of our cider, as well as the fruit for all other purposes.

iO HOW TO APPLY THE POWDER.

HOW TO APPLY THE CHELSEA APPLE POWDER
TO DWARF TREES, WITH FURTHER PROOFS
OF ITS UTILITY.

Par. 105. We must now notice the dwarfs-
These trees pruned as described under the head
of pruning, may easily be kept entirely free
from the insect, and consequently canker, by
the following treatment : the trees having at-
tained the height you wish, use the mixture all
up the main branches, but be sure to use it
thoroughly round the branches near the stem ;
it also may be used over the bloom buds,
just before the buds burst. If this is done
thoroughly and with care, so as not to pass
over any cracks or holes, the trees may be
insured against canker with perfect safety. I
have had this summer, together with many of
my friends, an opportunity of witnessing the
good effects of the Chelsea Apple Powder in
this instance, on some apple trees in the garden
of Mr. Jones, Old Brompton, Middlesex. He
having some trees which were very bad with the
disease, intended throwing them away, and two
in particular which stood near together : I told
him they would recover if he used the compo-
sition ; he said he would try it, and by way of
experiment on the worst of the two, which
was one mass of corruption, from the root to

ON TRAINED TREES. . 91

the extremities of the shoots ; the tree, after
cutting away the worst places with the knife,
was dressed all over with the composition :
this was done early in March; it had the
effect of completely destroying the insect,
caused it to throw out vigorous shoots, and
every bloom bud that was left on the tree pro-
duced fine fruit, without the appearance of a
maggot, or any other insect, about the tree ;
while the tree which stood by it, was early in
June, as white as a sheet with the insect, and
nearly every shoot and bloom bud curled up
with a small maggot. Mr. Jones left them
standing during the summer in this state, for
any one, who might be so inclined, to see the
contrast; this exhibition has been productive
of both astonishment and conviction ; and will

no doubt continue so to operate on all who may yet visit the scene.

I could mention many other circumstances, but none could be more conclusive than the above, to shew the composition's powerful effects without the least injury even to the tender bloom buds.

WHAT MAY RELATE TO TRAINED TREES, &C.

Par. 106. Trained apples. From what has already been said, my readers may judge of

92 OBSERVATIONS.

all other ordinary cases, such as may relate to trained apples, &c., which therefore it is not necessary to particularise.

OBSERVATIONS.

Par. 107. Having given a copious account of this destructive insect, with a remedy, which I know to be safe, and the best my judgment could dictate, I must now leave it (and I do with confidence) in the hands of a generous public for support.

The great improvements making throughout the country in the present day, particularly in horticulture, aided as they are by the first people in the land, will evidently[^] reflect great honour on the country ; and should I, as an humble individual, be the means of laying the foundation for once more seeing our apple orchards flourishing, my ends will be answered.

I am aware from this insect breeding in the prolific manner it does, that unless it were to come under government authority, there would be no chance of effectually eradicating it from the country, yet I am convinced, under this system of management, trees are to be kept perfectly sound and flourishing : why, I say it is not likely to be eradicated, unless it is takeu

OBSERVATIONS. 93

in hand by government, is, because we are not all of one opinion ; s.ome laugh at the idea of discoveries, and say, " I will follow the old school," while others will despise them for their apparent absurdity : however, time proves all things, and the mortification our neighbours would feel in having their trees eaten up by the canker, while ours were healthy and flourishing, would be perhaps the most effectual way of producing conviction, and thereby bringing the composition into general use ; for the fly, finding our trees not in a fit state for its young, would naturally visit those of our neighbours, who were inclined by obstinacy to protect them.

As this insect has not been known in this country above thirty years, and probably not more than two or three flies of each sex in their larva or maggot state first imported, it shews with what facility it breeds ; for there is not a county in England but what is troubled with this insect ; in fact, so alarmingly so, that few gentlemen will plant on a large scale, knowing, that when the trees ought to be turning to profit, they are going to decay; the effect of which is already greatly felt by our agriculturalists, whose apples , having grown on diseased trees will not keep, and consequently, for some years past, our London markets have

94 OBSERVATIONS.

been principally supplied with foreign apples all through the Spring, at a season when the price would be of such signal advantage to our farmers ; in fact, I have been told by respectable salesmen, that a great many thousand pounds worth of French apples is brought into Covent-garden market every Spring, and the quantity every year increases ; this is the more afflicting, when I know that by proper management, there is no article at this time the land could be cropped with on a large scale, which would tend to a greater source of profit ; and as the interest equally affects the land owner and the occupier, their united exertions ought not to fail in endeavouring to annihilate this disease.

Although it has been thought by some nurserymen in the neighbourhood of London, that the introduction of the Chelsea Apple Powder would be a great injury to that branch of the profession, I am confident they have taken a wrong view of the subject, for instead of diminishing, I am sure it would cause a much greater demand for apple trees.

For some years past, dwarf apple trees have been highly recommended as not being so subject to the canker ; but those trees in various

OBSERVATIONS. 95

places, to my knowledge, are equally subject to the disease as they become aged, and consequently, in time people would become tired of planting altogether.

/ *

Before I finish my observations, I must ask

my readers what we should lose by the total loss of our apples : First, the loss of one of the finest productions of our country, the cider, for which we are so celebrated.

Secondly, we lose the dessert which this fruit provides, at seasons when we can scarcely have any other of our own produce. And lastly, we lose the pudding and pye, which we cannot conveniently procure at all seasons from other fruit, which is from the tart on the King's table, to the dumpling made for the peasant's child, of universal service, as well as a luxury.

96 OK PEARS.

CHAPTER III.

On Pears, Plums, Cherries, Peaches, Nectarines, Apricots, Grape Vines, &c. fyc.

ON PEARS.

Par. 108. What has already been said on the culture of apples, will generally apply to pears ; the budding, grafting, pruning, and general management being the same, excepting that they are worked on different stocks. The stock which is generally used, (and which is decidedly the best for standard pear trees,) is raised from the seed of the small wild pear, which like the true crab is more durable than those grown from other pears. It has many years been the practice in France, and several parts of the Continent, to graft pears on quince stocks, and in this country they have been found to answer extremely well as dwarfs, for they come into bearing much earlier than those on the pear

ON PEARS. 97

stock, and the fruit exceedingly fine, and by keeping them spurred like dwarf apple trees, they may be kept within any compass you wish, as they do not grow near so strong as those on the pear stock.

Many sorts of pears, which are generally grown against walls, have got the name of bad bearers through bad pruning, it being a general method to spur them all indiscriminately ; at the same time, some sorts scarcely ever bloom except at the extremities of the young shoots, therefore, if they are removed it is impossible to have fruit : from the above cause, I have seen standard Gansell's Burgamots in the natural ground, with a fine crop of fruit, while those against the wall have scarcely had any excepting at the extremities.

This may be easily remedied, when you have discovered which sorts bear at the ends of the shoots, by leaving a sufficient quantity of young wood for that purpose.

The confusion in the names of pears is quite equal to the apples ; I shall therefore confine myself in the explanatory list of pears which follows, to such sorts as are known to be good ; and such as are sufficient for all purposes.

98 LIST OF PEARS.

EXPLANATORY LIST OF PEARS.

Par. 109. 1. Green Chisel; this is a small green pear, very full of juice, and is remarkably sweet ; it will ripen in early seasons in July.

2. Red Muscadelle ; is an early pear, large and handsome, of a yellow colour, and next the sun rather red ; the flavour is very rich and fine ; it is ripe about the end of July, and will frequently produce a second crop in the Autumn.

3. Jargonelle ; this is a fine early pear, ripe about August ; it is of a green colour with a little russet next the sun, it generally bears well.

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4. Windsor Pear ; this is a very fine fruit if eaten in proper season ; it is of a green colour, but when quite ripe turns yellow ; it should be eaten just as it begins to change colour, or it will soon become mealy and good for nothing ;

it ripens about the end of August.

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5. Hambden Burgamot; this is rather a large pear, fine melting flesh and full of juice ; it is ripe about the end of September.

6. Autumn Burgamot ; this pear, which is o* rather a small size, and handsomely formed, is

LIST OF PEARS, 99

one of the finest flavoured melting pears in cultivation ; it is in perfection in October.

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7. Crasanne; this is a very fine pear for the

wall ; the flesh is very tender, and full of fine sweet juice ; I know not so good a pear in December and the beginning of January.

8. Colmar, is a fine rich sweet pear; it is best adapted for the wall, being a bad bearer as a standard ; it is in perfection about January.

9.. Virgoleuse ; this is a fine melting pear, full of rich juice; it would be more generally cultivated, but in wet seasons they are very apt to crack ; it ripens about the end of December.

10, St. Germain ; this is a very fine melting pear, full of juice and a general bearer ; an east wall will bring the fruit to the greatest perfection ; at the same time, they will do well as standards in sheltered situations; they are ready for the dessert in December, and I have eaten them in March,

1 1 . Spanish Bonchretien ; this is a good winter pear, and rather generally admired ; it grows large against a wall, and will keep till January.

F 2

100 LIST OF PEARS.

12. Brown Beurre; this is one of the best late Autumn pears we have ; they do best against a wall, where they will grow large, of a brown colour, and rather tinged with red ; it is a fine juicy melter; and is in perfection through November.

13. Winter Bonchretien; this is highly esteemed for its long keeping ; it is very large, full of rich juice, and will keep till June.

14. Chaumontelle ; this is a fine rich juicy pear ; is a great bearer either as a dwarf or standard, and will come into eating in December.

15. Poire D'Auch ; this is a handsome green pear of excellent flavour ; is a good bearer, and I may add, there are but few winter pears which equal it; it is fine from December to the end of March : it is best suited for the wall.

16. Citron D'Carlmes ; this is rather a small pear of a greenish colour, it is a great bearer, and is ripe in July.

17. Williams's Bonchretien; this is a very juicy fine pear ; is a good bearer, and ripens about September.

LIST OF PEARS. 101

18. Swan's Egg; this pear is too generally known to require much comment ; it is of an egg shape, and of a brownish green colour ; it is a melting pear, full of very fine flavoured juice, and one of the greatest bearers in cultivation; it is ripe in November, and is good at Christmas,

19. Paddington or Tarling; this pear is much esteemed for its long keeping ; it is a handsome fruit of a yellowish colour when ripe ; it is good from March till the end of May best suited for the wall.

20. Golden Buerre ; this is a fine fruit, full of very fine juice with melting flesh; it is in perfection about November, and is a general bearer against a wall.

21. Bishop's Thumb ; this pear will do well for wall or standards ; it is a long brown fruit, large towards the eye, and tapering towards the stalk ; it is a great bearer, and is good in December.

22. Gansell's Burgamot; this pear for its rich melting flesh, and abundance of fine flavoured juice, is decidedly the finest pear of its season ; it is rather a shy bearer, but will do best against a wall ; I have often seen fine crops

102 LIST OF PEARS.

on standards; it is in high perfection in November.

23. Cardiliac; this is a large pear generally used for baking, and if they can be gathered sound late in the Autumn, they will be good

for that purpose through the winter ; it is a good bearer, but being generally cultivated as standards, and the fruit growing so large, the high winds are very apt to shake them off.

24. Seckle ; this pear among the new varieties is very much esteemed; it is of a middling size, full of very fine sweet juice, and will bear well as standards, is in eating about October.

25. Maria Louisa; this is a very fine pear; the flesh is melting and full of fine juice ; the wood is weeping and best adapted for the wall : at the present day it is esteemed as highly as any of the new varieties, and will no doubt be generally cultivated.

ALPHABETICAL LIST OF PEARS.

Those marked with an Asterisk(*) are described in the explanatory List.

Par. 110.

Ashton Town Awken

* Autumn Burgamot Beurre De Roi

PLUMS.

103

*Bishop's Thumb

Bloody

Britannia

Brocas Burgamot

*Brown Beurre

Burdellieu

*Cardiiiac

Catherine

*Chaumontelle

*Colmar

Colmar D. Pache

*Cresanne

* Citron De Carlmes

Dauphine

*D'Auch or Poire D' Audi

Delicis Lardenpont

Dutch Burgamot

*GanselPs Burgamot

Germain Muscal

^Golden Beurre

Gray Beurre

* Green Chisel

*Hambden Burgamot

Holland Burgamot

^Jargonelle

Lammas

La Pastorelle

Little Muscat

*Maria Louisa

Moorfowl Egg

Napoleon

Orange Burgamot

*Paddington or Tarling

Quos Madam

*Red Muscadelle

*Seckle2

* Spanish Bonchretien

*St. Germain

Summer Burgamot

* Swan's Egg

*Uveders St. Germain

*Vanmons

Vergoleuse

Vine Pear

Williams' Bonchretien

*Windsor

*Winter Bonchretien

WinterRusselet

PLUMS.

Par. 111 . We have not to complain so much of the coming of names for plums, as for apples and pears : nevertheless, a confused nomenclature has found its way among them ; however, I trust what I shall mention in the explanatory

104 PLUMS.

list will be so clearly described, that every person will be satisfied of his competency to decide on each particular sort when he sees the fruit ; and more especially as plums cannot be so easily mistaken, because the soils or situation will not have the same effect in changing their character, as they have on some other fruits.

EXPLANATORY LIST OF PLUMS.

Par. 112. Orleans; this plum is a fine large rich fruit, it is a great bearer, and good for all purposes.

2. Fotheringham, is a very good plum ; it is of a dark red colour, of excellent flavour, and is a tolerable bearer.

3. Blue Perdignon ; this plum is of a very dark blue colour, is good flavoured, and ripens in August.

4. White Bonum Magnum, or Egg Plum ;

this is a very great bearer, the fruit is large, in the form of an egg, and very handsome ; it is not a bad eating plum, though it is principally used for baking ; it ripens in September.

5. Red Bonum Magnum, or Red Imperial ;

PLUMS. 105

this is a large red plum in the form of an egg,

is a good bearer, but like the white, it is principally used for culinary purposes; it ripens early in October.

6. La Royale ; is a very fine flavoured plum of a red colour ; this being rather tender in the bloom, it succeeds best against a west wall ; it ripens late in September.

7. Apricot Plum; this is a large fine plum, but Botmuch cultivated on account of its shy bearing.

8. Drap d'Or; this plum is very much admired and is a general bearer, particularly against a wall ; it ripens late in September.

9. Green Gage; this plum is too well known to require much being said of it ; it is decidedly the finest plum in cultivation ; it ripens late in August.

10. Blue Imperatrice ; this is one of the best late plums we have ; it is best adapted for the wall, and when perfectly ripe, there is no plum of its season equal to it for sweetness ; it ripens in October, and I have eaten fine ones from the trees in the middle of November.

F3

106 PLUMS.

11. Brignole ; this plumb when thoroughly ripe is like a sweetmeat, but it is not a very good bearer it ripens in September.

12. Saint Catharine; this is a good plum and

is a good bearer; it is ripe in September, and will hang a long time on the tree.

13. Winesour; this plum is much esteemed for preserving ; it is a late plum, and is a good bearer.

14. La Mirabelle; this is a handsome small yellow plum, very full of juice ; it is ripe about the middle of September and is a good bearer.

15. Coe's Golden Drop ; this plum is of a fine amber colour, much in the form of the white egg plum, and of about half the size ; they bear well as standards or against the wall, and when ripe, the flavour is very fine, and certainly the most beautiful plum for the dessert of its season ; it ripens towards the end of September.

16. Kirke's fine Red t^lam; this plum, which comes in just after the Orleans T is large, fine flavoured, and is a good bearer ; it deserves to be brought into general cultivation.

LIST OF PLUMS. J07

17. Street's Plum, or St. Lowe; this plum,, which is a great bearer, exceeds all I ever saw for size ; it is much in the form of the Orleans, but considerably larger and very handsome ; it is of a red colour, and generally carries a good bloom on the fruit ; they bear well as standards, or against the wall ; it ripens about September.

18. Blue Gage; this is a most excellent plum for the wall, the flavour is very fine, and it is generally a good bearer.

19. Early Orleans; this is rather earlier than the old Orleans plum ; it is a good bearer, and the fruit is very much admired.

20. Yellow Orleans ; this is a beautiful transparent plum, nearly as large as the old Orleans, good flavoured, and very handsome for the dessert ; it will bear well as a standard ; it ripens about September.

ALPHABETICAL LIST OF PLUMS.

Those marked with an Asterisk (*) are described in the explanatory
List.

Par. 113.-

Admirable Avone

*Apricot Plum *Blue Perdigron

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CHERRIES,

*Brignole

*Blue Gage

*Blue Imperatrice

Blue Matchless

* Catharine

*Coe's Golden Drop

*Drap D'Or

Early Amber

*Fotheringham

Goliah

* Green Gage

Gross Mirabelle

Jaune Hative

*Kirke's large Red

Kirke's fine new American

*La Mirabelle

*La Royale

*Magnum Bonum White

* Magnum Bonum Red

Mirabelle

Morocco

*Orleans Red

* Early

New Early

* Yellow

Precos De Tours

Pruin

Queen Mother

Reain Claude Violet

Red Diaper

Royal Dauphin

* Street's Large Red

Sharp's Emperor

S toneless

Violet

White Bullace

White Damson

White Imperatrice

White Pear

White Perdignon

*Wine Sour

Yellow Gage

CHERRIES.

Par. 114. The culture of cherries in this country being rather large, and profitable to grow, it is necessary to make a few observations on the constitution of this tree.

There is no fruit tree I know of more subject to gum than the cherry, which is frequently

CHERRIES. 109

caused by the land, particularly if the bottom is strong clay; the most essential point to be observed in planting orchards of this fruit, is to select those trees which have been budded standard high, for those budded within a few inches of the ground, and trained up for standards, are very liable to sink below the bud, which is almost sure to cause the tree to decay early.

Likewise, this should always be observed in planting of dwarf trained cherries, to keep the bud or graft a few inches above the surface of the earth ; for if cherries once begin to gum* they seldom recover. I have given a description of some of the best sorts, which will be found in the explanatory list.

There is no stock so durable for budding and grafting cherries on as the small wild black cherry, the seed of which should always be selected for that purpose.

EXPLANATORY LIST OF CHERRIES.

Par. 115. I. May-duke; this cherry which ripens early in June against a south wall, is one of the best cherries in cultivation : they are great bearers as standards, and the flavour is very fine.

110 CHERRIES.

2. Ronald's Black heart or Circassian ; this is a fine large black cherry and good bearer; it would deserve general cultivation, but the wood in some soils is very apt to decay; it ripens early in July.

3. Black heart ; this is a well known good fruit, handsome, and a good bearer.

4. Arch-duke ; this is an exceeding fine cherry, larger than the may-duke, and a good

bearer; it is not properly in perfection till July. This is a valuable cherry to grow for the market.

5. Morella; this cherry is one of the greatest bearers, either as standards, or against a wall, we have in cultivation; it is large and handsome, and in the month of October is nearly black, at this season it is a great addition to the dessert ; it is also fine for tarts and j>reserving, and by far the best for putting in brandy.

6. Bleeding Heart; this is a very fine fruit, is ripe about the middle of July, but it is not a general bearer.

7. Harrison's Heart ; this by many persons is

CHERRIES. 111

considered a very fine cherry ; it comes in late for the dessert, being ripe in August.

8. Black Coroon ; this is a very fine cherry, and generally is a good bearer ; it ripens in July and August.

9. Biggerow ; this is a very fine cherry, and is a great ornament to the dessert in July ; they will do well as standards, but the fruit will come finer against a west wall .

10. Kentish; the wood of this cherry very much resembles the wood of the Morella, and is one of the best to plant for orchards, the constitution of the tree being strong, and the demand for the fruit great, being consumed in large quantities for kitchen purposes ; it likewise very much resembles the Flemish, for which it is a good substitute, being a better cherry and a better bearer.

11 . Florence ; this is a most beautiful cherry for the dessert, and will bear well as standards, but the fruit will grow larger against the wall,, the flavour is excellent.

12. Waterloo; this cherry is one of the fine productions of Mr. Knight; it is a very

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LIST OF CHERRIES.

fine sweet flavoured fruit, and tolerably productive.

ALPHABETICAL LIST OF CHERRIES.

Those marked with an Asterisk (*) are described in the explanatory List.

Par. 116.

Adam's Crown
Anfoer Heart

* Arch-duke
*Biggerow
*Black Coroon

Black Eagle
*Black Heart
Black Tartarian

* Bleeding Heart
Carnation
Churchill's Heart
Double Blossom
Early May
Elton

Flemish
*Florence

-

Graffion
Harrison's Heart

Holman's late Duke

* Kentish

Kensington Duke

Knight's new Black

Lady Southampton's

Duke

*May-duke

Montmorencie

*Morella

Ox Heart

* Ronald's Black Heart or

Circassian

Waterloo

Weeping

Wentworth Heart

White Heart

M

White Tartarian

APRICOTS.

Par. 117. Various have been the opinions

respecting the stocks generally used for

budding apricots, as they will grow on the

fv*7>, muscle, the Brussels, and the common plum

~-< *"*"*"*"

f~r~rj&^', Af4-?j

LIST OF APRICOTS. 113

stock ; but it is a general opinion (and not without foundation) that those budded on the Brussels stock are more liable to decay.

Having tried the whole of the above stocks for years past, I find none so well suited for Apricots as the common plum stock, usually called commoners, except the Royal Orange, which does best on the muscle ; there maybe many who will not agree with my recommending the common plum before the muscle, for the Moor Park, but I give it the decided preference.

EXPLANATORY LIST OF APRICOTS.

Par. 118. Moor Park; this apricot is considered decidedly the best in cultivation ; it is a very great bearer, the fruit is very fine, and deserves to be recommended before any other ; it ripens about the middle of August.

I have seen the Moor Park bear well a* standards in the open ground.

2. Peach Apricot; this is a fine large apricot, very, much like the Moor Park, and ripens about the same time.

3. Turkey ; this is a tolerably good apricot,

LIST OF APRICOTS.

of rather a deep colour, but not very full of juice, it ripens late in August.

4. Red Masculine ; this should always be planted 'amongst a collection, for it comes in earlier than most other sorts ; it is a small fruit, red towards the sun when ripe, and is esteemed for being ready before other sorts, it ripens in July.

5. Algiers ; this is a yellow apricot, of rather a flat shape, and good flavour ; it ripens in August.

6. Small Orange Apricot; this is a bearer, and is grown principally for preserving, and tarts.

7. Royal Orange ; this is a fine apricot of a yellow colour, it is ripe in August.

8. Roman ; this is a large yellow apricot of a good flavour, it is ripe about the middle of August.

; *Breda ; this is an excellent apricot, large, of a yellow colour, full of fine flavoured juice, and is a good bearer, ripe about the end

LIST OF APRICOTS. 117

of August: it may be planted as an open standard.

17. Brussels; this is rather a small apricot, but is a very great bearer, and is generally preferred for planting as standards, in the open ground ; it is of a red colour towards the sur^ and looks very handsome on the trees ; it has a tart flavour which is generally admired when grown on the open standards, it is ripe in September.

ALPHABETICAL LIST OF APRICOTS.

Those marked with an Asterisk (*) are described in the explanatory

List.

Par. -119.

Alberge Persian

*Algiers Portugal

Black Provence

*Breda *lled Masculine

*Brussels * Roman

Dutch * Royal Orange

Gold Blotched Leaved Temple

Graver's Breda Transparent

*Moor Park *Turkey

*Orange White Masculine

*Peach

PEACHES AND NECTARINES.

Par. 120. Peaches and Nectarines being so much alike in nature and cultivation, what is said of one will equally apply to the other ;

116 PEACHES AND NECTARINES.

it appears from the best authorities, that the almond was the original parent of the above fruits, and they grow freely budded on the almond stock, but they are far more durable when budded on the plum. To enter here into a detail of the different peaches and nectarines which grow best on the different sorts of plums, would be wholly unnecessary, as I do not consider myself as writing complete and full instructions to render every one of my readers competent to fill the arduous labours of a nurseryman, and to particularize each would rather tend to confuse than inform ; suffice it to say, that neither peach or nectarine will succeed on the Brussels Stock, and the stocks generally used for peaches and nectarines which they like most are the Muscle and Pear plums.

It often occurs, that peaches and nectarines swell too large for the stock they are budded on ; this plainly denotes the stock is not suited to the constitution of that variety ; and this the nurserymen in the neighbourhood of London have made their study, and have brought it to that perfection, as to give them a decided superiority over most of their country contemporaries, who, generally speaking, have not sufficient practice in this department ; indeed it is no small matter of consideration, for it is not

LIST OF PEACHES. 117

only the sum paid for the trees, but the mortification (which can only be known to those who have experienced it) after having planted the trees a few years, of seeing them diseased and gradually dwindling away. Peaches will grow by grafting, but they never do well, being sure to gum, and get diseased where the scion is put on the stock. In the explanatory list will be found a description of the best sorts, with their seasons for ripening, &c.

EXPLANATORY LIST OF PEACHES.

Par. 121 Noblesse ; this peach is large and handsome, of a red colour where they are exposed to the sun ; it is a fine melter, and very full of rich juice ; it is a good bearer, and ripens early in September.

2. Montauban ; this is a fine melting peach, and full of juice, of a deep red towards the sun ; it is a good bearer, and ripens early in September.

3. Vanguard ; this peach is in every respect so much like the Noblesse that many persons think it the same, but it is not ; the tree is rather of stronger growth, and the fruit something larger ; there is but little difference in their time for getting ripe.

118 LIST OF PEACHES.

4. Red Nutmeg ; this is a small peach of a deep red colour, and a good bearer ; it ripens early in August, for which it is much esteemed.

5. Early Ann ; this peach is admired for being early ; it is a good peach, and ripens about the middle of August.

6. Royal George ; this is a fine old peach, of a high colour next to the sun ; it is full of fine sweet juice, a good bearer, and ripens early.

7. French Mignonne ; this is a large beautiful peach of a red colour, a fine melter, and full of sweet juice ; it is a good bearer, and ripens late in August

8. Royal Kensington; this is a very fine peach, and considered by many persons to be the same as the French Mignonne ; some trees being sent from France as a present to her Majesty, Queen Charlotte, it was called the Royal Kensington.

9. Bourdine; this is a fine melting peach, of a red colour next to the sun ; it is a great bearer, and ripens about the end of September.

LIST OF PEACHES. 119

10. Red Magdalen ; this is a large beautiful peach, of a deep red colour, full of fine rich juice, and ripens early in September. I have seen this peach bear plentifully on standards in the open ground.

X

1 1 . Chancellor ; this is a fine old peach, with melting flesh, full of rich juice, and very handsome ; it ripens early in September.

12. Rosanna ; this is one of the greatest bearers in cultivation; it is of a deep purple next the sun, and is considered a good peach ; it will bear _well as a standard in the open ground ; it ripens in September.

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13. Early Gallande ; this peach is highly esteemed, and is certainly one of the best peaches we have ; it is a great bearer, very handsome, and ripens early in September.

14. La Teton de Venus ; this is a fine rich peach, rather a long form, of a pale red, and ripens late in September.

15. Early Admirable; this is a large fine peach, of a beautiful red colour next the sun ; it is full of fine sweet juice, and ripens early in September.

120 LIST OF PEACHES.

16. Monstrous Pavie of Pompone; this is called by our market gardeners a Cling-stone Peach, but the French call all Pavies which do not come clean from the stone ; it is cultivated more for its size and beauty, than its excellence ; it ripens about the middle of October.

17. Grimwood's Royal George; this is a very fine melting peach, a great bearer, and ripens late in August.

18. Catharine; this is a late good peach, but will adhere to the stone; it is of a fine red colour towards the sun, is rich, and full of juice ; it ripens late in October.

19. Late Admirable ; this is a very fine melting peach, handsome, full of juice, and ripens late in September.

20. Old Newington; this peach is handsome, and of a deep red towards the sun ; it is tolerably full of juice, but it will adhere to the stone ; it ripens about the end of September.

21. Double Swalsh ; this is a very fine melting peach, is ripe early in September.

22. Smooth leaved Royal George; this is

LIST OF PEACHES. 121

most excellent peach, full of fine rich juice, handsome, and one of the greatest bearers we have, it is ripe early in September.

23. Violet Hative ; this is a fine high coloured peach, melting flesh, with an abundance of rich juice; it is a good bearer, and ripens late in August.

24. Millet's Mignon ; this is a very fine large melting peach, and excellent for forcing, it not being so subject to mildew as some sorts ; it is a good bearer, is ripe early in September.

ALPHABETICAL LIST OF PEACHES.

Those marked with an Asterisk (*) are described in the explanatory List.

Par. 122.-

Acton Scot Downton

Belgarde *Early Admirable

Bell Chevreux * Ann

*Bourdine Avant

Braddick's Purple Avant

BuckinghamshireMignon * Gallande

Catharine Purple

* Chancellor Newington

Double Blossom *French Mignon

* Swalsh *GrimwoocTs Royal George

Montagne Gross Mignon

G

122 LIST OF NECTARINES,

f Incomparable *Nutmeg Red

Java White

*Late Admirable *Red Magdalen

Late Gallande *Rosanna

fLa Teton D 1 Venus * Royal Kensington

Lome's Large Melter *Royal George

*Millet <l s Mignon * Smooth Leaved Royal

*Monstrous Pavie of Pom- George

pone ^Vanguard

^Montauban * Violet Hative

*Newington White Magdalen

Nivette Yellow Alberge

*Noblesse

EXPLANATORY LIST OF NECTARINES.

Par. 123. 1. Elruge ; this is one of the finest nectarines we have ; it is of a good size, and a great bearer ; the colour is a dark red towards the sun, and a yellowish green next the wall ; the flesh is fine and melting, and full of sweet juice ; it ripens late in August : it is also a fine nectarine for forcing.

%

2. Newington; this is a very good nectarine, and a great bearer, of a fine red colour, it adheres to the stone, but is full of fine sweet juice ; it ripens early in September.

3. Red Roman ; this is an old well known good nectarine, of a deep red or purple next

LIST OF NECTARINES. 123

the sun, and rather yellow on the wall side ; it is a good bearer, and ripens early in September.

4. Brugnion ; this is a good nectarine, of a deep red towards the sun, and a pale yellow next to the wall ; it is fine eating when full ripe from the tree, but soon loses its flavour after \t is gathered ; it ripens late in August.

5. Murrey ; this is a very fine nectarine, of a purple colour towards the sun, large, a good bearer, full of fine sweet juice, and may be considered one of the best ; it ripens early in September.

6. Golden or Temple Nectarine ; this is handsome, of a light red towards the sun, and

yellow on the wall side ; it has plenty of juice*
and is generally admired ; it ripens late in
September.

7. Violet Hative ; this is a most excellent
nectarine, of a deep red towards the sun; it is
a fine rich melting fruit, full of sweet juice,
and a good bearer ; it ripens late in 'August.

8. Fairchild's Early; this is a small early
, nectarine, of a fine red colour, the flesh is melt-

G 2

124 GRAPE VINES.

ing and full of fine juice ; is ripe about the mid-
dle of August.

9. Vermash ; this is a fine late nectarine, of a
green colour, a little inclined to red towards
the sun ; it ripens late in September.

10. Italian ; this is a fine large nectarine, of
a deep red next the sun, full of rich juice, and
is greatly admired ; it ripens early in Sep-
tember.

ALPHABETICAL LIST OF NECTARINES.

Those marked with an Asterisk (*) are described in the explanatory
List.

Par. 124.

Aromatic *! New White

Brugnion Old White

*Elruge Peterborough

*Fairchild's Early *Roman

Genoese St. Omers

*Italian *Temple

* Murrey * Violet Hative

Newfoundland * Vermash

*Newington

GRAPE VINES.

Par. 125c The principal part of this delicious fruit is grown in hot-houses and vineries, as our climate will not admit of their coming to

GRAPE VINES. 125

perfection in the open air, excepting a few sorts. Those will be found in the explanatory list which will suit the different situations best-

I know of no grape for the open wall to equal the Royal Muscadine ; it seldom fails to ripen, is a great bearer, and a most excellent grape for the dessert ; it also makes very fine wine.

EXPLANATORY LIST OF GRAPE VINES.

Those marked with W. are for the Watt those V. are for the Vinery and those H. are for the Hothouse.

Par. 126. 1. Royal Muscadine, by some called the Malmsey ; this is an excellent grape for the wall or vinery, the berries when ripe are of an amber colour, large, round, and very fine flavoured ; it is one of the best white grapes we have for the open wall, for it is a great bearer and seldom fails to ripen. W. V. H.

2. Black Muscadine ; this is a great bearer, and will often ripen against the open wall ; the berries are handsome, having a very fine purple bloom. V.

3. Black Damascus ; this is a very fine large black grape, full of rich juice, and highly esteemed. H.

126 GRAPE VINES.

4. White Muscat of Alexandria ; this grape is in high estimation for the hot-house, the berries are of a fine oval shape, the bunches

long and large, and the flavour much admired.
H.

5. White Muscat ; this is a good bearer, with large berries of rather an amber colour. V. H.

6. White Chasselas, called by some the White Muscadine ; this is a very good grape for the wall, the berries rather resemble the Royal Muscadine, but are not so large. W.

7. Red Muscat ; this grape is red, with oval shaped berries. H.

8. The Black Tripoli; this is a very fine black grape, with large berries, full of fine rich juice. H.

9. Black Muscadel has rather a peculiar flavour, but is generally considered pleasant, the berries are black, of an oval shape, and large. H.

10. Red Muscadel ; the bunches of this grape gro'w very large, and likewise the berries, which are red. T.

GRAPE VINES. 127

11. Black Alicant or Spanish; this is a tolerably large sized black grape, and the flavour very generally admired. V. H*

12. Black Frontinac; the berries of this grape are not very large, full of fine rich juice, and are greatly admired. V. H.

13. White Frontinac; the berries of this grape are small and round, the bunches grow long and tolerably large ; the juice has a very peculiar flavour, but is, highly esteemed. W.

14. Grizzly Frontinac ; this grape is rather of a brown red colour, very fine, and generally admired. V. H.

15. Red Frontinac; the berries of this grape are rather large, of a dingy red colour ;* it is

considered a very fine grape. V. H.

16. Black Hamburgh ; this grape, for the hothouse or vinery, cannot be excelled; the berries are large, round, and handsome, and the bunches well formed : it is a great bearer, and of excellent flavour. V. H.

17. Red Hamburgh ; this is a tolerably good

GRAPE VINES.

grape, the berries are of a dark red colour. V. H.

18. White Sweet Water; the flavour of this grape is most excellent, the berries are of a tolerable size, but. the bunches do not grow handsomely. W. V. H.

19- New White Sweet Water; this is a most excellent grape, a great bearer, and the bunches not so irregular as the former. W. V. H.

20. Black Sweet Water; this grape has a small sweet berry which is very liable to crack, consequently against the open wall is much destroyed by birds and flies; it is an early grape. W. V.

21. Black Cluster; this is a small black grape, a great bearer, and covered when ripe with a fine bloom. W.

22. White Raisin; the berries of this grape are very large, with a thick skin, the bunches also grow very large and handsome. H.

23. Claret; this grape has small blackberries, with red juice ; it is not an agreeable fruit to eat, but makes excellent wine. V. H.

GRAPE VINES. 129

24. Lombardy; this is a large red grape, the bunches grow very large and are full of rich juice. V. H.

25. St. Peter's ; this grape is very black when ripe, the berries are large, of an oval shape, and the bunches very large ; it is a good grape. V. H.

26. West's St. Peter's ; this is a fine black grape, now in high estimation, the bunches come fine, the berries large, and flavour excellent. V. H.

%7. Sir Abraham Pitcher's ; this is a large fine black grape, and greatly admired. V. H.

28. Black Prince; this is one of the best black grapes for the natural wall, as it seldom fails to ripen, the bunches grow large, particularly in the vinery, and the berries, which are tolerably large, are full of fine sweet juice ; it is now very much in request. W. V. H.

29. White Tokay; this is a fine grape of very delicate appearance, but rather a bad bearer. V.

30. Black Portugal ; the berries of this grape, are of a middling size, and in favourable

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LIST OF GRAPE VINES.

seasons will ripen against the natural wall ; it is a good grape. W. V. H.

ALPHABETICAL LIST OF GRAPE VINES.

Those marked with andsterisk(*)are described in the explanatory

List.

Par. 127.-

Aleppo

*Black Alicant

Cluster

* Damascus

Esperion

Frankendali

* Frontinac or Mus-
cat Noir

Gibraltar

* Hamburgh

Lisbon

Morillon

Morocco

* Muscadel

Muscadine

Muscat

* Portugal

* Prince

* Sir Abm. Pitcher's

* St. Peter's

* Sweet Water

* Tripoli

*Chasselas

*Claret

* Grizzly Frontinac
Golden Galacian

*Lombardy

Malmsey

Miller's Burgundy

Malvoise or Blue Tokay

Muscat of Alexandria

Muscatelle

*New White Sweet Water

*Red Frontinac or Muscat
Rouge

Constant! a

* Hamburg

* Muscadel

* Muscat

Raisin

Smyrna

Muscat of Alexandria

Muscat of Jerusalem

Syracuse

*Royal Muscadine

* West's St. Peter's

LIST OF FIGS. 131

*White Sweet Water White Muscat of Lunel

* Frontinac Cornichon

* Muscat of Alex- Hamburg

andria Olcobaca

Nice Morillon

Parsley Leaved Muscat

* Raisin * Teneriffe

Syrian * Tokay

EXPLANATORY LIST OF FIGS.

Par. 128. Yellow Ischia, is a large fine flavoured fruit with a yellow skin and deep red flesh ; it is ripe about the middle of October.

2. Brown Naples Fig ; this fruit is long, of a brown colour, well flavoured, and is a good bearer; it ripens early in October. In good seasons this fig will ripen well on standards.

3. Green Ischia; this has a thin green skin with a brown cast ; when ripe the inside is a deep red inclining to purple ; it is a good fig and ripens late in September.

4. Malta; this is a fine flavoured, small brown fig ; the wood is rather tender, but if the wood ripens well, it is generally a good bearer ; it ripens early in September.

5. Black Ischia ; this fig is one of the great-

132 LIST OF FIGS.

est bearers we have ; the fruit when ripe is nearly black, of a small size but finely flavoured; it is good for forcing, wall or standards, and ripens early.

6. Large White Genoa ; this is a large fig, with a thin skin of pale yellow ; it is a fine fruit, good bearer, and ripens late in August or beginning of September; it is a good fig for forcing.

7. Black Genoa ; this is along dark fig, quite red inside, is fine flavoured, and ripens early.

8. Small White Fig; this is a small pale yellow fruit, of very good flavour, a great bearer, and will do well as standards ; it ripens early.

9. Large Brown Ischia ; this fig grows very large, it is brown outside, and purple within, is fine flavoured, and will often produce two crops in the year ; it ripens early.

10. Black Italian; this is a small fig of a very fine flavour ; it is one of the best for growing in pots, being a very great bearer.

CHESTNUTS, BARBERRIES, &C. J33

ALPHABETICAL LIST OF FIGS.

Those marked with an Asterisk (*) are described in the explanatory List.

Par. 129.

* Black Genoa Madona

* Ischie * Maltese

* Italian Murrey

Blue Ischie *Small Early White

Brown Ischie Turkey Large Black

* Naples * White Genoa

Common Blue *Yellow Ischie

* Green Ischie

CHESTNUTS.

Par. 130.

Golden Striped Spanish

Silver Striped Virginian

BARBERRIES.

Par. 131.

Black Sweet

Common Red with Stones

Red without Stones

QUINCES.

Par. 132.

Apple Quince

Oblong

Portugal

134 WALNUTS, RASPBERRIES, &C.

WALNUTS.

Par. 133.

Black Virginian or French Walnut

Hickery; Large Walnut

Cob Walnut Small Walnut

Double Walnut

FILBERTS AND HAZLE NUTS.

Par. 134.

Barcelona, or Spanish Nut Cosford Nut

Cluster Wood Nut Dwarf Prolific Nut

Cob Nut Red filbert

Common Wood Nut White Filbert

RASPBERRIES.

Par. 135.

Double-bearing Red Large Red

White Red Antwerp

Early White Smooth Cane

STRAWBERRIES.

Par. 136.-

Alphine Mathevin Castle

Bath Scarlet New Hautboy

Carolina Pine Apple

Chili Roseberry

Downton Scarlet

Keen's Imperial Suranam

New Seedling Wilmot's Scarlet

Knight's Seedling ' Wood Strawberry

GOOSEBERRIES. J35

CURRANTS.

Par. 137.

Black American Long Bunched Red

Common Red Common

Large Pale Red Cham- White Common

paigne Dutch

COMMON GOOSEBERRIES IN THIS COUNTRY.

Par. 138.-

Champaign Large Smooth Dutch Yel-

Common White low

Early Black Smooth Yellow

Green Gascoin' Small Early Red

Hairy and Smooth Red Smooth Green

Large Rough Yellow

RED GOOSEBERRIES.

Alcock's King Fox's Jolly Smoker

Boardman's Royal Oak Hall's Porcupine

Brundret's Atlas Lomax Victory

Chapman's Peerless Mason's Hercules

Dean's Glory of England Taylor's Volunteer

Duke of York Warrington

Farlow's Lord Hood Worthington's Glory of
Fisher's Conqueror Eccles

GREEN GOOSEBERRIES.

Chadwick's Hero Royal Green Gage

Dean's Lord Hood Smith's Mask

Mill's Langley Green Yeates's Duke of Bedford
Reid's Satisfaction

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GOOSEBERRIES.

WHITE GOOSEBERRIES.

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Chapman's Highland

White
Davenport's Lady

Gibson's Apollo
Kenyon's Noble
Woodward's Whitesmith

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BERRIES.

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Monk's Charles Fox

Nixon's Golden Eagle
Bidding's Old England
Royal George
Royden's Triumph
Rumbulion
Sparkler
Supreme Red
White Walnut
Worthington's Lilly

APPENDIX.

Observations on Horticulture generally.

HAVING given a description of all the best fruits in general cultivation in this country, I shall now hazard a few remarks on horticulture generally.

The generality of practical horticulturalists have been inclined to despise the theorist, but since the study has now become not only a fashionable but a profitable source of amusement, it has led many scientific theorists to furnish the practical man with much useful information, which the latter has been able to improve on, and from experiments and practice, placed England on a level, and, I may add, in a superior situation to all Foreign coun-

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APPENDIX.

tries in this respect. The little knowledge I possess on this subject, as well as gardening in general, is certainly mainly attributable to the study of different works which have appeared on these subjects ; but because .their authors may not have understood practically what they treated of, is no reason why I should be the less sensible of the obligations I am under to them. Yet, it may be said, these works are mostly produced from ancient writings, as the substance of most of them was known and treated of by our forefathers : but ought this to be allowed to depreciate the merit of their labours ? Would the practical man, I would ask, give himself the trouble to search after these ancient works, did he know of their existence, putting out of the question the expense he would be at, (as most books after a certain date, become scarce, and are then much enhanced in value,) and would he, when their attainment was accomplished, find himself competent to suggest the improvements made by most modern authors? I will (speaking collectively) fearlessly answer with regard to the first, he would not be at the trouble ; and with the second, he would be fully sensible of the wide difference between imaginary and actual powers of improving. Thus might we proceed in the jog trot pace of antiquity, were

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it not for the intelligence and encouragement of modern times.

One thing we have much cause to lament, which is, the premature decay of some of our most ornamental, and useful timber trees* particularly the elm, which is caused by a most destructive insect : the tree is first maltreated by bruises on the bark, or otherwise injured, then follows this destructive insect, which in one of its stages eats into the tree and rapidly consumes it ; these serious appearances are to be discerned extensively in St. James's Park and many other places. I would here hazard an opinion, from having made it my

study for many years ; but as the cause may only have been an oversight in those who have the care of them, it might appear officious and misplaced in a work of this nature.

Nevertheless, although I shall pass this, I cannot avoid making a few observations on the oak ; and the more especially as it is a tree (as my most inexperienced readers must know) which supplies us with the material best suited to our most important national purposes. Unless we use our utmost exertions to ensure a plentiful supply of this invaluable timber, our posterity will run the risk of losing the cele-

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brity we have so long maintained for our wooden walls defence : but this will never be the case, if the system of transplanting oaks is abandoned ; if pollard oaks are desirable, transplant your trees, but if you wish for fine timber, let your trees remain where your acorns were sown, as no tree feels the injury of cutting the root like the oak.

I have known the acorn which was sown in spring make a straight root of upwards of a yard long by the following autumn, although not grown more than one foot out of the ground ; and while this root is allowed to take the lead, so long will the tree keep a leader and grow straight ; but when the main root of the oak is cut, it will be all chance about its making another leading root ; but, while it remains uncut, although it may meet with stones or other obstructions, it will find its way and still keep the lead ; indeed I am fully persuaded if an oak tree ten years old were planted, and an acorn planted by it -in the same soil, in ten years the tree produced from the acorn would be the tallest, provided the other had been transplanted; be it understood, that this is a fact well known by many practical men : I therefore have mentioned it for the information of those who are unacquainted with the subject.

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The American oak is very different to the English ; this tree is very ornamental and fast in its growth, and will do well from being transplanted ; I have known them, in this country, grow upwards of six feet in one season ; but the wood, from its free growth, is naturally porous, and more used in this country for purposes where soft grained wood is necessary, than for its durability ; and as English oak is known not to flourish in any country like England, as long as we keep a good supply of that valuable timber we may always ensure to ourselves the strongest maritime power in the world.

Although I have passed over the elms without entering deeply into the cause of the decay of this valuable tree, I must say, I hope they will not share the same fate the acacias did, many years back : the common acacia, of which I am speaking, is a native of America, where it is now grown in large quantities, and equal in durability to any timber which that quarter of the globe produces. I find, from good authority, at the first planting of the royal gardens in St. James's Park, a great number of them were planted by Mr. Mollett, who then had the laying out of the grounds ; but, when the trees grew large, the wood being naturally

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very brittle while in a growing state, the strong west winds, (which this climate is very subject to in summer,) were in the habit of breaking the limbs, which so disfigured the trees as to render it necessary for the beauty of the Park to remove them ; and although at that time it is said they were getting into general cultivation, the destroying the above-mentioned trees was fatal to the general cultivation by the whole country. Notwithstanding this tree, from its beautifully formed leaves, which affords a good shade, the flowers a sweet smell, and the tree itself a very fine timber, has never recovered the unfavourable impression it received at the above period ; and I have no doubt if such an example were to be set with the elms, it would be followed by similar effects in the country,

and deter landowners from planting in the general manner they have been accustomed to do, and therefore as the disease can be remedied, it ought not to be passed by unnoticed ; particularly by those who have the care of his Majesty's woods and forests.

I shall now, previous' to drawing to a conclusion, make a few additional remarks on fruit trees. Among the different diseases and the causes of those diseases, I find the pear-trees are subject to a very destructive insect; par-

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ticularly the Green Chisel Pear; this insect I have not known many years, neither can I at present give any account of its origin. The insects appear to lay their eggs in the cracks and cavities of the bark, where they* hatch, and while in quite a young state, they are a small slender maggot of a whitish yellow colour ; as they grow they eat into the body of the tree, and when they get to their full size, I have seen them full two inches and a half long, and proportionably stout, of a red colour and shining black head, out of which it sends two small claws like a pair of nippers, which they make use of to eat into the tree. I have seen large trees, at least three feet in circumference in the stem, completely killed by them : T last winter took out one of them of the largest size, from a Green Chisel Pear tree, belonging to Mr. Street, of Old Brompton; this was taken from a large limb, where the insect had scooped out all the centre near the stem, which caused the wind to blow it off, and in the hollow, where it had been living, was at least two quarts of saw-dust, which the insect had buried itself in.

Should this insect become numerous, and an effectual remedy not be discovered, the devastation which it may be expected to make, will

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be of no trifling description ; however, I hope

and trust a remedy will be discovered. Mr. Street, from having become satisfied by repeated trials that the Chelsea Apple Powder greatly encourages, rather than retards the growth of fruit trees, has made use of it on this occasion, and seems more and more satisfied of its having the desired effect : however, as its principal object is intended for the preservation of the Apple trees, its further uses must be left for the public to discover. Thus far I can say, powerful as it is in its operation on insects, it will not injure the most tender plant; but to recommend it for various purposes, might lead it from the main object, therefore for the present I wish to confine it to the preservation of the apples.

A person who has made insects his study, through their various changes, must be lost in astonishment, when they contemplate the wonderful sagacity Providence has endowed them with; who has taught the butterfly or moth, to select the different vegetables or trees, their young will thrive best on ; how do they know their young will become caterpillars, and not be able to fly about for food like themselves ? yet nature has so ordered it, that these destructive vermin may be provided for : even the large

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fly, which is so fond of getting to meat in summer ; it is not that she goes there for her own food, but mainly for the food of her offspring, seeming to know that if the meat will remain, it will afford plenty of food for the maggots which her eggs produce.

I shall not here expatiate on insects, but conclude by making a few remarks on the planting of orchards. The first thing to consider when orchards are about to be planted, is the soil which will best suit the different sorts of fruit ; if it is a fine deep loamy soil, all kinds of fruit trees will succeed on it ; but standard apples and pears will not do well on any other ; plums (although they like loam) will do well on a sandy or gravelly soil, provided the gravel be not too near the surface ; cherries will likewise succeed on various soils,

although they do best on a light loam.

When an orchard is about being planted on a fertile piece of land, (particularly when it is intended for family use) the various explanatory lists of fruits should be consulted, and a selection made therefrom (according to the size of the orchard) of all the different fruits* consisting of Apples, Pears, Plums, Cherries, Medlars, Walnuts, Chesnuts, Damsons, Mul-

H

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berries and Quinces, the whole of which are useful in their seasons for the dessert and culinary purposes, although a few only of some of the sorts will be necessary, they ought to be planted to complete the orchard.

It is an advisable plan to plant a row of Walnut trees on the North or North-east side of the orchard, as they will greatly break the winds from the bloom of the other trees ; for although the Walnut is much later than many fruits in producing its leaves, it greatly assists in protecting the neighbouring bloom from the East and North-east blasts, from which it generally suffers more than from any other cause, and the Walnut itself from being so late in the season before it is in bloom, it is less likely to suffer than most other fruits.

Indeed if we could protect the Peaches and Nectarines while in bloom, we should have them as fine and plentiful in the open ground in this country as they are in America ; but the Peach and Nectarine producing its bloom before they put forth their leaves, the cold East wind, which we are almost invariably subject to in England, in the early part of the spring, is too sharp for the tender bloom, and consequently they seldom produce a crop,

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except in sheltered situations. On the con-

trary, in North America, although they are subject to very severe weather throughout the winter, when the frost breaks up and the spring commences, they generally have a continuance of fine mild weather, therefore the growth of this fruit has a preference ; indeed, they are in the habit of planting orchards of Peaches and Nectarines as common as we do Apples.

Before I leave this subject, it will be necessary to speak of the increasing value land would be brought to by cultivating it with Apples-

As one acre contains one hundred and sixty square rods, and each rod measures sixteen feet and a half square, if the trees were planted at a rod apart, it would of course take one hundred and sixty trees, or if they were planted wider, say one hundred to the acre : we have then to consider what would be the average profit arising from it. In the first place while the trees are in a young state, the injury will be so trifling to the under crops, for the first five or six years, as to be scarcely worthy of notice ; and by planting good Apples and sure bearers, in that time their produce would more than pay every expence of the purchase of the

H 2

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ties and planting, and from that time the profits would every year increase as the trees grew larger ; on the seventh year from planting, suppose you could only ensure one bushel from each tree, making one hundred bushels, (this is putting it at the lowest calculation) and each bushel worth five shillings, this will amount to twenty-five pounds, and allowing every future year the fruit of each tree to increase in value only sixpence, from the increasing growth of the tree for twenty years, which by planting at that distance they would have sufficient room to do, it would make the produce of each tree worth fifteen shillings, and the gross produce of the acre worth seventy-five pounds per year independent of the meadow.

In this statement it must be allowed I have stated the produce at the lowest, having allowed each tree at the age of twenty- seven years to produce only three 'bushels, and each bushel at five shillings ; some persons may say they have known Apples sold at eighteen pence and two shillings per bushel, but those were not such Apples as I have recommended ; I have known the Sykehouse Apple selling in Covent-garden market for twenty-five shillings per

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bushel, when many inferior sorts have been selling at from three to five shillings ; there are many other sorts equally as valuable as the Sykehouse, which may be seen by consulting the explanatory list ; and as the demand for Apples is, and always will be very great, I know of no crop the land could produce that would tend to a more sure or greater source of profit.

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