

# A new ORCHARD, and GARDEN: OR,

The best way for Planting, Grafting, and to make any ground good, for a rich Orchard: Particularly in the North, and generally for the whole Common-wealth, as in nature, reason, situation, and all probability, may and doth appeare.

With the Country-houfwifes Garden for Herbs of Common use: their Virtues, Seasons, Profits, Ornaments, variety of Knots, Models for Trees, and Plots, for the best ordering of Grounds and Walkes.

AS ALSO

The Husbandry of Bees, with their severall Uses and Annoyances *Allb ing the experience of Forty and eight yeares Labour, and now the second time corrected and much enlarged, by WILLIAM LAWSON.*

Whereunto is newly added the Art of Propagating Plants; with the true ordering of all manner of Fruits, in their gathering; carrying home, and preservation.



Skill and pains, bring fruitfull gains.

Nemo sibi natus.

London, Printed by W. Wilson, for E. Brewster, and George Sawbridge, at the Bible on Ludgate Hill, neere Fleet-bridge. 1656.



To the Right Worshipfull  
*Sir* HENRY BELLOSES,  
Knight and Baronet.

*Worthy Sir,*



When in many years by long experience  
I had furnished this my Northerne  
Orchard and Country Garden with  
needfull Plants and usefull Hearbes,  
I did impart the view thereof to my Friends,  
who resorted to me to confer in matters of  
that nature ; they did see it, and seeing it, de-  
sired it : and I must not deny now the publi-  
shing of it, (which then I allotted to my pri-  
vate delight), or the publike profit of others.  
Wherefore though I could plead Custome, the  
ordinary excuse of all writers, to chuse a Pa-  
tron and protector of their workes, and so  
shroud my selfe from scandall under your ho-

---

nourable favour ; yet have I certaine reasons to excuse this my presumption : First, the many courtesies you have vouchsafed me. Secondly your delightfull skill in matters of this nature. Thirdly, the profit which I received from your learned Discourse of Fruit-trees. Fourthly, your animating and assisting of others to such inducements. Last of all, the rare worke of your own in this kind : All which to publish under your protection, I have adventure d(as you see). Vouchsafe it therefore entertainment, I pray you, and I hope you shall find it not the unprofitablest servant of your retinue. For when your serious employments are over-passed, it may enterpose some commodity, and raise your contentment out of variety.

*Your Worships*

*most bounden,*

WILLIAM LAWSON.



# THE PREFACE,

To all well minded.

**A**Rt hath her first originall out of Experience, which therefore is called **The School mistress of Fools**, because she teacheth infallibly, and plainly, as drawing her knowledge out of the course of Nature, (which never fails in the general) by the senses, feelingly apprehending, and comparing, (with the help of the Mind) the Workes of Nature; and as in all other things naturall, so especially in **Trees**. For what is Art more then a provident and skillfull Correctrix of the faults of Nature in particular works, apprehended by the Senses? As when good ground naturally brings forth Thistles, trees stand too thick, or too thin, or disorderly, or (without dressing) put forth unprofitable Suckers, and such-like; all which and a thousand more, Art reformeth, being taught by Experience: and therefore must we count that art the surest, that stands upon Experimentall Rules, gathered by the rule of Reason (not Conceit) of all other rules the surest.

Whereupon have I, of my meere and sole Experience, without respect to any former written Treatise, gathered these Rules, and set them down in writing, not daring to hide the least talent given me of my Lord and Master in heaven. Neither is this injurious to any, though it differ from the common opinion in divers points, to make it known to others, what good I have found out, in this faculty by long tryall and experience. I confesse freely my want of curious skill in the art of planting: and I admire and praise **Plinie, Aristotle, Virgil, Cicero,** and

## The preface.

many others, for wit & judgement in this kind, and leave them to their times, manner, and several Countries.

I am not determin'd (neither can I worthily) to set forth the praises of this Art; how some, and no: a few, even of the best; have accounted it a chiefe part of earthly happ'nesse, to have fair and pleasant Orchards, as in Hesperia and Thessaly; how all with one consent agree, that it is a chief part of Husbandry, (as Tully de Senectute) and Husbandry maintains the world: how ancient, how profitable, how pleasant it is; how many secrets of nature it doth containe, how loved; how much praised in the best places, and of the best. This hath been done by many: I only aim at the common good. I delight not in curious conceits, as planting and grassing with the root upwards, inculcating Roses on Thornes, and such like; although I have heard of diverse, proved some, and read of more.

The Stationer hath (as being most desirous, with me, to further the common good) bestowed much cost and care in having the Knots & Models by the best Artizan cut in great variety, but nothing might be any way wanting to satisfie the curious desire of those that would make use of this Book.

And I shew a plain and sure way of planting, which I have found good by 48 yeeres (and more) experience in the North part of England. I prejudicate and envy none; wishing yet all to abstaine from maligning that good (to them unknown) which is well intended. Farewell.

Thine for thy good,

W. L.

THE

THE BEST, SVRE  
AND READIEST WAY  
TO MAKE A GOOD  
*Orchard and Garden.*

CHAP. I.

*Of the Gardener and his Wages.*



Whoever desireth and indevoereth to have a pleasant and profitable Orchard, must (if he be able) provide himselfe of a fruiterer, religious, honest, skilfull in that faculty, and therewithall painfull. By religious, I mean (because many think religion but a fashion or custome to goe to Church) maintaining, and cherishing things religious: as Schooles of learning, Churches, Tythes, Church goods and rights, and above all things, Gods word, and the preachers thereof, so much as he is able, practising prayers, comfortable conferences, mutual instruction to edifie, almes, and other works of charity, and all out of a good conscience.

Honesty in a Gardner, will grace your Garden, and all your house, and help to stay unbridled Serving-men, giving offence to none, not calling your name into question by dishonest acts, nor infecting your family by evil counsell or example. For there is no plague so infectious as Popery and Knavery, he will not purloin your profit, nor hinder your pleasures.

Concerning his skill he must not be a Sciolist, to make a shew or take in hand that which he cannot performe, especially in so weighty a thing as an orchard: than the which there can be no human thing more excellent, either for pleasure or profit, as shal (God willing) be proved in the treatise following. And what an hindrance shall it be, not onely to the owner, but to the common

mon good, that the unspeakable benefit of many hundred years shall be lost, by the audacious attempt of an unskillfull Arborist?

Painfull.

The Gardner had not need to be an idle, or lazie Lubber, for so your Orchard, being a matter of such moment, will not prosper, there will ever be some thing to doe. Weeds are alwayes growing, the great mother of all living creatures, the Earth, is full of seeds, in her bowels, and any stirring gives them heat of Sunne, and being laid neer day, they grow: Moales work daily, though not alwaies alike: Winter-hearbs at all times will grow (except in extream frost) In winter your trees and hearbs would be lightned of snow, and your allies cleansed: drifts of snow will set Deer, Hares, and Conyes, and other noysome beasts over your walls and hedges into your Orchard. When Summer cloaths your boarders with greene and peckled colours, your Gardner must dresse his hedges, and anticke workes: watch his bees, and hive them: distill his Roses and other Hearbs. Now begin Summer fruits to ripe, and crave your hand to pull them. If he have a Garden (as he must needs) to keep, you must needs allow him good help, to end his labours which are endlesse, for no one man is sufficient for these things.

Wages.

Such a Gardner as will conscionably, quietly and patiently, travell in your Orchard, God shall crowne the labours of his hands with joyfullnesse, and make the clouds drop fatnesse upon your trees; he will provoke your love, and earne his wages, and fees belonging to his place. The house being served, fallen fruit, superfluity of hearbs, and flowres, seeds, graffes, Sets, and besides all other of that fruit which your bountifull hand shall reward him withall, will much augment his wages, and the profit of your bees will pay you back againe.

If you be not able, nor willing to hire a gardner, keep your profits to your self. but then you must take all the pains; and for that purpose (if you want this faculty) to instruct you, have I under taken these labours, and gathered these rules, but chiefly respecting my countries good.

## CHAP. 2.

*Of the Soyle.*

**F**RUIT trees most common, and meetest for our Northern countries: (as Apples, Pear, Cherries, Filberds, red and white plummeg; Damsons, Bullis,) for we meddle not with Apricocks Kinds of trees. nor Peaches, nor scarcely with Quinces, which will not like in our cold parts, unless they be helped with some reflex of the sun or other like meanes, nor with bushes bearing berries, as Barberries, Goose-berries or Grofers, Raspe berries, and such like, though the Barberry be wholesome, and the tree may be made great; doe require (as all other trees doe) a black, fat, mellow, clean and well tempered soyle, wherein they may gather plenty of good sap. Some think the Hasell would have a chanily rocke, Soyle. and the fallow, and elder a waterish marish. The soyle is made better by delving and other meanes, being well melted, and the wildnesse of the earth and weeds (for every thing subject to man and serving his use (not well ordered) is by nature subject to the curse,) is killed by frost and drought, by fallowing and laying on heaps and if it be wild earth, with burning.

If your ground be barren (for some are forced to make an Orchard of barren ground) make a pit three quarters deep, and two yards wide, and round in such places where you would set your trees, and fill the same with fat, pure, and mellow earth, one whole foot higher then your soyle, and therein set your plant. For who is able to manure a whole Orchard plot, if it be barren? But if you determine to manure the whole site, this is your way; dig a trench halfe a yard deep, all along the lower (if there be a lower side of your Orchard plot, casting up all the earth on the inner side, and fill the same with good, short, hot, and tender muck; and make such another trench, and fill the same as the first and so the third, and so throughout your ground; and by this meanes your plot shall be fertile for your life. But be sure you set your trees neither in dung, nor barren earth.

Your ground must be plain, that it may receive, and keep Plaine. moysture, not only the rain falling thereon, but also water cast upon it, or descending from higher ground by sluices, Conduits,



Moist.

&c. For I account moisture in summer very needfull in the soyle of trees, and drought in winter: provided, that the ground be neither boggy, nor the inundation be past 24 houres at any time, & but twice in the whole Summer and so oft in the winter. Therefore if your plot be in a banke, or have a descent, make trenches by degrees, Allyes, walkes, and such like, so as the water may be stayed from passage; and if too much water be any hindrance to your walkes (for dry walkes doe well become an Orchard, and an Orchard them) raise your walks with earth first, & then with stones as big as wall-nuts, and lastly, with gravel. In Summer you need not doubt too much water from heaven, either to hurt the health of your body, or your trees. And if over-flowing molest you, after one day: avoid it then by deep trenching.

Some for this purpose dig the soyle of their Orchard, to receive moisture, which I cannot approve: for the roots with digging are often times hurt. and especially being digged by some unskillfull servant: for the Gardener cannot doe all himself: and moreover, the roots of Apples and Peares being laid neere day with the heat of the Sun, will put forth suckers, which are a great hinderance, and sometimes with evil guiding, the destruction of trees, unlesse the delving be very shallow, and the ground laid very leuell againe. Cherries and Plums, without delving, will hardly or never (after twenty yeares) be kept from such suckers, nor Asps.

Grasse.

Grasse also is thought needfull for moisture, so you let it not touch the rootes of your trees; for it will breed moffe: and the boal of your tree neere the earth, would have the comfort of the Sun and air.

Some take their ground to be too moist when it is not so, by reason of water standing thereon; for except in lowre marshes, springs, and continuall over-flowings, no earth can be too moist. Sandy and fat earth will avoid all water falling, by receipt: indeed a stiff clay will not receive the water, and therefore if it be grassie or plain, especially hollow, the water will abide, and it will seeme waterish, when the fault is in the want of manuring, and other good dressing.

This plainness which we require had need be naturall, because to force any uneven ground, will destroy the fatnesse: for every  
soyle

soyle hath his crust next day; wherein trees and herbs put their roots, and whence they draw their sap, which is the best of the soile, and made fertile with heat and cold, moisture and drought and under which, by reason of the want of the said temperature by the said four qualities, no tree nor herb (in a manner) will or can put root: as may be seen, if in digging your ground, you take the weeds of most growth, as graffe or docks (which will grow, though they lye upon the earth bare,) yet bury them under the crust, and they will surely dye and perish, and become manure to your ground. This crust is not past 15 or 18 inches deep in good ground, or other grounds lesse. Hereby appears the fault of forced plaines, viz. your crust in the lower parts is covered with the crust of the higher parts, and both with worse earth: your hights having the crust taken away, are become meerly barren: so that either you must force a new crust, or have an evill soyle. And be sure you levell before you plant, lest you bee forced to remove, or hurt your plants by digging, and casting among their roots. Your ground must be cleared, as much as you may, of stones and gravell, walls, hedges, bushes, and other weeds.

Naturally plainc.

Crust of the earth.

### CHAP. III.

*Of the Site.*

There is no difference; that I find betwixt the necessity of a good soyl, & a good Site of an Orchard: For a good soyl (as is before described) cannot want a good Site; and if it doe, the fruit cannot be good; and a good site will much amend an evill soyle. The best site is in low grounds, and (if you can) neer unto a River. High grounds are not naturally fat.

Low and neere a Rivcr.

And if they have any fatnesse by mans hand, the very descent in time doth wash it away. Tis with grounds in this case, as it is with men in a common wealth: Much will have more; and, Once Poor, seldom or never Rich. The Rain will scind and wash, and the wind wil blow fatnes from the hights to the hollows, where it will abide, and fatten the earth, though it were barren before.

Hence it is, that we have seldome any plaine grounds and low, a barren; and as seldome any hights naturally fertile. It is

unspeakable, what fatnesse is brought to low grounds by inundations of waters: neither did I ever know any barren ground in a low plain by a River side. The goodnesse of the soyle in *Howle* or *Hollowdernesse* in *York-shire*, is well knowne to all that know the River *Humber*, & the huge bulks of their cattel there. By estimation of those that have seen the low grounds in *Holland* and *Zealand*, they far surpassesse most Countries in *Europe* for fruitfulness, and only because they lye so low. The world cannot compare with *Egypt* for fertility, so far as *Nilus* doth overflow his banks. So that a fitter place cannot be chosen for an Orchard, then a low plain by a River side. For besides the fatnesse which the water brings, if any cloudy mist or raine be stirring, it commonly falls down to, and follows the course of the River.

Psal. 1. 3.

Ezek. 17. 8.

Eccles. 39. 17.

And where see we greater trees of bulk and bough, then standing on, or neer the water side? If you aske why the *Plaines* in *Holdersnes* and such Countries, are destitute of woods? I answer, that men and cattel (that have put trees thence, from out of plaines to void corners) are better then trees. Neither are those places without trees. Our old Fathers can tell us how woods are decayed, & people in the roome of trees multiplied. I have stood somewhat long in this point, because some doe condemn a moist soil for fruit trees.

Mr. Markham.

Winds.

Chap. 13.

A low ground is good to avoid the danger of winds, both for shaking downe your unripe fruit. Trees (the most that I know) being loaden with wood for want of proyning, and growing high by the unskilfulness of the Arborist must needs be in continuall danger of the South West, West and North-west winds, especially in September and March, when the ayre is most temperate from extreame heat and cold, which are deadly enemies to great winds. Wherefore chuse your ground low: Or if you be forced to plant in a higher ground, let high and strong walls, houses & trees, as wall-nuts, Plane-trees, Oaks and Ashes, placed in good order, be your fence for winds.

The sucken of your dwelling house, descending into your Orchard, if it be cleanly conveyed is good.

Sun.

The Sun, in some sort, is the life of the world: it maketh proud growth, and ripens kindly and speedily, according to the golden Tearme, *Annus fructificat, non tellus*. Therefore in the

Countries.

Countries nearer approaching the Zodiack the Suns habitation, they have better, and sooner ripe fruit, then we that dwell in these frozen parts.

This provoketh most of our great Arborists to plant *A-Trees* against *pricocks, Cherries, and Peaches*, by a wall & with tacks, & other *a wall.* means to spread them upon, and fasten them to a wall, to have the benefit of the immoderate reflex of the Sun, which is commendable, for the having of fair, good, and soone ripe fruit. But let them know, it is more hurtfull to their trees then the benefit they reap thereby, as not suffering a tree to live the tenth part of his age; it helps Gardeners to work. For first, the wall hinders the roots; because into a dry and hard wall of earth or stone, a tree will not, nor cannot put any root to profit, but especially it stops the passage of the sap, whereby the Bark is wounded, and the wood and diseases grow, so that the tree becomes short of life. For as in the body of man the leaning or lying on some member, whereby the course of blood is stoppt, makes that member as it were dead for the time, till the blood returne to his course, and I think, if that stopping should continue any time, the member will perish for want of blood, (for the life is in the blood) and so indanger the body; so the sap is the life of the tree, as the blood is to mans body: neither doth the tree in winter (as is supposed) want his sap, no more then mans body his blood, which in winter, and time of sleep, draws inward: so that the dead time of winter, to a tree, is but a night of rest: for the tree at all times, even in winter, is nourish'd with sap and growth as well as mans body. The chilling cold may well some little time stay or hinder the proud course of the sap, but so little and so short a time, that in calm and mild seasons, even in the depth of winter, if you marke it, you may easily perceive the sap to put out, and your trees to increase their buds which were formed in the Summer before, and may easily be discerned; for leaves fall not off, till they be thrust off with the knots or buds whereupon it comes to passe, that trees cannot beare fruit plentifully two years together, and make themselves ready to Blossom against the seasonableness of the next spring.

And if any frost be so extream, that it stay the sap too much, or too long, then it kills the forward fruit in the bud, and some-

times the tender leaves and twigs, but not the tree: VVherefore to returne, it is perillous to stop the sap. And where, or when did you ever see a great tree packt on a wall? Nay, who did ever know a tree so unkindly splat, come to age? I have heard of some that out of their imaginary cunning, have planted such trees, on the North side of the wall, to avoid drought: but the heat of the Sun is as comfortable (which they should have regarded) as the drought is hurtfull. And although water is a soveraigne remedy against drought, yet want of Sun is no way to be helped. Wherefore, to conclude this chapter, let your ground lie so, that it may have the benefit of the south and west Sun, and so low and close, that it may have moisture, and increase his fatness, (for trees are the greatest suckers and pillars of the earth) and (as much as may be) free from great winds.

### CHAP. III.

#### *Of the Quantity.*

I T would be remembred what a benefit riseth, not onely to every particular owner of an Orchard, but also to the common wealth by fruit, as shall be shewed in the sixteenth chapter (God willing); whereupon must needs fallow, the greater the Orchard is (being good, & well kept) the better it is: for of good things, being equally good, the biggest is the best. And if it shall appear, that no ground a man occupieth, (no, not the Corn field) yeeldeth more gaine to the purse, and house-keeping (not to speak of the unspeakable pleasure) quantity for quantity, then a good Orchard, (besides the cost in planting and dressing an Orchard is not so much by far, as the labour and Seeding of your Corn fields nor for durance of time comparable, besides the certainty of the one before the other) I see not how any labour or cost in this kind, can be idly or wastfully bestowed, or thought too much. And what other thing is a Vineyard, in those Countries where Vines doe thrive, then a large Orchard of trees bearing fruit? or what difference is there in the juyce of the Grape, and our Sider and perry, but the goodnesse of the soil, and climate where they grow? which maketh the one more ripe, and so more pleasant then the other. Whatsoever can be said for  
the

Orchard as  
good as a  
Corney field.

Compared  
with a Vine-  
yard.

the benefit rising from an Orchard, that makes for the largnesse of the Orchard bounds. And me thinks they doe preposterouly, Compared with a Garden. that bestow more cost and labour, and more ground in and upon a Garden, then upon an orchard, whence they reap and may reap both more pleasure and more profit, by infinite degrees. And further, that a Garden never so fresh, and fair, and well kept, cannot continue without both renewing of the earth and the hearbs often, in the short and ordinary age of a man : whereas your Orchard well kept, shall dure divers hundred yeeres, as shall be shewed *chap 14.* In a large orchard there is much labour saved, in fencing and otherwise: for three litle orchards or a few trees, being in a manner all out sides, are so blasted and dangered, and commonly in keeping neglected, and require a great fence ; whereas in a great orchard, trees are a mutuall fence one to another, and the keeping is regarded ; and lesse fencing serves six acres together, then three in severall inclosures.

Now what quantity of ground is meetest for an Orchard can no man prescribe, but that must be left to every mans severall What quantity of ground. judgement, to be measured according to his ability & will, for other necessaries besides fruit must be had, and some are more delighted with orchards then others.

Let no man, having a fit plot, plead poverty in this case ; Want is no hindrance. for an orchard once planted, will maintain it self, and yeeld infinite profit beside. And I am perswaded, that if men did know the right and best way of planting, dressing, and keeping trees, and felt the profit and pleasure thereof, both they that have no orchards, would have them, and they that have orchards would have them larger, yea fruit trees in their hedges, as in Worcester-shire, &c. And I think, the want of planting is a great losse to our common wealth, and in particular, to the owners of Lordships, which Landlords themselves might easily amend, How Landlords by their Tenants may make flourishing Orchard in England. by granting longer time and better assurance to their tenants, who have taken up this Proverb, *Botch and sit, Build and sit* : for who will build or plant for another mans profit ? Or the Parliament might injoyne every occupier of grounds to plant and maintaine for so many acres of fruitfull ground, so many severall trees, or kinds of trees for fruit. Thus much for quantity.

A. All these squares must be set with trees, the Gardens and other ornaments must stand in spaces betwixt the trees, and in the borders and fences.

B. Trees 20. yards a sander.

C. Garden Knots.

D. Kitchin Garden.

E. Bridge.

F. Conduit.

G. Staires.

H. Walkes set with great wood thick.

I. Walkes set with great wood round about your Orchard

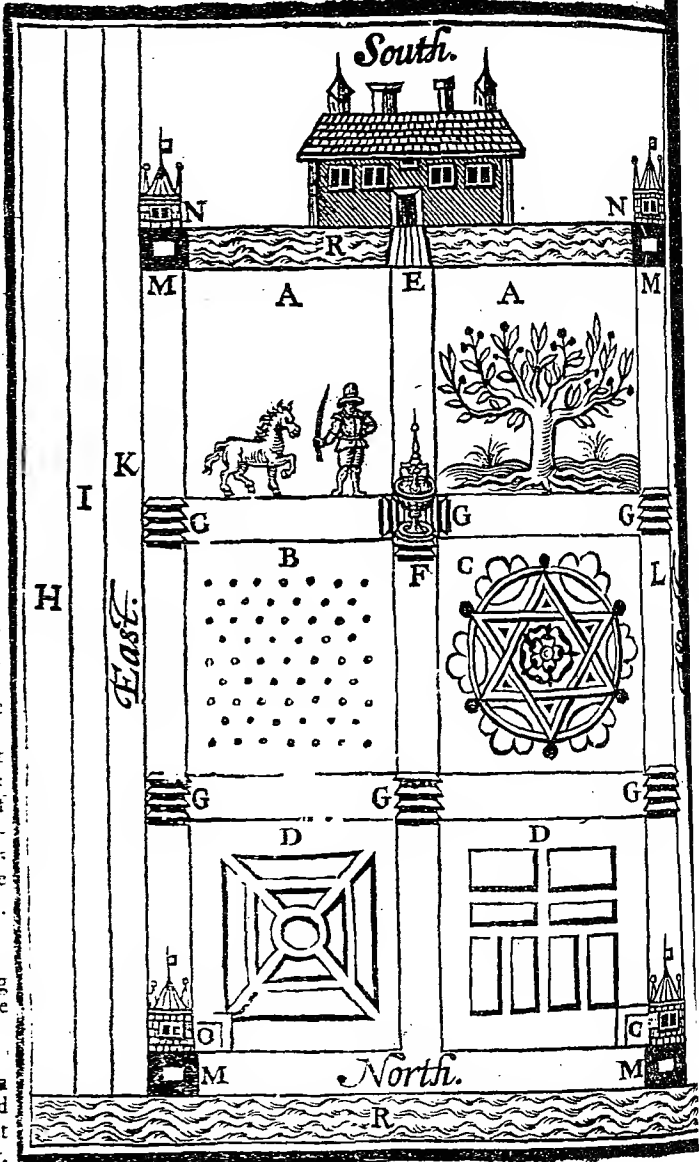
K. The Out fence.  
L. The Out fence set with stone fruit.

M. Mount. To force earth for a Mount of such like, set it round with quick and lay boughes of trees strangel: intermingled, the tops inward, with the earth in the middle.

N. Still-house.

O. Good standing for Bees, if you have an house.

P. If the river run by your doore, and under your Mount it will be pleasant.



## CHAP.V.

## Of the Form.

The goodnesse of the soil and site, are necessary to the well-being of an Orchard simply, but the form is so far necessary, as the owner shall think meet. For that kind of form where, with every particular man is delighted, we leave it to himselfe, *Suum cuique pulchrum*. The form that men like in generall, is a square: for although roundnesse be *forma perfectissima*, yet that principle is good, where necessity by art doth not force some other form. It within one large square the Gardiner shall make one round Labyrinth or Maze with some kind of Berries, it will grace your form, so there be sufficient roome left for walkes, so will four or more round knots do, for it is to be noted that the eye must be pleased with the forme. I have seene squares rising by degrees with stays from your house ward, according to this forme which I have *Crassa quod aiunt Minerva*, with an unsteady hand, rough hewen: for in forming Countrie gardens, the better lort may use better formes, and more costly worke. What is needfull more to be said, I referre all that (concerning the form) to the Chapter 17. of the Ornaments of an Orchard.

The usuall forme is a square.

## CHAP.VI.

## Of Fences.

ALL your labour past and to come about an Orchard is lost, unlessse you fence well. It shall grieve you much to see your young sets rubd loose at the roots, the bark pild, the boughs and twigs crott, your fruit stolne, your trees broken, and your many years labours and hopes destroyed, for want of fences. A chiefe care must be had in this point: you must therefore plane in such a soile, where you may Provide a convenient, strong, and seemly fence. For you can possesse no goods, that have so many enemies as an orchard, looke Chapter 13. Fruits are so delight-some, and desired of so many (nay in a manner of all) and yet few will be at cost and take pains to provide them. Fence well therefore, let your plot be wholly in your owne power, that you

Effects of evill fencing:



Let the fence be your own. make all your fence your selfe: for neighbours fence is none at all, or very carelesse. Take heed of a doore or window, (yea of a wall) of any other mans into your orchard yea, though it be nailed up, or the wall be high, for perhaps they will prove theeves.

Kinds of Fences: earthen walls.

All fences commonly are made of earth, Stone, Bricks, wood, or both earth and wood. Dry wall of earth, and dry ditches are the worst fences save pales or railes, and doe wast the soonest, unlesse they be well copt with Glooe and mortar, whereon at Michaell tide it will be good to sow wall-flowers commonly called Bee flowers, or winter Gillyflowers, because they will grow (though among stones) and abide the strongest frost and drought continually greene and flowering even in winter, and have a pleasant smell, and are timely, (that is they will flower the first and the last of flowers) and are good for Bees. And your earthen wall is good for bees dry and warne but these fences are both unseemly, evill to repaire, and onely for need, where stone or wood cannot be had. Whosoever makes such walls, must not pill the ground in the Orchard, for getting earth, nor make any pits or hollowes, which are both unseemly and unprofitable: old dry earth mixt with sand is best for these. This kind of wall will soone decay by reason of the trees which grow neer it, for the roots and boals of great trees, will increase, undermine, and overturne such walls, though they were of stone, as is apparent by Ashes, Round-trees, Bart trees, and such like, carried in the chat, or berry, by birds into stone walls.

Pale & Raile.

Fences of dead wood, as pales, will not last, neither will railes either last or make good fence.

Stone walls.

Stone walls (where stone may be had) are the best of this sort both for fencing, lasting, and shroding of your young trees but about this you must bestow much Paines and more cost, to have them handsome, high and durable.

Quick wood and Moats.

But of all other (in mine opinion) Quickwood and moates or ditches of water, where the ground is levell, is the best fence. In unequall grounds, which will not keep water, there a double ditch may be cast, made streight and levell on the top two yards broad for a fair walk, five or six foot higher then the soil, with a gutter on either side, two yards wide, & four foot deep, set without with three or four cheffe of thorns, and within with cherries.

Plummes

Plummes, Damson, Bully, Filberds, (for I love those trees better for their fruit, and as well for their form, as privit,) for you may make them take any forme. And in every corner, (and middle if you will) a mount would be raised, where about the wood may claspe, poudered with wood-binde which will make with dressing a faire, pleasant, profitable, and sure fence. But you must be sure that your quick thorns either grow wholly, or that there be a supply betime, either planting new, or plashing the old where need is. And assure your selfe, that neither wood, stone, earth, nor water, can make so strong a fence, as this seven at years growth.

Moates, Fish ponds, and (especially at one side a River) with-<sup>Moates.</sup> in and without your fence, will afford you fish, fence, and moisture to your trees, and pleasure also, if they be so great and deep that you may have Swans, and other water birds, good for devouring of vermine, and boat for many good uses.

It shall hardly availe you to make any fence for your Orchard, if you be a niggard of your fruit. For as liberality will save it best from noisome neighbours, (liberalitie I say is the best fence) so justice must restraine rioters. Thus when your ground is tempered, squared, and fenced, it is time to provide for planting.

## CHAP. VII

### *Of Sets.*

**T**Here is not one point (in my opinion) about an Orchard more to be regarded, then the choise getting and setting of good plants, either for readinesse of having good fruit, or for continuall lasting for whosoe ver shall fail in the choise of good sets, or in getting, or gathering or setting his plants, shall never have a good or lasting Orchard. And I take want of skill in this faculty, to be a cheif hinderance to the most Orchards, and to many for having Orchards at all.

Some for readinesse use slips, which seldome take root, and if they doe take, they cannot last, both because their root having a maine wound will in short time decay the body of the tree: and besides, that roots being so weakly put, are soone nipt with drought or frost, I could never see (lightly) any slip, but of apples onely, set for trees.

Bur-knot.

A Bur-knot kindly taken from an apple-tree, is more bitter and surer. You must cut him close at the root end, an handful under the knot (some use in Summer about Lammas to circumscribe him and put earth to the knots with hay-ropes, and in winter cut him off and set him; but this is curiosity needlesse, & danger with removing and drought) and cut away all his twigs save one, the most principall, which in setting you must leave above the earth, burying his trunk in the crust of the earth for his root. It matter not much what part of the bough the twigs grow out of. If it grow out of, or neer the root end, some say such an apple will have no core nor kernel. Or if it please the planter he may let his bough be crooked, and leave out his top end one-foot, or somewhat more, wherein will be good grafting; if either you like not, or doubt the fruit of the bough, (for commonly your bur-knots are Summer fruit) or if you think he will not, recover his wound safely.

Usuall sets.

The most usuall kind of Sets are plants with roots growing, of kernels of apples, Pears, and Crabbs, or stones of Cherries, Plums, &c. removed out of a nursery, wood, or other Orchard, into, and set, in your Orchard in due places. I grant this kind to be better then either of the other by much, as more sure and more durable. Herein you must note, that in Sets so removed, you get all the roots you can, and without bruising of any. I utterly dislike the opinion of those great gardners, that following their books, would have the maine roots cut away: for tops cannot grow without roots. And because none can get all the roots, and removal is an hinderance, you may not leave on all tops, when you set them: For there is a proportion betwixt the top and root of a tree, even in the number (at least in the growth) If the roots be many, they will bring you many tops, if they be not hindered. And if you use to stow or top your tree too much or too low, and leave no issue, or little for sap, (as is to be seen in your hedges) it will hinder the growth of roots and boal, because such a kind of stowing is a kind of smothering or choaking the sap. Great wood, as Oak, Elm, Ash, &c. being continually kept down with sheer knife, ax, &c. neither boal nor root will thrive; but as an hedg or bush. If you intend to graffe in your sets, you may cut him closser with a greater wound, and neerer the earth with-

Maine roots cut.

Stow sets removed.

within a foot or two, because the graft or grafts will cover his wound. If you like his fruit, and would have him to be a tree of himselfe, be not so bold. This I can tell you, that though you do cut his top close, and leave nothing but his bulke, because his roots are few, if he be (but little) bigger than your thumb (as I wish all plants removed to be (he will safely recover his wound within seven yeers, by good guidance, that is, if the next time of dressing, immediately above his uppermost sprig, you cut him off aslope cleanly, so that the sprig stand on the back side, (and if you can Northward, that the wound may have the benefit of the Sun) at the upper end of the wound; and let that sprig onely be the boal. And take this for a generall rule; Every young plant, if he thrive, will recover any wound above the earth, by good dressing, although it be to the one halfe, and to his very heart. This short cutting at the remove, saves your plants from wind and needs the lesse or no staking. I commend not lying or leaning of trees against holds or stays; for it breed<sup>e</sup> obstruction of sap, and wounds incurable. All removing of trees as great as your arm, or above, is dangerous; though some time such will grow, but not continue long, because they be tainted with deadly wounds, either in the root or top (and a tree once thorowly tainted, is never good.) And though they get some hold in the earth with some lesser taw or taws, which give some nourishment to the body of the tree; yet the heart being tainted, he will hardly ever thrive; which you may easily discern by the blacknesse of the boughs as the heart, when you dress your trees. Also, when he is set with more tops then the roots can nourish; the tops decaying, blacken the boughs, and the boughs the arms, and so they boil at the very heart. Or this taint in the removall, if it kill not presently, but after some short time it may be discerned, blacknesse or yellownesse in the bark, and a small hungred leaf. Or if your removed plant put forth leaves the next and second Summer, and little or few sprases, is a great sign of a taint, and next yeers death. I have known a tree tainted in setting, yet grow, and beare blossomes for divers yeers; and yet for want of strength could never shape his fruit.

Next unto this, or rather equall with these plants, are suckers growing out of the roots of great trees, which Cherries and

Generall rule.

Tying of trees.

Generall rule.

Signes of diseases. chap. 13.

Suckers good

Plums do seldome or never want and being taken kindly with their roots, will make very good sets. And you may help them much by enlarging their roots with the taws of the tree whence you take them. They are of two sorts: Either growing from the very root of the tree: and here you must be carefull, not to hurt your tree when you gather them, by ripping amongst the roots; and that you take them clean away: for these are a great and continuall annoyance to the growth of your tree; and they will hardly be cleaned. Secondly or they doe arise from some taw: and these may be taken without danger, with long and good roots and will soone become trees of strength.

A Running  
plant.

There is another way, which I have not thorowly proved, to get not onely plants for grafting, but Sets to remain for trees, which I call a *Running plant* the manner of it is this: Take a root or kernell, & put into the middle of your plot; & the second yeere in the spring geld his top, if he have one principall (as commonly by nature they have) & let him put forth only four Syons toward the four corners of the Orchard, as neer the earth as you can. If he put not four (which is rare) stay his top till he have put so many. When you have four such, cut the stock allope, as is aforesaid in this Chapter. hard above the uppermost sprig, and keep those four without Syons clean and streight till you have them a yard and a half, at least, or two yards long. Then the next spring, in grafting time, lay down those four sprays, towards the four corners of your Orchard, with their tops in a heap of pure and good earth, and raised as high as the root of your Syon, (for sap will not descend) & a sod to keep them down, leaving nine or twelve inches of the top to looke upward. In that hill he will put roots, and his top new cyons, which you must spread as before, and so from hill to hill, till he spread the compasse of your ground, or as far as you list. If, in bending the Syons crack, the matter is small; cleanse the ground, and he will recover. Every bended bough will put forth branches, and become trees. If this plant be of a bur knot, there is no doubt: I have proved it in one branch my selfe, and I know at *Wilson* in *Cleveland*, a Pear-tree of a great bulke and age, blowne close to the earth, hath put at every knot roots into the earth, and from root to top, a great number of mighty armes or trees, filling a great room, like many trees, or

a little Orchard. Much better may it be done by Art, in a lesse tree. And I could not mislike this kind, save that time will be long before it come to perfection.

Many use to buy sets already grafted; which is not the best way: Sets bought. ] for first, all removes are dangerous: again there is danger in the carriage: Thirdly, it is a costly courie of planting: Fourthly, every Gardner is not trusty to sell you good fruit: Fifthly, you know not which is best, which is worst, and so may take most care about your worst trees. Lastly, this way keeps you from practise. and so from experience, in so Good, Gentlemanly, Scholerlike and profitable a faculty

The onely best way (in my opinion) to have sure and lasting The best sets. sets, is never to remove: for every remove is a hinderance if not Vnremoved. a dangerous hurt, or deadly taint. This is the way: how. The plat-  
form being laid, and the plot appoynted where you will plant every Set in your Orchard, dig the roome where your set shall stand, a yard compasse, & make the earth mellow and clean, and mingle it with a few cole-ashes, to avoid worms and immediately after the first change of the Moone, in the latter end of *February*, the earth being afresh turned over, put in every such room three or four kirkels of Apples or peares of the best; every kirkell in an hole made with your finger, finger-deep, a foot distant: one from another; and that day month following, is many more, (leatt some of the former misse) in the same compass but not in the same holes. Hence (God willing) shall you have roots enough: If they all or divers of them come up, you may draw (but not dig) up (nor put down) at your pleasure, the next *November*. How many soever you take away, to give or bestow elsewhere, be sure to leave two of the proudest. And when in your second or third yeer you graff, if you graff then at all, leave the one of those two ungrafted, lest in grafting the other, you fail. For I find by tryall, that after the first or second grafting in the same stock, being misse (for who hits all) the third misse puts your stock in deadly danger, for want of issue of tap. Yea, though you hit in grafting, yet may your graffs with wind or other wise be broken down. If your graffs or graff prosper, you have your desire, in a plant unremoved, without taint, and the fruit at your owne choice: and so you may. (some little earth being removed) pull but not dig  
up

up the other plant or plants in that room. If your graff or stock, or both perish, you have another in the same place, of better strength to work upon; for thriving without snub, he will overlay your grafted stock much. And it is hardly possible to misse in grafting so often, if your gardiner be worth his name.

Sets ungrafted  
best of all.

It shall not be amisse (as I judge it) if your kernels be of choice fruit, and that you see them come forward proudly in their body, and beare a fair and broad leaf in colour, tending to a greenish yellow, (which argues pleasant and great fruit) to try some of them ungrafted: for although it be a long time ere this come to bear fruit, ten or twelve years, or more: and at their first bearing, the fruit will not seem to be like his owne kind, yet am I assured, upon tryall, before twenty years growth, such trees will increase the bignesse and goodnesse of their fruit and come perfectly to their owne kind. Trees (like other breeding creatures) as they grow in yeers, bignesse and strength, so they mend their fruit. Husbands and housewives find this true by experience, in the rearing of their young store. More then this; there is no tree like this for soundnesse and durable last, if his keeping and dressing be answerable. I grant, the readiest way to come soone to fruit, is grafting; because, in a manner, all your graffs are taken off fruit-bearing trees.

Time of removing.

Now when you have made choise of your sets to remove, the ground being ready, the best time is, immediatly after the fall of the leaf, in or about the change of the Moon, when the sap is most quiet for then the sap is turning: for it makes no stay, but in the *extremity* of drought or cold. At any time in winter, may you transplant trees, so you put no ice nor snow to the root of your plant in the setting: and therefore open, calm, and moist weather is best. To remove, the leaf being ready to fall and not fallen, or buds apparently put forth in a moist warm season, for need, sometime may do well; but the safest is to walk in the plain troden path.

Generall rule.

Some hold opinion, that it is best removing before the fall of the leaf; and I hear it is commonly practised in the South by our best Arborists, the leaf not fallen; & they give the reason to be, that the descending of the sap will make speedy roots. But mark the reasons following and I think you shall find no soundnesse either in

in that position or practice, at least in the reason.

1. I say, it is dangerous to remove when the sap is not quiet; for every remove gives a main check to the stirring sap, by staying the course thereof in the body of your plant, as may appear by trees removed any time in Summer, they commonly die nay hardly shall you save the life of the most young and tender plant of any kind of wood (scarcely herbs) if you remove them in the pride of sap: for proud sap universally stayed by removal, ever hinders, often taints, and so presently, or in very short time, kills. Sap is like blood in mans body, in which is the life, *cap 3 p 9*. If the blood universally be cold, life is excluded: so is sap staid by untimely removal. A stay by drought, or cold, is not so dangerous (though dangerous, if it be extreame) because more natural.

2. The sap never descends, as men suppose; but is consolidated and transubstantiated into the substance of the tree, and passeth (alwaies above the earth) upward, not onely betwixt the bark and the wood, but also into and in both body and bark; though not so plentifully, as may appear by a tree budding, nay fructifying two or three yeers, after he be circumcised, at the very root, like a River that enlargeth his chanel by a continual descent.

3. I cannot perceive what time they would have the sap to descend. At *Midsummer* in a biting drought it stays, but descends not; for immediately upon moisture, it makes second shoots, as (or before rather) *Michaeltide*, when it shapens his buds for next yeers fruit. If at the fall of leaf, I grant, about that time is the greatest stand, but no descent of sap, which begins somewhat before the leaf fall, but not long; therefore at that time must be the best removing, not by reason of descent, but stay of sap.

4. The sap in this course hath its profitable and apparent effects; as the growth of the tree, covering of wounds, putting of buds, &c whereupon it follows, if the sap descend, it must needs have some effect to shew it.

5. Lastly, boughs plasht and laid lower then the root, die for want of sap descending, except where it is forced by the maine stream of the sap, as in top boughs hanging like water in pipes or except the plasht boughs lying on the ground put roots of his own; yea under-boughs, which we commonly call water-boughs



can scarcely get sap to live, yea in time die, because the sap doth presse so violently upward, and therefore the fairest shoots and fruits are always in the top.

Remove soon. *Obiect.* If you say that many so removed thrive; I say, that somewhat before the fall of the leaf (but not much) is the stand; for the fall and the stand are not at one instant: before the stand, is dangerous. But to returne.

The sooner in winter you remove your sets the better; the latter the worse: for it is very perillous if a strong drought take your sets before they have made good their rooting. A plant set at the fall, shall gain (in a manner) a whole yeers growth of that which is set in the spring after.

The manner  
of setting,

I use in the setting to be sure that the earth be mouldy, (and somewhat moist) that it may run among the small tangles without straining or bruising: and as I fill in earth to his root, I shake the Set easily too and fro, to make the earth settle the better to his roots; and withall easily with my foot I put in the earth close; for Ayre is noysome, and concavities will follow. Some prescribe Oats to be put in with the earth. I could like it, if I could know any reason thereof. And they use to set their plants with the same side towards the Sun; but this conceit is like the other. For first, I would have every tree to stand so free from shade, that not onely the root (which therefore you must keep bare from grasse) but body, boughs, and branches, and every spray, may have the benefit of the Sun. And what hurt, if that part of the tree which before was shadowed, be now made partaker of the heat of the Sun? In turning of Bees I know it is hurtfull, because it changeth their entrance, passage, and whole work but not so in trees.

Set in the  
crust.

Moisture good

Set as deep as you can, so that in any wise you goe not beneath the crust. Look *Chap 2.*

Wee speake in the second Chapter of moisture in general: but now especially having put your removed plant into the earth, powre on water (of a puddle were good) by distilling presently, and so every week twice, in strong drought, so long as the earth will drink, and refuse by overflowing. For moisture mollifies, and both gives leave to the roots to spread, and makes the earth yeeld sap and nourishment with plenty and facility. Nurseth, they

(they say) give best and most milk after warm drinks.

If your ground be such, that it will keep no moisture at the root of your plant, such plants shall never like, or but for a time. There is nothing more hurtfull for young trees, then piercing drought. I have knowne trees of good stature, after they have been of divers years growth, and thrive well for a good time, perishing for want of water, and very many by reason of taints in setting.

It is meet your sets and grafts be fenced, till they be as big as your arm, for fear of annoyances. Many ways may Sets receive damages, after they be set, whether grafted or ungrafted. For although we suppose, that no noysome beast or other thing must have access among your trees; yet by casualty, a Dog, Cat, or such like, or your self; or negligent freind bearing you company, or a shrewd boy, may tread or fall upon a young and tender plant or graft. To avoid these and many such chances, you must stake them round a pretty distance from the Set, neither so near nor so thick; but that it may have the benefit of the Sun, Rain, and Air. Your stakes (small or great) would be so surely put, or driven into the earth, that they break not, if any thing happen to lean upon them, else may the fall be more hurtfull then the want of the fence. Let not your stakes shelter any weeds about your sets; for want of Sun is a great hinderance. Let them stand so far off, that your grafts spreading receive no hurt, either by rubbing on them, or of any other thing passing by. If your stock be long, and high grafted, (which I must discommend, except in need) because there the sap is weak, and they are subject to strong winds, and the lightings of birds, tie easily with a soft list three or four pricks, under the clay, and let their tops stand above the grafts to avoid the lighting of Crows, Pies, &c. upon your grafts. If you stick some sharp thorns at the roots of your stalks, they will make hurtfull things keep off the better. Other better fences for your grafts I know none. And thus much for sets and setting.

#### CHAP. VIII.

##### *Of the distance of trees.*

I Know not to what end you should provide good ground, well fenced, and plant good sets; and when your trees should come

Grafts must be fenced.

Hurts of too  
neere plan-  
ting.

to profit, have all your labours lost, for want of due regard to the distance of placing your trees. I have seen many trees stand so thick, that one could not thrive for the throng of his neighbours. If you do mark it. you shall see the tops of trees rubbed off, their side galled like a gall'd horse back; and many trees have more stumps then boughs, and most trees not well thriving, but short, stumpish, and evill-thriving boughs; like a Corn-field overseeded or a Town over peopled, or a pasture over laid; which the Gardner must either let grow, or leave the Tree very few boughs to bear fruit. Hence small thrift, galls, wounds, diseases, and short life to the trees: and while they live, green, little, hard, worm-eaten, and evill-thriving fruit arise, to the discomfort of the owners.

To prevent which discommodity, one of the best remedies is, the sufficient and fit distance of trees. Therefore at the setting of your plants, you must have such respect, that the distance of them be such, that every tree be not annoyance, but an help to his fellowes: for trees (as all other things of the same kind) should stand, and not hurt one another. And assure your self, that every touch of trees (as well under as above) is hurtfull: Therefore this must be a general rule in this Art, That no tree in an Orchard well ordered, nor no bough, nor cyon, drop upon or touch his fellowes. Let no man think this impossible, but look in the eleventh Chapter of dressing of trees. If they touch, the wind will cause a forcible rub. Young twigs are tender, if boughs or arms touch or rub, if they are strong, they make great galls. No kind of touch therefore in trees can be good.

Generall rule  
All touches  
hurtfull.

The best di-  
stance of trees

Now it is to be considered what distance among Sets is requisite, and that must be gathered from the compasse and room that each tree by probability will take and fill. And herein I am of a contray opinion to all them which practise or teach the planting of trees, that ever yet I knew, read or heard of: for the common space betwene tree and tree, is ten foot; if twenty foot, it is thought very much. But I suppose 20 yards distance is small enough betwixt tree and tree, or rather too too little. For the distance must needs be as far as two trees are well able to overspread and fill, so they touch not by one yard at the least. Now I am assured, and I know one Apple tree, set of a slip *finger-great*,  
in.

in the space of twenty yeares ( which I account a very small part of a trees age, as is shewed chap. 14. ) hath spread his boughes eleven or twelve yards compasse that is, five or sixe yards on every side. Hence I gather, that in forty or fifty yeares, ( which yet is but a small time of his age ) a tree in good soile, well liking, by good dressing ( for that is much availeable to this purpose ) will spread double at the least, viz. twelve yards on a side ; which being added to twelve allotted to his fellow make twenty and foure yards, and so farre distant must every tree stand from another. And look how far a tree spreads his boughs above, so far doth he put his roots under the earth, or rather further, if there be no stop nor let by walls, trees, rocks, barren earth, and such-like for an huge bulke, and strong armes, massie boughes, many branches, and infinite twigs, require wide spreading roots. The top hath the vast aire to spread his boughes in, high and low, this way and that way ; but the roots are kept in the crust of the earth, they may not goe downward, nor upward out of the earth, which is their element, no more then the fish out of the water, Caneilion out of the aire, nor Salamander out of the fire. Therefore they must needs spread far under the earth. And I dare well say. If Nature would give leave to man, by Art to dresse the root of trees, to take away the taws and tangles that lap and fret, and grow superfluously and disorderly, ( for every thing *sublunary* is cursed for mans sake ) the tops above being answerably dressed, we should have trees of wonderfull greatnesse, and infinite durance. And I perswade my selfe that this might be done sometimes in winter, to trees standing in faire plains and kindly earth, with small or no danger at all. So that I conclude, that twenty foure yards is the least space that Art can allow for trees to stand distant one from another.

If you aske me what use shall be made of that wast ground betwixt tree and tree : I answer, If you please to plant some tree or trees in that middle space, you may ; and as your trees grow contiguous, great and thick, you may at your pleasure take up those last trees. And this I take to be the chiefe cause why the most trees stand so thick : for men not knowing ( or not regarding ) this secret of needfull distance, and loving

fruit of trees planted to their hands, think much to pull up any though they pine one another. If you or your heirs or successors would take up some great trees (past setting) where they stand too thick, be sure to doe it about Midsomer, and leave no maine roots. I destinate the space of foure and twenty yards, for trees of age and stature. More then this, you have borders to be made for walks, with Roses, Berries; &c.

And chiefly consider, that your Orchard, for the first twenty or thirty years, will serve you for many Gardens; for Saffron, Licoras, roots, and other hearbs for profit, and flowers for pleasure: so that no ground need be wasted if the Gardiner be skillfull and diligent. But be sure you come not neere with such deep delving the roots of your trees, whose compasse you may partly discern, by the compasse of the tops, if your top be well spread. And under the droppings and shadow of your trees, be sure no hearbs will like. Let this be said for the distance of trees.

#### CHAP. IX.

##### *Of the placing of Trees.*

**T**He placing of trees in an Orchard, is well worth the regard: For although it must be granted, that any of ourforesaid trees (chap. 2.) will like well in any part of your Orchard, being good and well drest earth: yet are not all trees alike worthy of a good place. And therefore I wish that your Filbert, Plums, Damsons, Bulleffe, and such like, be utterly removed from the plain soyle of your Orchard into your fence: for there is not such fertility and easfull growth, as within: and there also they are more subject to, & can abide the blasts of *Aeolus*. The Cherries and Plums being ripe in the hot time of Summer, and the rest standing longer, are not so soon shaken as your better fruit: neither, if they suffer losse, is your losse so great. Besides that, your fences and ditches will devour some of your fruit growing in, or neere your hedges. And seeing the continuance of all these (except Nuts) is small, the care of them ought to be the lesse. And make no doubt, but the fences of a large Orchard will containe a sufficient number of such kind of Fruit-trees in the whole compasse. It is not materiall, but at your pleasure, in the said fences, you may either intermingle your  
your

your severall kinds of fruit-trees; or set every kind by it selfe, or doth very well become your better & greater fruit. Let therefore your Apples, Peares, and Quinces, possesse the soile of your Orchard, unlesse you be especially affected to some of your other kinds: and of them, let your greatest trees of growth stand further from Sun, and your Quinces at the south-side or end, and your Apples in the middle: so shall none bee any hindrance to his fellows. The warden tree, and Winter-peare, will challenge the preeminence for stature. Of your Apple-trees, you shall find a difference in growth. A good Pippin will grow large, and a Costard-tree: stead them on the North-side of your other Apples; thus being placed, the least will give Sun to the rest, and the greatest will shroud their fellows. The Fences and out-trees will guard all.

## CHAP. X.

*Of Grafting.*

**N**OW are we come to the most curious point of our faculty: curious in conceit, but in deede as plaine and easie as the rest, when it is plainly shewn, which we commonly call Grafting. Of Gravino  
or Carving.  
Grafting what



Grafting  
what.

ing, or (after some) Grafting, I cannot Etymologize, nor shew the originall of the Word, except it come of Graving or Carving.

A Graffe.

But the the thing, or matter is: The reforming of the fruit of one tree with the fruit of another, by an artificiall transplanting or transposing of a twigge, bud or leafe, (commonly called a Graft) taken from one tree of the same, or some other kinde, and placed or put to, or into another tree in one time and manner.

Kinds of  
grafting.

Of this there be divers kinds, but three or foure now especially in use: to wit, Grafting, incising, packing on, grafting in the scutchion, or inoculating: whereof the chiefe and most usuall, is called Grafting (by the generall name, *Catevochen*: (for it is the most known, surest, readiest, and plainest way to have store of good fruit.

Graft how.

It is thus wrought; You must with a fine, thin, strong and sharpe Saw, made and armed for that purpose, cut off a foot above the ground, or thereabouts, in a plain without a knot, or as neare as you can without a knot (for some stocks will bee knotty) your Stocke, set, or plant being surely stayed with your foot and legg: or otherwise straight overwhart (for the Stock may be crooked) and then plain his wound smoothly with a sharpe knife: that done, cleave him cleanly in the middle with a cleaver, and a knock or mall, and with a wedge of Wood, Iron, or Bone, two handfull long at least; put into the middle of that cleft, with the same knock, make the wound gape a straw breadth wide into which you must put your Graffes.

A graft what.

The graft is a top-twig taken from some other tree (for it is a folly to put a graffe into his owne stock) beneath the uppermost (and sometimes in need, the second) knot, and with a sharp knife fitted in the knot (and sometimes out of the knot when need is) with shoulders an inch downward, and so put into the stock with some thrusting (but not straining) barke to barke inward.

Eyes.

Let your graffe have three or four eyes for readines to put forth, and give issue to the sap. It is not amisse to cut off the top of your graffe, & leave it but five, or sixe inches long, because commonly you shall see the tops of long graffes die. The reason is this. The sap in grafting receives a rebuke, & cannot worke so strongly presently,

sently and your graffes receive not sap so readily, as the naturall branches. When your graffs are cleanly & closely put in, & your wedge puld out nimblely, for fear of putting your graffs out of frame, take well tempered mortar, soundly wrought with chaffe or horse dung (for the dung of cattle will grow hard, and straine your graffs) the quantity of a Goose egge, and divide it Just, and therewith all cover your stock, laying the one halfe on the one side and the other halfe on the other side of your graffes, (lest thrusting again your graffes you move them) and let both your hands thrust at once, and alike, and let your clay betender, to yeeld easily; and all, lest you move your graffes. Some use to cover the cleft of the stocke, under the clay, with a Piece of barke or leafe, some with a sear cloth of waxe and butter, which as they be not much needfull, so they hurt not, unlesse that by being busie about them, you move your graffs from their places. They use also mosse, tyed on above the clay with some bryar, wicker, or other bands. These profit nothing. They all put the graffes in danger, with pulling and thrusting: for I hold this generall rule in graffing and planting; if your stock and graffes take and thrive (for some will take and not thrive, being tainted by some meanes in the planting or graffing) they will (without doubt) recover their wounds safely and shortly.

General rule.

The best time of graffing from the time of removing your stock is the next Spring, for that saves a second wound, and a second repulse of sap, if your stock be of sufficient bignesse to take a graffe from as big as your thumb, to as big as an arme of a man. You may graffe less (which I like) & bigger, which I like not so well. The best time of the year is in the last part of *February* or *March*, or beginning of *April*, when the Sun with his heat begins to make the sap stirre more rankly about the change of the moon, before you see any great apparency of leafe or flowers, but onely knots and buds, and before they be proud, though it be sooner: *Cherries*, *Pears*, *Apricocks*, *Quinces*, and *Plummes* would be gathered and grafted sooner.

Gathering of graffes.

The graffes may be gathered sooner in *February*, or any time within a month, or two before you graffe, or upon the same day (which I commend) if you get them any time before: for I



Graffes of old trees.

have knowne graffes gathered in *December* and doe well, take heed of drought I have my self taken a burke not of a tree, and the same day when he was laid in the earth about mid *February* gathered graffes and put in him, and one of those graffes bore the third yeare after and the fourth plentifully; Graffes of old trees would be gathered sooner then of young trees for they sooner breake and bud. If you keepe graffes in the earth, moisture with the heat of the Sun wil make them sprout as fast, as if they were growing on the tree. And the refore seeing keeping is dangerous, the surest way (as I judge) is to take them within a weeke of the time of your grafting.

Where taken.

The graffs would be taken not of the proudest twigs, for it may be your stock is not answerable in strength. And therefore (say I) the graffs brought from South to us in the North although they take and thrive (which is somewhat doubtfull, by reason of the difference of the clime and carriage) yet shall they in time fashion themselves to our cold Northern soile, in growth, taste, &c.

Emmits.

Nor of the poorest; for want of strength may make them unready to receive sap (and who can tell but a poor graft is tainted) nor on the outside of your tree, for there should your tree spread, but in the midst: for there you may be sure your tree is no whit hindered in his growth or forme. He will still recover inward, more then you would wish. If your clay clift in Summer with drought, looke well in the Chinkes for Emmets and Earwigs, for they are cunning and close theeves, about graffs; you shall find them stirring in the morning and evening and the rather in the moist weather. I have had many young buds of Graffs, even in the flourishing, eaten with Ants. Let this suffice for grafting, which is in the faculty counted the cheife secret, and because it is most usuall, it is best knowne.

Graffes are not to be disliked for growth, till they wither, pine, and die. Usually before *Midsommer* they break, if they live. Some (but few) keeping proud and green, will not put till the second yeare, so is it to be thought of Sets.

The first shew of putting is no sure signe of growth, it is but the sap the graffe brought with him from his tree.

So soone as you see the graft put forth growth, take away the slay, for then doth neither the stock nor the graft need it, (put a little

little fresh well tempered clay in the hole of the stocks) for the clay is now tender, and rather keeps moisture then drought.

The other waies of changing the naturall fruit of Trees, are more curious then profitable, and therefore I mind not to bestow much labour or time about them, onely I shall make knowne what I have proved, and what I doe thinke.

And first of incising, which is the cutting of the back of the boale, a rine or branch of a tree at some bending or knee, shoul-

Incising.

derwise with two gashes, onely with a sharp knife to the wood: then take a wedge, the bignes of your graf, sharp ended, flat on the one side, agreeing with the tree, and round on the other side, and with that being thrust in, raise your bark, then put in your grafse, fashioned like your wedge just: and lastly cover your wound, and fast it up, and take heed of straining. This will grow but to small purpose, for it is weak hold, and lightly it will be under growth. Thus may you graft betwixt the bark and the tree of a great stock that will not easily be clifted But I have try-

A great stock.

ed a better way for great trees, *viz.* First, cut him off straight, and cleanse him with your knife, then cleave him into four quarters, equally with a strong cleaver: then take for every clift two or three small (but hard) wedges, just of the bignesse of your grafts, and with those wedges driven in with a hammer, open the four clifts so wide (but no wider) that they may take your four grafes with thrusting, not with straining: and lastly cover and clay it closely; and this is a sure & good way of grafting: or thus; clift your stock by his edges twice or thrice with your cleaver, and open him with your wedge in every clift one by one, and put in your grafes and then cover them. This may doe well.

Packing on, is when you cut aslope a twig of the same bignesse with your graft, either in or besides the knot, two inches long, and make your graft agree jump with the cyon, and gash your graft and your cyon in the middest of the wound, length-way, a straw breadth deep, and thrust the one into the other, wound to wound, sap to sap, barke to barke, then tye them close and clay them. This may doe well. The fairest graft I have in my little Orchard, which I have planted, is thus packt on, and the branch whereon I put him, is in his plentifull roote.

Packing thus

To be short in this point, cut your graft in any sort or fashion

two inches long and joyne him cleanly and close to any other sprig of any tree in the latter end of the time of grafting, when sap is somewhat rife, and in all probability they will close and thrive: thus.



*The sprig. The graft. The twig. The graft.*

Or any other fashion you thinke good.

Inoculating.

Inoculating is an eye or bud, taken bark and all from one tree, and placed in the room of another eye or bud of another; cut both of one compass, and their bound. This must be done in Summer, when the sap is proud.

Grafting in Scuthion.

Much like unto this, is that they call grafting in the scuthion, they differ thus: That here you must take an eye with his leaf, or (in mine opinion) a bud with his leaves (Note that an eye is for a scion, a bud is for flowers and fruit) and place them on an other tree, in a plain (for they so teach:) the place or bark where you must set it, must bee thus cut with a sharp knife, & the barke raised with a wedge, and then the eye or bud put in & so bound up. I cannot deny but such may grow. And your bud if he take will flower, and beare fruit in that year: as some grafts and sets also, being set for bloomes. If these two kindes thrive, they reforme but a spray and an under growth. Thus you may place Roses or thornes, and Cherries on Apples, and such like. Many write much more of grafting, but to smal purpose. Whom we leave to themselves; and their followers. and ending this secret, we come in the next chapter to a point of knowledge most requisite in an Arborist as well for all other woods as for an Orchard.

## CHAP. II

*Of the right dressing of Trees.*

Necessity of dressing trees.

**I**F all these things aforesaid were indeed performed, as we have shewed them in words, you should have a perfect orchard nature & substance, begun to your hand: And yet are all these things nothing, if you want that skil to keep and dresse your trees. Such is the condition of all earthly things, whereby a man receiveth profit or pleasure; that they degenerate presently

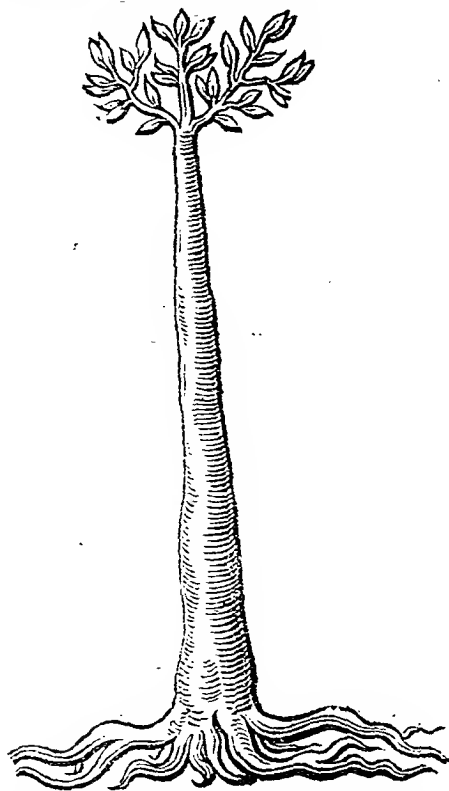
ly without good ordering. Man himself left to himself, grows from his heavenly and spirituall generation, and becometh braistly yea devilish to his own kind, unlesse he be regenerate. No marvell then, if trees make their shoots, and put their sprays disorderly. And truly (if I were worthy to judge) there is not a mischief that breedeth greater and more generall harme to all the Orchard, especially if they be of any continuance that ever I saw, (I will not except three) then the want of the skilfull dressing of trees. It is a common and unskilfull opinion, and saying, Let all grow, and they will beare more fruit: and if thou lop away superfluous boughs they say what a pitty is this? how many apples would these have borne? not considering there may arise hurt to your Orchard, as well (nay rather) by abundance as by want of wood. Sound and thriving plants in a good soile will ever yeeld too much wood, and disorderly, but never too little. So that a skilfull and painfull Arborist need never want matter to effect a plentiful and well drest orchard. for it is an easie matter to take away superfluous boughs (if your gardiner have skill to know them) whereof your plants will yeeld abundance, and skill will leave sufficient well ordered. All ages both by rule and experience do consent to a pruning and lopping of trees: yet have not any that I know described unto us (except in dark and generall words) what or which are those superfluous boughes, which we must take away, and that is the chiefe and most needfull point to be knowne in lopping. And we may well assure our selves, (as in all other Arts, so in this) there is a vantage and dexterity by skill, and an habite by practise out of experience, in the performance hereof for the profit of mankind; yet doe not I know (let me speak it with the patience of our cunning Arborists) any thing within the compasse of human affaires so necessary, and so little regarded, not onely in Orchards, but also in all other timber trees, where, or whatsoever.

Generall rule

How many Forrests and woods wherein you shall have for one lively thriving tree, foure (nay sometimes twenty foure) evill thriving, rotten and dying trees, even while they live? and instead of trees, thousands of bushes and shrubs. What rottenesse? what hollownesse? what dead armes? withered tops? curtalled trunks? what loads of mosses? drouping boughs? and dying

Timber wood  
evill drest.

branches you shall see every where? And those that are like in this sort are in a manner all unprofitable boughs, cankered arms, crooked, little and short boals: what an infinite number of bushes, shrubs, and skrogs of hazels, thornes, and other profitable wood, which might be brought by dressing to become great and goodly trees? Consider now the cause: The lesser wood hath been



The cause of  
hurts in woods

*Imagine the root to be spread far wider.*  
spoiled with carelesse, unskilfull, and untimely flowing and much also of the great wood. The greater trees at the first rising have filled and over-laden themselves with a number of wastful boughs!

boughes and suckers, which have not only drawne the sap from the boale but also have made it knotty, and themselves and the boale mossie for want of dressing, whereas if in the prime of growth they had beene taken away close, all but one top (according to this pattern) and cleane by the bulke, the strength of all the sap should have gone to the bulke, and so he would have recovered and covered his knots, and have put forth a faire long and straight body (as you see) for timber profitable, huge, great of bulke, and of infinite last.

Dresse timber trees how.

If all timber trees were such (will some say) how should we have crooked wood for wheels, &c?

*Ans.* Dresse all you can, and there will be enough crooked for those uses.

More then this, in most places, they grow so thick, that neither themselves, nor earth, nor any thing under or neer them can thrive, nor Sun, nor rain, nor aire can doe them, nor any thing neere or under them, any profit or comfort.

I see a number of Hags, where, out of one roote you shall see three or foure (nay more, such is mens unskillfull greedinesse, who desiring many have none good) pretty Okes or Ashes straight and tall, because the root at the first shoot gives sap a-maine: but if one onely of them might be suffered to grow, and that well and cleanly pruned, all to his very top, what a tree should we have in time? And wee see by those roots continually and plentifully springing, notwithstanding so deadly wounded, what a comodity should arise to the owner, and the Commonwealth, if wood were cherished, and orderly dressed.

The wast boughs closely and skilfully taken away, would give us store of fences and fuell, and the bulk of the tree in time would grow of huge length and bignesse. But here (me thinks) I heare an unskillfull Arborist say, that trees have their severall formes, even by nature, the Peare, the Holly, the Aspe, &c grow long in bulk with few and little armes, the Oke by nature broad and such like. All this I grant: but grant me also, that there is a profitable end and use of every tree, from which if it decline (though by nature) yet man by art may (nay must) correct it. Now other end of trees I could never learne, then good timber, fruit much and good; and pleasure; uses physycall hinder nothing a good forme.

Profit of trees dressed.

The end of trees.

Nei-

Trees will take  
any forme.

Neither let any man so much as thinke, that it is unprofitable much lesse impossible, to reforme any tree of what kind soever For (beleevē me) I have tryed it, I can bring any tree (beginning betimes) to any forme. The Peare and Holly may be made to spread, and the Oke to close.

The end of  
trees.

But why doe I wander out of the compasse of mine Orchard into the Forrests and Woods? Neither yet am I from my purpose, if boals of timber-trees stand in need of all the sap, to make them great and streight (for strong growth and dressing makes strong trees) then it must be profitable for fruit (a thing more immediatly serving a mans need) to have all the sap his root can yeeld: for as timber sound, great, and long, is the *good of timber trees*. and therefore they beare no fruite of worth: so fruit, good, sound, pleasant, great and much, is the end fruite trees. That gardiner therefore shall performe his dutie skilfully & faithfully, which shall so dresse his trees, that they may beare such and such store of fruit, which he shall never doe (I dare undertake) unlesse he keep this order in dressing his trees.

How to dresse  
a fruit-tree.

A fruit tree so standing, that there need none other end of dressing but fruite (not ornaments, not walks, nor delight to such as would please their eye only, and yet the best forme cannot but both adorne and delight) must be parted from within two foot or there abouts, of the earth, so high to give libertye to dresse his roote, and no higher, for drinking up the sap that should feed his fruit, for the boale will be first, and best served and fed, because he's next the roote, and of greatest waxe and substance and that makes him longest of life, into two, three or foure armes, as your stocke or grasse yeeld twigs, and every arme into two or more branches, and every branch into his severall syons, still spreading by equall degrees, so that his lowest spray be hardly without the reach of a mans hand, and his highest be not past two yards higher, rarely (especially in the midst) that no one twig touch his fellow. Let him spread as farre as he list without his maister-bough, or lop equally. And when any bough doth grow sadder and fall lower then his fellowes (as they will with weight of fruit) ease him the next spring of his superfluous twigs, and he will Rise: when any bough or spray shall amount above the rest; either snub his top with a nip be-  
twixt

twixt your finger and your thumb, or with a sharpe knife, and take him cleane away, and so you may use any Cyon you would reforme; and as your tree growes in stature and strength, so let him rise with his tops but slowly, and early, especially in the middest, and equally, and in breadth also; and follow him upward with lopping his under growth and water-boughes, keeping the same distance of two yards, but not above three in any wise, betwixt the lowest and the highest twigs.

1. Thus you shall have well-liking, cleane-skind, healthfull, great, and longlasting trees.

Benefits of  
good dressing.  
Remedy.

2. Thus shall your tree grow low, and safe from winds, for his top will be great, broad, and weighty.

3. Thus growing broad, shall your trees beare much fruit (I dare say) one as much as sixe of your common trees and good without shadowing, dropping and fretting; for his boughes branches, and twigs shall be many, and thole are they (not the boale) which beare fruite.

4. Thus shall your boale being little (not small, but low) by reason of his shortnesse, take little, and yeeld much sap to fruit.

5. Thus your trees by reason of strength in time of setting shall put forth more blossomes and more fruit, being free from taints (for strength is a great help to bring forth much) and safely, whereas weaknesse fails in setting, though the season be calme.

Some use to bare trees roots in winter, to stay the setting till hotter seasons, which I discommend, because

1. They hurt the roots.

2. It stayes nothing at all.

3. Though it did, being small, with us in the North they have their part of our *Aprill* and *May* Frosts.

4. Hinderance cannot profit weak trees in setting.

5. They waist much labour.

6. Thus shall your tree be easie to dresse, and without danger, either to the tree or the dresser.

7. Thus may you safely and easily gather your fruit without falling bruising, or breaking of Cyons.

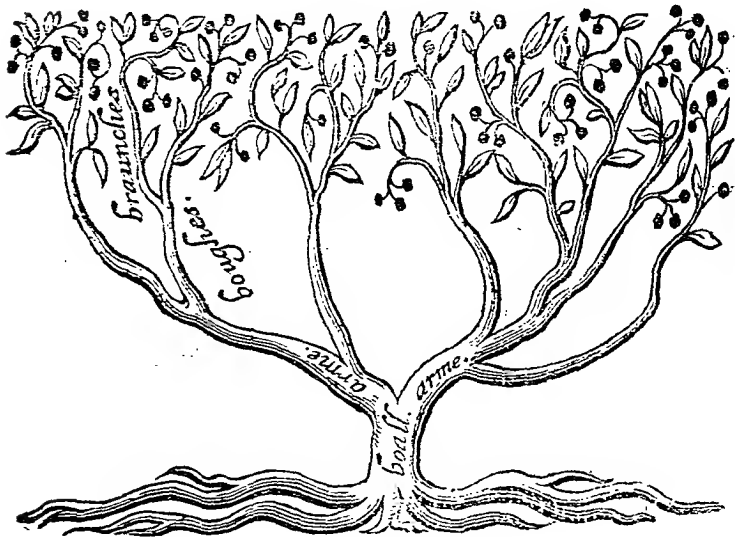
This is the best forme of a fruit tree, which I have here shadowed



meanes in time die : For the sap preffeth upward ; and it is like dowed out for the better capacity of them that are led more with the eye, then the mind, craving pardon for the deformity, because I am nothing skillfull either in the painting or carving.

Imagine that the paper makes but one side of the tree to appeare, the whole round compasse will give leave for many more armes, boughes, branches, and cyons.

*The perfect forme of a Fruit tree.*



If any tree cannot well be brought to this forme : *Experto crede Roberto*, I can shew divers of them under twenty years of age.

Time best for  
Proyning.

The fittest time of the Moone for proyning, is, as of grafting, when the sap is ready to stirre ( not proudly stirring ) and so to cover the wound ; and of the yeere, a moneth before ( or at least when ) you graffe. Dresse Peares, Apricocks, Peaches, Cherries, and Bullys sooner. And old trees before young plants, you may dresse at any time betwixt Leafe and Leafe. And note where you take any thing away, the sap the next Summer will be putting : Be sure therefore when he puts a bud in any place where you would not have him, rub it off with your finger. And

And here you must remember the common homely proverbe : Dressing be-  
time.

*Soone crookes the tree.  
That good Carrrell must be.*

Begin betimes with trees, and do what you list : but if you let them grow great and stubborne, you must doe as the tree list. They will not bend but break, nor be wound without danger. A small branch will become a bough, and a bough an arme in bignesse. Then if you cut him, his wound will fester, and hardly without good skill recover: therefore, *Obst a principiis*. Of such wounds and lesser, or any bough cut off a handfull or more from the body, comes hollownesse, and untimely death. And therefore when you cut, strike close, and cleane, and upward, and leave no bunch.

Faults of evill  
drest trees and  
the remedy.

This forme in some cases sometimes may be altered : If your tree, or trees, stand neere your Walkes, if it please your fancy more, let him not break till his boale be above your head : so may you walk under your trees at your pleasure. Or if you set your fruit trees for your shades in your Groves, then I respect not the forme of the tree but the comlineffe of the walke.

The forme al-  
tereth.

All this hitherto spoken of dressing, must be understood of young plants, to be formed : it is meet, somewhat be said for the instruction of them that have old trees already formed, or rather deformed : for *Malum non vitatur nisi cognitum*. The faults therefore of a disordered tree, I find to be five.

Dressing of old  
trees.

1. An unprofitable boale.
2. Water boughes.
3. Fretters.
4. Suckers. And,
5. One principall top.

Faults are five,  
and their re-  
medies.

A long boale asketh much feeding, and the more he hath the more he desires, and gets, (as a drunken man drink, or a covetous man wealth,) and the lesse remains for the fruit ; he puts his boughes into the ayr, and makes them, the fruit and it selfe more dangered with winds : for this I know no remedy, after that the tree is come to growth ; once evill, never good.

Long boale.

No remedy.

Water boughes, or under growth, are such boughes as grow low under others, and are by them over grown, overshadowed, and dropped on, and pinde for want of plenty of sap, and by that

Water  
boughes.

meane

water in her course, where it findeth most issue, thither it floweth leaving the other lesse sluices dry even as wealth to wealth, and much to more. These so long as they beare, they beare lesse, worse and fewer fruit. and waterish.

Remedy.

The remedy is easie, if they be not grown greater then your arme, lop them close and cleane, and cover the middle of the wound; the next Summer when he is dry, with a salve made of tallow, tarre and a very little pitch, good for the covering of any such wound of a great tree: unlesse it be bark-pild, and then a seare cloth of fresh butter, hony and waxe presently (while the wound is green) applyed, is a soveraigne remedy, in Summer especially. Some bind such wounds with a thumb rope of hay, moist, and rub it with dung.

Bark-pild, and the remedy.

Fretters.

Fretters are, when as by the negligence of the Gardner, two or more parts of the tree, or of diverse trees, as armes, boughes branches, or twigs, grow so neere and close together, that one of them by rubbing doth wound one another. This fault of all other shewes the want of skill (or care at least) in the arborist: for here the hurt is apparent, and the remedy easie, seene to, betimes: galls are wounds incurable, but by taking away those members: for let them grow, and they will be worse and worse, and so kill themselves with civill strife for roomth, and danger the whole tree. Avoid them betime therefore, as a common wealth doth bofome enemies.

Touching.

Remedy.

Suckers.

A Sucker is a long, proud, and disorderly Cyon, growing streight up (for pride of sap makes proud, long, and streight growth) out of any lower parts of the tree receiving a great part of the sap, and bearing no fruit, till it have tyranized over the whole tree. These are like idle and great Drones amongst Bees: and proud and idle members in a common wealth.

The remedy of this is, as of water boughes, unlesse they be growne greater then all the rest of the bonghes; and then your Gardner (at your discretion) may leave him for his boale, and take away all, or the most of the rest. If he by little slip him, and set him, perhaps he will take: my fairest Apple tree was such a slip.

One principall top or bough, and remedy.

One or two principall top-boughes are as evill, in a manner as suckers; they rise of the same cause, and receive the same remedy:

medy: yet these are more tolerable, because these beare fruit, yea the best: but Suckers of long time do not beare.

I know not how your tree should be faulty, if you reforme all your vices timely, & orderly. As these rules serve for dressing young trees, and sets in the first setting: so may they well serve to help old trees, though not exactly to care them.

Instruments  
for dressing.

The instruments fittest for all these purposes, are most commonly, for the greatest trees, an handsome, long, light Ladder of Firpoles, a little, nimble, and strong armed Saw, and sharpe. For lesse trees, a little and sharp Hatchet, a broad mouthed Chell, strong and sharp, with an hand-beetle, your strong and sharp Clever, with a knock, and (which is a most necessary instrument amongst little trees) a great hafted & sharp knife or whittle. And as needfull is a stool on the top of a Ladder of eight or more rungs, with two back feet, whereon you may safely, and easily stand to graffe, to dresse, and to gather fruit; thus formed. The feet may be fast wedged in: but the Ladder must hang loose with two bands of Iron. And thus much of dressing trees for fruit, formally to profit.



## CHAP. 12.

### *Of Soyling.*

There is one thing yet very necessary for to make your Orchard both better, and more lasting: Yea so necessary, that without it your orchard cannot last, nor prosper long, which is neglected generally both in precepts and in practise, viz. manuring with Soil: whereby it happeneth that when trees (amongst other evils) through want of fatnesse to feed them, become mossie, and in their growth are evill (or not thriving) it is either attributed to some wrong cause, as age (when indeed they are but young) or evill standing (stand they never so well) or such like, or else the cause is altogether unknowne, and so not amended.

Necessity of  
soiling.

Trees great  
Suckers.

Can there be devised any way by nature, or art, sooner or foundlier to suck out, and take away the heart of earth, then by great trees; such great bodies cannot be sustained without great store of sap? What living body have you greater then of trees? The great Sea-monsters (whereof one came a land at *Teesmouth*

in *Yorkshire*, hard by us, 18 yards in length, and neere as much in compasse) seeme hideous, huge, strange, and monstrous, because they be indeed great, but especially, because they are seldom seene: but a tree liking, comne to his growth and age, twice that length, and of a bulke never so great, besides his other parts, is not admired, because he is so commonly teen. And doubt not, but if he were well regarded from his kernell, by succeeding ages, to his full strength, the most of them would double their measure. About fifty yeeres ago, I heard by credible and constant reports, That in *Brookham Park* in *Westmer land*, near unto *Pen-ith*, there lay a blowne Oake, whose trunk was so bigge that two Horsemen being the one on the one side, and the other on the other side, they could not see one another: to which if you ad his arms, boughs, & roots, & consider of his bignesse, what would he have been, if preserved to the vantage? Also I read in the history of the *West-Indians*, out of *Peter Martyr*, that sixteen men taking hands one with another, were not able to fathome one of those trees about. Now nature having given to such, a faculty by large and infinite roots, taws and rangles, to draw immediately his sustenance from our common mother the earth which is like in this point to al other mothers that bear) hath also ordained that the tree over-loden with fruit, and wanting sap to feed all she hath brought forth, will waine all shee cannot feed. like women bringing forth more children at once then she hath teats. See you not how trees especially, by kind being greas, standing so thick and close, that they cannot get plenty of sap, pine away all the grasse, weeds, lesser shrubs and trees; yea, and themselves also, for want of vigour of sap? so that trees growing large, sucking the soyl whereon they stand continually and amaine, and the foizon of the earth that feeds them decaying (for what is there that waists continually, that shall not have an end?) must either have supply of sucking, or else leave thriving and growing. Some grounds will beare corn while they be new, and no longer, because their crust is shallow, and not very good, and lying they scind and wash and become barren. The ordinary corne soyls continue not fertile, without following & soyling, & the best requires supply even for the little body of corne. How then can we think that a-

ny

ny ground how good soever can sustaine bodies of such greatnesse, and such great feeding, without great plenty of sap arising from good earth? This is one of the chiefe causes why so many of our Orchards in England are so evill thriving when they come to growth, and our fruit so bad. Men are loth to bestow much ground, and desire much fruit, and will neither set their trees in sufficient compasse, nor yet feed them with manure. Therefore of necessity Orchards must be soiled.

The fittest time is, when your trees are growne great, and have neer hand spread your Earth, wanting new earth to sustain them, which if they doe, they will seek abroad for better earth: and shun that which is barren (if they find better) as cattel evill pasturing. For nature hath taught every creature to desire and seeke his owne good, and to avoid hurt. The best time of the yeare is at the fall, that the frost may bite and make it tender, and the raine wash it into the roots. The Summer time is perillous if ye dig, because the sap stirs amain. The best kind of soyl is such as is fat, hot, and tender. Your earth must be lightly opened, that the Dung may go in, and wash away, and but shallow, lest you hurt the roots: and in the spring, closely and equally made plain againe for fear of Suckers. I could wish, that after my trees have fully possessed the soyle of mine Orchard, that every seven yeers at least, the soil were bespread with Dung halfe a foot thick at least. Puddle water out of the dunghill poured on plentifully, will not onely moisten but fatten especially in *June* and *July*. If it be thick and fat, and applyed every yeere, your Orchard shall need none other soiling. Your ground may lye so low at the River side, that the flood standing some dayes and nights thereon, shall save you all this labour of soiling.

#### CHAP. 13.

##### *Of Annoyances.*

**A** Chiefe help to make every thing good, is to avoid the evils thereof: you shall never attain to that good of your Orchard you look for, unless you have a gardner that can discern the Diseases of your trees, and other annoyances of your Orchard, and find out the causes thereof, and know and apply fit remedies for the same. *For be your ground such plants and trees as you would wish, if they be wasted with hartfull things, what have*

*have you gained, but your labour for your travell : It is with an Orchard and every Tree, as with mans body. The best parts of physick for preservation of health, is to foresee and cure diseases.*

Two kinds of evils in an Orchard. All the diseases of an Orchard are of two sorts, either inter-nall, or externall. I call those inwards hurts which breed on, and in, particular trees.

- |                         |                  |
|-------------------------|------------------|
| 1 Galles.               | 5 Bark bound.    |
| 2 Canker.               | 6 Bark pild.     |
| 3 Moss.                 | 7 Worme.         |
| 4 Weaknesse in setting. | 8 Deadly wounds. |

Galls. Galls, Cankers, Moss, Weaknesse, though they be divers diseases, yet (howsoever authors think otherwise) they rise all out of the same cause.

Galls we have described with their cause and remedy, in the 11 Chapter under the name of fretters.

Canker. Canker is the consumption of any parts of the tree bark and wood; which also in the same place is deciphered under the title of water-boughes.

Moss. Moss is sensible seen and knowne of all, the cause is pointed out in the same chapter, in the discourse of timber-wood, and partly also the remedy: but for Moss addethis, that any time in summer (the spring is best, when the cause is removed) with an Hair cloth immediatly after a showre of raine, rub off your moss or with a piece of wood (if the moss abound) formed like a great knife.

Weaknesse in setting. Weaknesse in the setting of your fruit shall you find there also in the same chapter, and his remedy. All these flow from the want of roomth in good soile, wrong planting, Chapter. 7. and cvill, or no dressing.

Bark-bound. Bark-bound as I think riseth of the same cause, and the best and present remedy (the causes being taken away) is with your sharp knife in the spring, length-way to lance his barke thorow-out 3 or 4 sides of his boul.

Worme. The disease called the worm is thus discerned: the bark will be hollow in diverse places like gall, the wood will dye & dry, and you shall see easilly the bark swell: it is verily to be thought that therein is bred some worme. I have not yet thorowly fought it out, because I was never troubled therewithall: but only

only have seen such trees in divers places. I thinke it a worme rather, because I see this disease in trees, bringing fruit of sweet tast, and the swelling shewes as much. The remedy (as I conjecture) is, so soon as you perceive the wound, the next Spring cut it out bark and all, and apply Cows pisse and vinegar presently, and so twice or thrice a week for a moneths space: For I well perceive, if you suffer it any time, it eates the tree or bough round, and so kills. *Since I first wrote this treatise, I have changed my mind concerning the disease called the worme, because I read in the history of the West-Indians, that their trees are not troubled with the disease called the Worm or Canker, which ariseth of a raw and evill concocted humor or sap. Witnesse Pliny: by reason the Country is more hot then ours; wherefore I think the best remedy is (not disallowing the former, considering that the Worme may breed by such an humor) warme standing, sound lopping, and good dressing.*

Bark-pilld you shall finde with his remedy, in the eleventh Chapter.

Deadly wounds are, when a mans *Arborist* wanting skill, cuts Wounds. off armes, boughes or branches an inch or (as I see sometimes) Remedy. an handfull, or halfe a foot or more from the body: *these so cut, cannot cover in any time with sap, and therefore they dye, and dying they perish the heart, and so the tree becomes hollow, and with such a deadly wound cannot live long.*

The remedy is, if you find him before he be perished, cut him close, as in the 11. Chapter: if he be heal'd, cut him close, fill his wounds though never so deep, with mortar well tempered, & so, close at the top his wound with a Sear-cloth nailed on, that no ayr nor rain approach his wound. If he be very old and declining, he will recover; and the hole being closed, his wound within shall not hurt him for many years.

Hurts on your trees are chiefly Ants, Earwigs, and Caterpillars. Of Ants and Earwigs is said Chap. 10. *Let there be no swarm of pis-mice neer your tree roots, no nor in your Orchard. turne them over in a frost, and pour in water, and you kill them.*

For Caterpillars, the vigilant Fruiterer shall soone espy their lodging by their web, or the decay of leaves eaten round about them. And being seen, they are easily destroyed with your hand,



or rather (if your tree may spare it) take sprig and all: for the red speckled Butter-fly doth ever put them, being her sperm, among the tender sprays for better feeding; especially in drought: & tread them under your feet. I like nothing of smoak among trees. Unnaturall heats are nothing good for naturall trees. *This, for Diseases of particular trees.*

Externall hurts are either things naturall, or artificiall. Naturall things, externally hurting Orchards.

|            |            |           |              |
|------------|------------|-----------|--------------|
| 1. Beasts. | 1 Deer.    | 11 Birds. | 1 Bulfinch.  |
|            | 2 Goats.   |           | 2 Thrush.    |
|            | 3 Sheep.   |           | 3 Blackbird. |
|            | 4 Hare.    |           | 4 Crowe.     |
|            | 5 Cony.    |           | 5 Pyc,       |
|            | 6 Cattell. |           | &c.          |
|            | 7 Horfe.   |           |              |

*The other things are.*

- 1 Winds.
- 2 Cold.
- 3 Trees.
- 4 VVeedes.
- 5 VVormes.
- 6 Moles.
- 7 Filth.
- 8 Poysonfull smoke.

*Externall wilfull evils are these.*

- 1 Walls.
- 2 Trenches.
- 3 Other workes noisome, done in or neere your  
(Orchard.
- 4 Evill Neighbours.
- 5 A carelesse Master.
- 6 An undiscreet, negligent, or no keeper.

See you here an whole army of mischeifes banded in troops against the most fruitfull trees the earth beares? assailing your good labours. Good things have most enemies.

Remedy.

A skilfull Fruiterer must put to his helping hand, and disband and put them to flight.

Deere. &c.

For the first rank of beasts, besides your out strong fence, you must have a faire and swift Grey-hound, a Stone-bow, Gun, and

if need require, an Apple with an hook for a Deer, and an hare-pipe for an Hare.

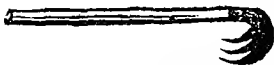
Your Cherries, and other Berries; when they be ripe, will draw all the Black-birds, Thrushes, and Mag-pies, to your Orchard. The Bull-finch is a devourer of your fruit in the bud, I have had whole trees shal'd out with them in winter time. Birds.

The best remedy here is a Stone-Bow, a Piece, especially if you have a musket, or sparrow-hawke in winter to make the Black-bird swoop into a bush or hedge.

The gardner must cleanse his soile of all other trees, but fruit trees, as aforesaid, *chap. 2.* for which it is ordained; & I would especially name Oaks, Elms, Ashes, and such other great wood, but that I doubt it should be taken as an admission of lesser trees for I admit of nothing to grow in my Orchard but fruit and flowers: if sap can hardly be good to feed our fruit trees, should we allow of any other? especially those that will become their Masters, and wrong them in their lively hood.

And although we admit without the fence, of wall-nuts in most plain places, Trees middle most, and Ashes or Oaks, or Elms utmost, set in comely rowes equally distant, with fair Allyes twixt row and row, to avoid the boisterous blasts of winds, and within them also others for bees, yet we admit none of these into your Orchard plat: other remedies then this have we none against the nipping frost. Winds.

Weeds in fertile soil (because the general course is so) till your trees grow great, will be noisome, and deforme your allies walks, beds, and squares; your under-gardeners must labour to keep all cleanly and handsonie from them, and all other filth, with a spade, weeding knives, rake with Iron teeth, a scruple of Iron thus formed, Frosts.



For Nettles, and ground Ivy after a shower.

When weeds, straw, sticks, and all other scrapings are gathered together, burn them not, but bury them under your crust in any place of your Orchard, and they will dye & fatten your ground.

Wormes.  
Moles.

Wormes and Moales open the earth, and let in ayre to the roots of your trees: and deforme your squares and walks; and feeding in the earth, being in number infinite, draw on barrenesse.

Remedy.

Wormes may easily be destroyed. Any Summer evening when it is darke, after a showre with a candle you may fill buthels, but you must tread nimbly, and where you cannot come to catch them so sift the earth with coal-ashes an inch or two thicknesse, and that is a plague to them, so is sharp gravell.

Moales will anger you, if your gardner or some other moal-catcher ease you not; especially having made their fortresses among the roots of your trees; you must watch her well with a Moal-speare, at morning noone and night: when you see her utmost hill, cast a trench betwixt her and her home (for shee hath a principall mansion to dwell and breed in about *April*, which you may discern by a principall hill, wherein you may catch her, if you trench it round and sure, and watch well; or wheresoever you can discern a single passage (for such she hath) there trench, and watch, and have her.

Wilfull annoyances must be prevented and avoided by the love of the Maister and Fruiterer, which they bear to their Orchard.

Justice and liberality will put away evill neighbours, or evill neighbour-hood. And then (if God bleffe and give successe to your labours) I see not what hurt your Orchard can sustaine.

### CHAP. XIII.

#### *The age of Trees.*

**I**T is to be considered, All this treatise of trees tends to this end, that men may love and plant Orchards, whereunto there cannot be a betrer inducement then that they know (or at least be perswaded) that all the benefit they shall reap thereby, whether of pleasure or profit, shall not be for a day, or a moneth, or one, or many, but many hundred years. Of good things the greatest, and most durable is alwayes the best. If therefore out of reason grounded upon experience, it be made (I think) manifest, but I am sure probable, that a fruit tree in such a soyle and

and site, as is described, so planted and trimmed and kept as is afore appointed, and duely soiled, shall dure a thousand yeers, why should we not take pains, and be at two or three yeers charges (for under seven yeers will an Orchard be perfected for the first planting, and in that time be brought to fruit) to reap such a commodity, and so long lasting? The age of trees.

Let no man think this to be strange; but peruse and consider the reason. I have apple trees standing in my little Orchard, which I have known these forty yeers, whose age before my time I cannot learne, it is beyond memory, though I have inquired of divers aged men of 80 yeers and upwards: these trees although come into my possession very ill ordered, and misshapen, and one of them wounded to his heart, and that deadly, (for I know it will be his death) with a wound, wherein I might have put my foote into the heart of his bulke, (now it is lesse) notwithstanding, with that small regard they have had since, they so like, that I assure my selfe they are not come to their growth by more then two parts of three, which I discern not onely by their own growth, but also by comparing them with the bulke of other trees. And I find them short (at least) by so many parts in bignesse, although I know those other fruit trees to have been much hindred in their stature by evill guiding. Here hence I gather thus. Gathered by reason out of experience.

If my trees be a hundred yeeres old; and yet want two hundred of their growth before they leave increasng, which make three hundred, then must we needs resolve, that this three hundred yeeres are but the third part of a trees life: because (as all things living besides) so trees must have allowed them for their increase one third, another third for their stand, and a third part of time also for their decay. All which time of a tree amounts to nine hundred yeeres; three hundred for increase, three hundred for his stand, whereof we have the terme [stature] and three hundred for his decay: and yet I thinke (for we must conjecture by comparing, because no one man liveth to see the full age of trees) I am within the compasse of his age, supposing alwaies the foresaid meanes of preserving his life. Consider the age of other living creatures. The Horse and moiled Oxe, wrought to an untimely death, yet double the time of their in-

increase. A dog likewise increaseth three, stands three at least, and in as many (or rather more) decayes.

Mans age.

Every living thing bestowes the least part of his age in his growth and so must it needs be with trees. A man comes not to his full growth and strength (by common estimation) before thirty yeers and some slender and clean bodies, not till forty: so long also stands his strength, and so long also must he have allowed by course of nature to decay. Ever supposing that he be well kept with necessaries and from and without straines, bruises and all other dominierring diseases. I will not say upon true report, that Physick holds it possible, that a clean body kept by these three Doctors, *Doctor Dyei*, *Doctor Qsiet*, and *Doctor Merryman*, may live neer a hundred years. Neither will I here urge the long yeares of *Methuselah*, and those men of that time, because you will say, Mans dayes are shortned since the flood. But what hath shortned them? God for mans sins; but, by meanes: as want of knowledge, evill government, riot, gluttony, drunkenesse, and (to be short) the encrease of the curse, our sins: increasing in an Iron and wicked age.

Now if a man, whose body is nothing (in a manner) but tender rottenesse, whose courle of life cannot by any meanes, by counsell, restraint of Lawes or punishment, nor hope of praise profit or eternall glory, be kept within any bounds, who is degenerate clean from his natural feeding, to effeminate niceness, and cloying his body with excess of meat, drink, sleep &c. and to whom nothing is so pleasant and so much desired, as the causes of his own death, as idleness, lust, &c may live to that age: I see not but a tree of a solid substance, not damnified by heat or cold, capable of, and subject to any kind of ordering or dressing that a man shall apply unto him, feeding naturally, as from the beginning, disburdened of all superfluties, eased of, and of his owne accord avoiding, the causes that may annoy him, should double the life of a man, more then twice told: and yet natural Philofophy, and the universal consent of all Histories tell us, that many other living creatures far exceed man in length of yeares: As the Hart, and the Raven. Thus reporteth that famous *Rozerdan* out of *Hesiodus*, and many other Historiographers. The testimony of *Cicero* in his book *De Senectute*, is weighly to  
this

this purpose: that we must *in posteris atates senere arbores*, which can have none other sense, but, that our fruit trees whereof he speakes, can indure for many ages.

What else are trees, in comparison with the earth, but as haire to the body of a man? And it is certain, without poysoning, evill and distemperate dyer, and usage, or other such forcible cause, the haire dure with the body. That they be called excrements, it is by reason of their superfluous growth: (for cut them as often as you list, and they will still come to their naturall length) Not in respect of their substance, and nature. Haires endure long, and are an ornament, and of use also to the body, as trees to the earth.

So that I resolve upon good reason, that fruit trees well ordered, may live and like a thousand yeares, and beare fruit: and the longer, the more, the greater, and the better, because his vigour is proud and stronger, when his yeeres are many. You shal see old trees put forth their buds and blossomes both sooner and more plentifull then young trees, by much. And I sensibly perceive my young trees to enlarge their fruit as they grow greater, both for number and greatnesse. Young Heifers bring not forth Calves so fair, neither are they so plentifull to milke, as when they become to be old Kine. No good Houf-wife will breed of a young, but of an old breed-mother: It is so in all things naturally, therefore in trees.

And if fruit trees last to this age, how many ages is it to be supposed, strong and huge timber trees will last? whose huge bodies require the yeares of divers *Methuselaes*, before they end their dayes, whose sap is strong and bitter, whose barke is hard and thicke, and their substance solid and stiffe: all which, are defences of health and long life. Their strength withstands all forcible winds, their sap of that quality is not subject to wormes and tainting. Their bark receives seldome or never by casualty any wound. And not onely so, but he is free from removals, which are the death of millions of trees, whereas the fruit-tree in comparison, is little and often blown down, his sap sweet, easily, and soon tainted, his bark tender, and soon wounded, and himself used by man, as man useth himself, that is, either unskillfully or carelessly.

The age of  
Timber trees.

Age of trees  
discerned.

It is good for some purposes to regard the age of your fruit trees which you may easily know, till they come to accomplish twenty yeeres, by his knots: Reckon from his root upward an arme, and so to his top twig, and every years growth is distinguished from other by a knot, except lopping or removing doe hinder.

### CHAP. XV.

#### *Of gathering and keeping Fruit.*

Generall rule.

**A**lthough it be an easie matter, when God shall send it, to gather and keep fruit, yet are there certaine things worthy your regard. You must gather your fruit when it is ripe, and not before, else will it wither, and be tough and sower. All fruits generally are ripe, when they begin to fall. For trees doe as all other bearers doe, when their young ones are ripe, they will wain them. The Dove her Pigeons, The Coney her Rabbets, and women their Children. Some fruit-trees sometimes getting a taint in the setting with a frost or evill wind, will cast his fruit untimely, but not before he leave giving them sap, or they leave growing. Except from this foresaid rule, Cherries, Damsons & Bullies. The Cherry is ripe when he is swelled, wholly red, and sweet. Damsons and bullies not before the first frost.

Cherries, &c.

Apples.

Apples are knowne to be ripe, partly by their colour growing towards a yellow, except the Leather-coate, and some Peares, and greenings.

When.

Timely Summer fruit will be ready, some at midsummer most at Lammas for present use; but generally no keeping fruit before *Michael tide*. Hard winter fruit, and Wardens longer.

Gather at the full of the Moone for keeping, gather dry for feare of rotting.

Dry stalkes.

Gather the stalkes withall: for a little wound in fruit is deadly but not the stump, that must bear the next fruit; nor leaves, for moisture putrifies.

Severally.

Gather every kind severally by it selfe, for all will not keep alike and it is hard to discern them, when they are mingled

Over laden  
trees.

If your trees be over laden (as they will be, being ordered, as is before taught) I like better of pulling some off (though they be

be not ripe) near the top end of the bough, then of propping by much, the rest shall be better fed. Propping puts the boughs in danger, and frets it at least.

**Instruments:** A long ladder of leight firre, a stool-ladder as Instruments. in the eleventh chapter. A gathering-apron like a poake before you, made of purpose, or a Wallet hung on a bough, or a basket with a sieve bottome, or skin bottome, with lathes or splinters under, hung in a rope to pull up and downe: bruise none, Bruises. every bruise is to fruit, death: if you doe, use them presently: an hooke to pull boughes to you is necessary, break no boughes.

For keeping, lay them in a dry loft, the longest keeping Ap Keeping. ples first and furthest on dry straw, on heaps, ten or fourteene dayes, thicke, that they may sweat. Then dry them with a soft and cleane cloth, and lay them thin abroad. Long keeping fruit would be turned once in a month softly but not in, nor immediately after frost. In a loft, cover'd well with straw, but rather with chaffe or branne: For frost doth cause tender rottenesse.

#### CHAP. XVI.

##### *Of profits.*

**N**OW pause with your selfe, and view the end of all your labours in an Orchard: unspeakable pleasure, and infinite commodity. The pleasure of an Orchard I refer to the last chapter, for the conclusion; & in this chapter, a word or two of the profit, which thorowly to declare is past my skill: & I account it as if a man should attempt to adde light to the Sun with a candle, or number the starres. No man that hath but a mean Orchard or judgment but knowes, that the commodity of an Orchard is great: Neither would I speak of this, being a thing so manifest to all; but that I see, that through the carelesnes of men, it is a thing generally neglected. But let them know, that they lose hereby the chiefest good which belongs to house keeping.

Compare the commodity that commeth of halfe an acre of ground, set with fruite-trees and hearbs, so as is prescribed, and an whole acre (say it be two) with corn, or the best commodity you can wish and the orchard shall exceed by divers degrees.

In *France* and some other countries, and in *England*, they Cyder and make great use of Cider and Perry, thus made: dresse every Perry. apple, the stalke, upper end, and all galls away, stamp them, and



fraine them, and within twenty four howers tun them up into clean, sweet, and sound vessels, for fear of evill ayre, which they will readily take: and if you hang a poakefull of Cloves, Mace, Nutmegs, Cinamon, Ginger, and pils of Lemons in the middest of the vessell, it will make it as wholesome & pleasant as wine. The like usage doth Perry require.

These drinks are very wholesome; they coole, purge, and prevent hot agues. But I leave this skill to Physitians.

Fruit. The benefit of your Fruit, Roots, and Herbs, though it were but to eat and sell, is much.

Waters. Waters distilled of Roses, Woodbind, Angelica, are both profitable and wondrous pleasant, and comfortable. Saffron and Licoras will yeeld you much.

Conservees. Conservees, and preserves, are ornaments to your feasts, health in your Sicknesse, and a good help to your freind, and to your purse.

He that will not be moved, with such unspeakable profits, is well worthy to want, when others abound in plenty of good things.

## CHAP. XVII.

### *Ornaments.*

**M**e thinks hitherto we have but a bare Orchard for fruit, and but halfe good, so long as it wants those comely Ornaments that should give beauty to all our labours, and make much for the honest delight of the owner and his friends.

Delight the  
chiefe end of  
Orchards.

For it is not to be doubted, but as God hath given man things profitable, so hath he allowed him honest comfort, delight, and recreation in all the works of his hands. Nay, all his labours under the Sun without this are troubles, and vexations of mind: For what is greedy gaine, without delight, but moyling, and turmoiling in slavery? But comfortable delight, with content, is the good of every thing, and the pattern of heaven. A morsell of bread with comfort, is better by much then a fat Oxe with unquietnesse. And who can deny but the Principall end of an Orchard, is the honest delight of one wearied with the workes of his lawfull calling? The very workes of, and in an Orchard and Garden, are better then the ease and rest of, and from other labours. When God had made man after his owne

An Orchard  
delightful.

Image,

Image, in a Perfect state, and would have him to represent himself in authority, tranquillity, and pleasure upon the earth, he placed him in *Paradise*. What was *Paradise*? but a Garden and Orchard of trees and herbs, full of pleasure? and nothing there but delights. The gods of the earth resembling the great God of heaven in authority, Majesty and abundance of all things, wherein is their most delight? and whither do they withdraw themselves from the troublesome affairs of their estate, being tyred with the hearing and judging of litigious controversies, choaken (as it were) with the close ayre of their sumptuous buildings, their stomacks cloyed with variety of Banquets their ears filled and overburthened with tedious discourtings? whither? but into their Orchards? made and prepared, dressed and destinated for that purpose, to renew and refresh their senses, and to call home their over-wearied spirits. Nay, it is (no doubt) a comfort to them, to set open their casements into a most delicate Garden and Orchard, whereby they may not onely see that, wherein they are so much delighted, but also to give fresh, sweet and pleasant aire to their Galleries and chambers.

An Orchard  
in Paradise.

Cause of wearisomnesse.

Orchard is  
the remedie.

And look what these men do by reason of their greatnesse and ability, provoked with delight, the same doubtlesse would every of us doe, if power were answerable to our desires: whereby we shew manifestly, that of all other delights on earth, they that are taken by Orchards are most excellent and most agreeing with nature.

All delight in  
Orchards.

For whereas every other pleasure commonly fills some one of our senses, and that onely, with delight; this makes all our senses swim in pleasure, and that with infinite variety, joyned with no lesse commodity.

This delights  
all the senses.

That famous *Philosopher*, and matchlesse Orator, *M.T.C.* prescribeth nothing more fit, to take away the tediousnesse of three or fourescore yeers, then the pleasure of an Orchard.

Delighteth  
of old age.

What can your eye desire to see, your ears to heare, your mouth to tast, or your nose to smell, that is not to be had in an Orchard, with abundance of variety? What more delightfome then an infinite variety of sweet smelling flowers? decking with sundry colours, the green mantle of the earth; the universall

Causes of delight in any  
Orchard.

mother of us all, so by them bespotted, so dyed, that all the world cannot sample them, and wherein it is more fit to admire the dyer, then imitate his workmanship, colouring not onely the earth, but decking the aire, and sweetning every breath and spirit.

Floures.

The Rose red, damask, velvet, and double double province Rose, the sweet musk Rose double and single, the double and single white Rose; The faire and sweet senting woodbine, double and single, and double double. Purple Cowslip, and double Cowslips, and double double Cowslips; Primrose double and single. The Violet nothing behind the best, for smelling sweetly. A thousand more will provoke your content.

Borders and squares.

And all these by the skill of your Gardener, so comelily and orderly placed in your borders & squares, and so intermingled, that one looking thereon cannot but wonder, to see, what nature corrected by Art, can doe.

Mounts.

When you behold in diverse corners of your Orchard *Mounts* of stone or wood, curiously wrought within and without, or of earth covered with fruit trees, Kentish Cherries, damsons, Plums, &c. with staires of precious workmanship; and in some corner (or moe) a true dial or clock, and some Antickworks; and especially silver-sounding Musick, mixt instruments, and voyces, gracing all the rest: How will you be wrapt with Delight?

Whence you may shoot a Buck.  
Dial.  
Musick.

Walks.

Large Walks, broad and long, close and open, like the *Tempe-groves* in *Theffaly*, raised with gravell and sand, having seats and banks of *Cammomile*; all this delights the mind, and brings health to the body.

Seats.

Order of trees.

View now with delight the works of your owne hands, your fruit-trees of all sorts, loaden with sweet blossomes; and fruit of all tastes, operations and colours: your trees standing in comely order which way soever you look.

Shape of men and beasts.

Your borders on every side hanging and drooping with *Ferberries*, *Raspberries*, *Barberries*. *Currans*; and the roots of your trees powdered with *Strawberries*, red, white and green, what a pleasure is this? Your Gardener can frame your lesser wood to the shape of men armed in the field, ready to give battell: of swift running *Greyhounds*, or of well sented and true running *Hounds*

Hounds to chase the Deer, or hunt the Hare. This kind of hunting shall not waſt your corne; nor much, your coyne.

Mazes well framed a mans height, may perhaps make your friend wander in gathering of berries till he cannot recover himself without your help. Mazes.

To have occasion to exercise within your Orchard: it shall be a pleasure to have a bowling Alley, or rather (which is more manly, and more healthfull) a paire of Butts, to stretch your arms. Bowling-Alley.  
Butts.

Rosemary and sweet Eglantine are seemly ornaments about a Doore or Window, and so is Woodbine. Herbes.

Look Chapt 15. and you shall see the forme of a Conduit. If there were two or more, it were not amiss. Conduit.

And in mine owne opinion I could highly commend your Orchard, if either through it, or hard by it, there should runne a pleasant River with silver streams: you might sit in your Mount, and angle a peckled Trout, sleighty Eel, or some other dainty Fish Or moats, whereon you might row with a Boat and fish with Nets. River.  
Moats.

Store of Bees in a dry and warm Bee-houſe, comely made of Fir boards to ſing, and ſit, and feed upon your flowers and ſprouts, make a pleasant noyſe and ſight. For cleanly and innocent Bees, of all other things, love and become, and thrive in an Orchard. If they thrive (as they muſt needs, if your Gardner be ſkilfull, and love them: for they love their friends, and hate none but their enemies) they will beſides the pleaſure, yield great profit to pay him his wages. Yea, the increaſe of twenty Stocks or Stooles, with other fees, will keep your Orchard. Bees.

You need not doubt their ſtings, for they hurt not whom they know, and they know their keeper and acquaintance. If you like not to come among them, you need not doubt them: for but near their ſtore, and in their owne defence, they will not fight, and in that caſe onely (and who can blame them?) they are manly, and fight deſperately. Some (as that honourable Lady at *Hacknes*, Whoſe name doth much grace mine Orchard, uſe to make ſeats for them in the ſtone walls of their Orchard, or Garden, which is good; but wood is better.

A Vine overſhadowing a ſeat, is very comely, though her Grapes with us ripen ſlowly. Vine.  
One

Birds-  
Nightingale.

One chiefe grace that adornes an Orchard, I cannot let slip: A brood of Nightingales, who with severall notes and tunes, with a strong delightfome voyce out of a weak body, will bear you company night and day. She loves (and lives in) hots of woods in her heart. She will help you to cleanse your trees of Caterpillers, and all noysome wormes and flies. The gentle Robin-red-brest will help her, & in winter in the coldest storms will keep a part. Neither will the silly Wren be behind in Summer, with her distinct whistle, (like a sweet Recorder) to cheare your spirits.

Robin-red-  
breft.  
Wren.

Black bird.  
Thrush.

The Black-bird and Thrush (for I take it, the Thrush sings not, but devours) sing loudly in a *May* morning, and delights the care much. and you need not want their company, if you have ripe Cherries or Berries, and would as gladly as the rest doe your pleasure: but I had rather want their company than my fruit.

What shall I say? A thousand of pleasant delights are attending an Orchard: and sooner shall I be weary, then I can reckon the least part of that pleasure which one that hath, and loves an Orchard, may find therein.

What is there of all these few that I have reckoned, which doth not please the eye, the eare, the smell, and tast? And by these senses as Organs, Pipes, and windows, these delights are carried to refresh the gentle, generous, and noble mind.

Your owne  
labour.

To conclude, what joy may you have, that you living to such an age, shall see the blessings of God on your labours while you live, and leave behind you to heirs, or successors (for God will make heirs) such a work, that many ages after your death, shall record your love to their Countrey? And the rather, when you consider (*Chap. 14.*) to what length of time your worke is to last.

**FINIS.**

THE  
COUNTRY HOVSE-WIVES  
GARDEN,

Containing Rules for herbs, and Seeds,  
of common use, with their times and seasons  
when to set and sow them.

Together  
With the Husbandry of Bees, published  
with secrets very necessary for every *Hous-*  
*wife*: as also divers new Knots for Gardens.

The Contents see at large, in the last Page.

Genes. 2. 29.

*I have given unto you every Herb, and every tree, that shall be to  
you for meat.*

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LONDON,

Printed by *W. Wilson*, for *E. Brewster*, and *George  
Sambridge*, at the Bible on Ludgate-hill,  
neere Fleet-bridge. 1656.



# THE COUNTRY HOU SWIFES GARDEN.

## CHAP. I.

### *The Soyle.*



The Soyl of an Orchard and Garden, differ only in these three poynts : First, the Gardens soyl would be somewhat dryer, because herbs being more tender then trees, can neither abid moysture nor drought, in such excessive measure, as trees ; and therefore having a dryer soyl, the remedy is easie against drought, if need be : water soundly ; which may be done with small labour the compasse of a Garden being nothing so great, as of an Orchard. : and this is the cause (if they know it) that Gardners raise their squares : but if moysture trouble you, I see no remedy without a generall danger, except in Hopps, which delight much in a low and sappy earth.

Secondly, the soyl of a Garden would be plaine and levell, at least every square (for we purpose the square to be the fittest form) the reason is the earth of a garden wanting such helps, as should stay the water, which an orchard hath & the roots of herbs

Dry.

HePs.

ing mellow and loose, is soon either washed away, or sends out his heart by too much drenching and washing.

Thirdly, if a garden soil be not cleere of weeds, and namely of grass, the herbs shall never thrive: for how should good herbs prosper, when evill weeds wax so fast: considering good herbs are tender in respect of evill weeds: these being strengthened by nature, and the other by art? Gardens have small place in comparison, and therefore may more easily be followed, at the least one half year before, and the better dressed after it is framed. And you shall find that clean keeping doth not only avoid danger of gathering weeds, but also is a speciall ornament, and leaves more plentifully sap for your tender herbs.

## CHAP. II.

### *Of the Sites.*

I Cannot see in any sort, how the site of the one should not be good, and fit for the other: The ends of both being one, good, wholesome, and much fruit joyned with delight, unlesse trees be more able to abide the nipping frosts than tender herbs: but I am sure, the flowers of trees are as soon perished with cold: as any herbe except Pumpion, and Melon.

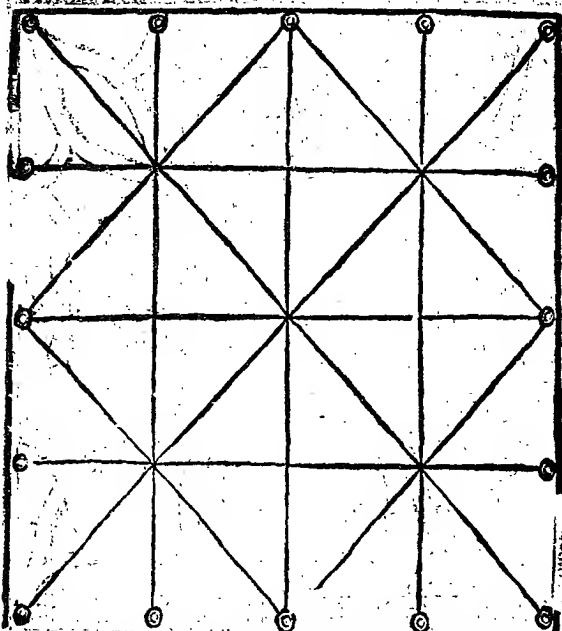
## CHAP. III.

### *Of the Forme.*

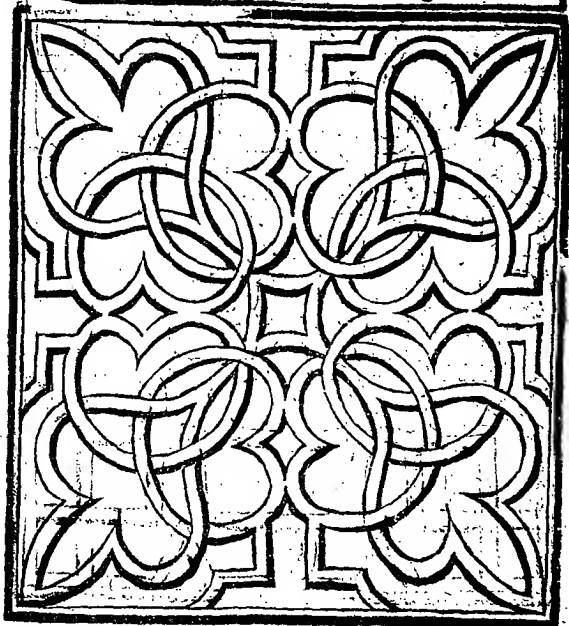
Let that which is said in the Orchards forme, suffice for a garden in generall: but for speciall formes in squares, they are as many, as there are devices in Gardners braines. Neither is the wit and art of a skilfull Gardner in this point not to be commended, that can worke more variety for breeding of more delightfull choice, and of all those things, where the owner is able and desirous to be satisfied. The number of formes, Mazes and Knots is so great, and men are so diversly delighted, that I leave every House-wife to her self, especially seeing to let downe many, had been but to fill much paper: yet least I deprive her of all delight and direction, let her view these few, chiefe, new formes; and note thjs generally, that all plots are square, and all are bordered about with Privet, Raisins, Fea-berries, Roses, Thorne, Rosemary, Bec-flowers, Hop, Sage, or such like.

CHAP.



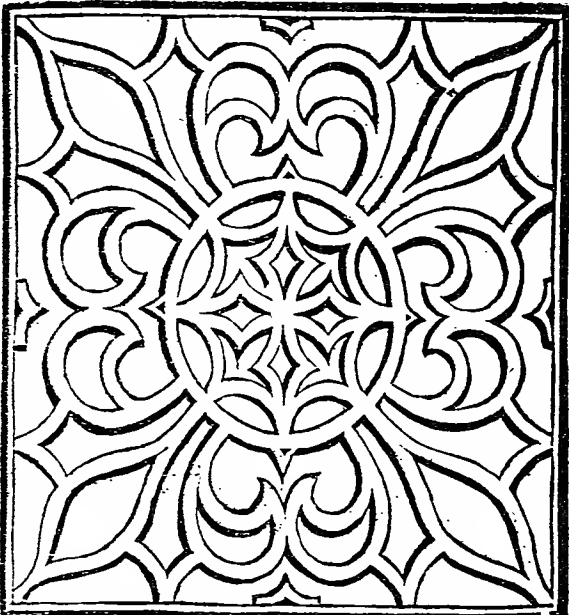


The ground plot for knots.

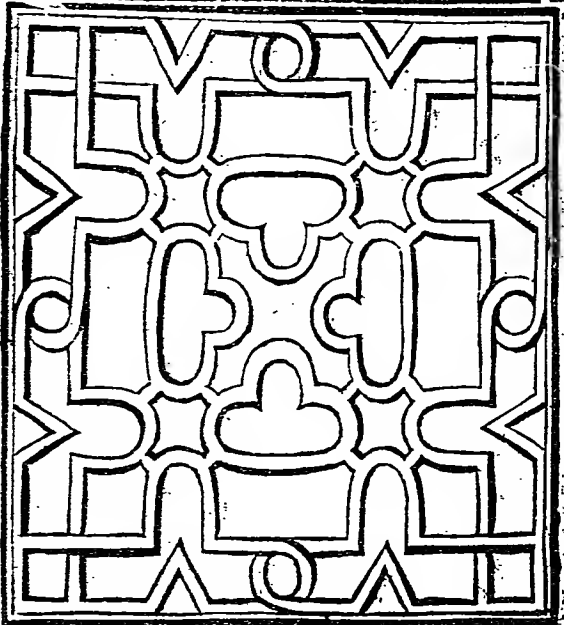


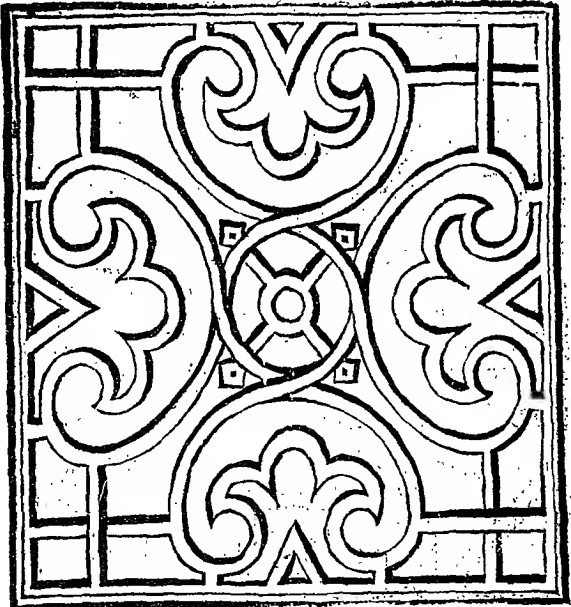
Cinkfoile;

17

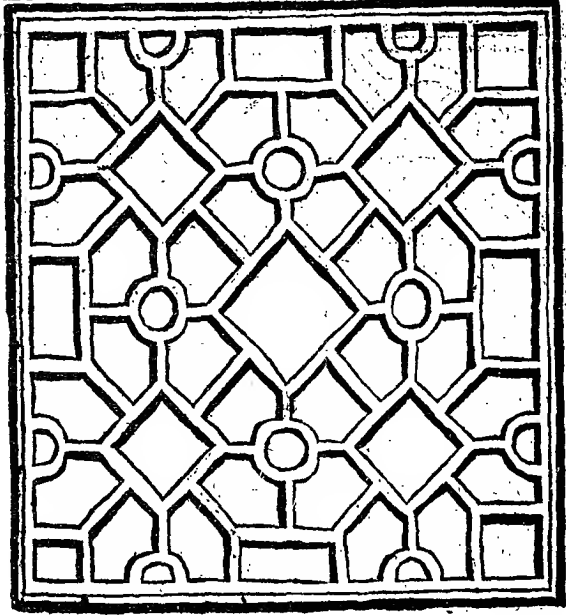
Flower  
deluce.

The Tre-



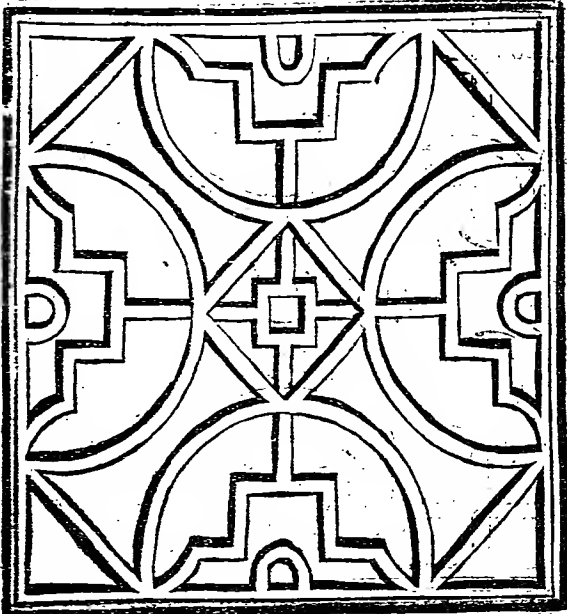


The Fret.

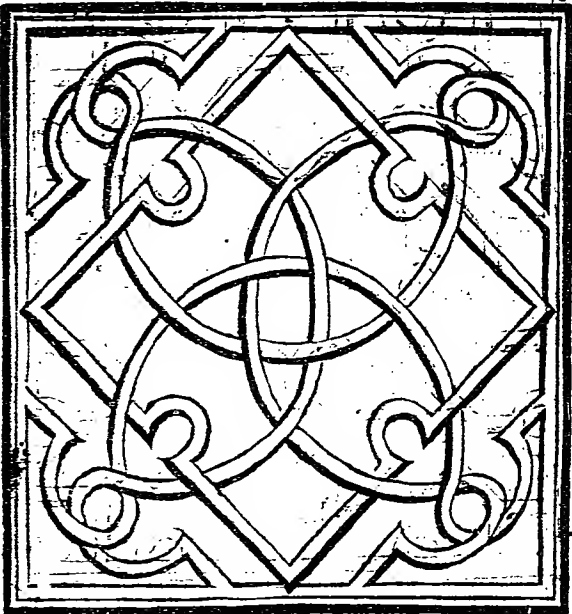


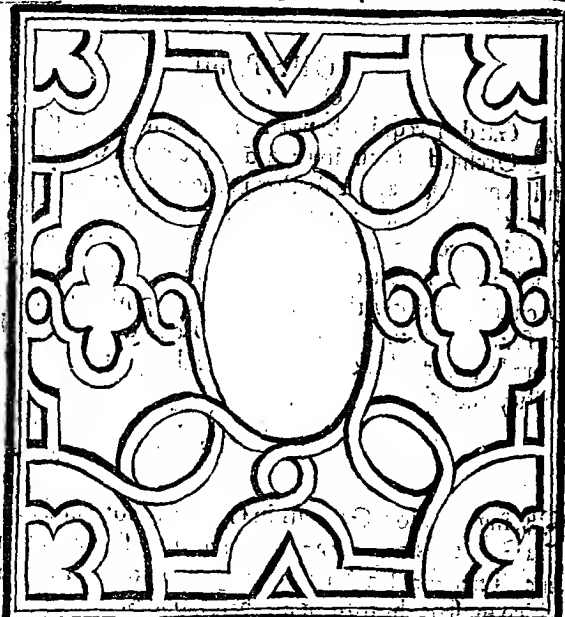
Lozenges.

Crossebow.



Diamond.





Ovall.



Maze.

## CHAP. III.

*Of the Quantity.*

A Garden requireth not ſo large a ſcope of ground as an Orchard, both in regard of the much weeding, dreſſing and removing, and alſo the pains in a Garden is not ſo well repayed home, as in an Orchard: It is to be granted, that the Kitchin garden doth yeeld rich gains, by berries, roots, cabbage, &c. yet theſe are no way comparable to the fruit- of a rich Orchard: But notwithstanding I am of opinion that it were better for *England* that we had more Orchards and Gardens, and more large. And therefore we leave the quantity to every mans ability and will.

## CHAP. V.

*Of Fence.*

Seeing we allow Gardens in Orchard-plots, and the benefit of a Garden is much, they both require a ſtrong and ſhrowding fence. Therefore leaving this, let us come to the Herbs themſelves, which muſt be the fruit of all theſe labours.

## CHAP. VI.

*Of two Gardens.*

Herbes are of two ſort, and therefore it is meete (they requiring diſverſe manners of Husbandry) that we have two Gadens: A garden for flowres and a Kitchin garden: or a Summer garden: not that we mean ſo perfect a diſtinction, that wee meane the Garden for flowrs ſhould or can be without herbs good for the Kitchin, or the Kitchin garden ſhould want flowres, nor on the contrary: but for the moſt part they would be ſepered: firſt becauſe your Garden flowres ſhall ſuffer ſome diſgrace, if among them you intermingle Onions, Parſnips, &c. Secondly, your Garden that is durable, muſt be of one form: but that which is your Kitchens uſe, muſt yeeld daily roots, or other herbs and ſuffer deformity. Thirdly, the herbs of both will not be both alike ready, at one time, either for gathering, or removing. Firſt therefore.

Of

*Of the Summer Garden.*

These herbs and flowers are comely and durable for squares & Knots, and all to be set at *Michaelide*, or somewhat before; that they may be settled in, and taken with the ground before winter; though they may be set, especially sown, in the spring.

Roses of all sorts (spoken of in the Orchard) must be set. Some use to set slips and twine them, which sometimes, but seldom, thrive all.

Rosemary, Lavender, Bee-flowres, Ilop, Sage, Time, Cowslips, Pyony, Daisies, Clove Gilliflowres, Pinks, Sothernwood, Lillies, of all which hereafter.

*Of the Kitchen Garden.*

Though your Garden for flowers doth in a sort peculiarly challenge to it self a perfit, and exquisite form to the eyes, yet you may not altogether neglect this, where your herbs for the pot do grow. And therefore some here make comely borders with the herbs aforesaid. The rather because abundance of Roses and Lavender, yeeld much profit, & comfort to the senses: Rose water Lavender, the one cordiall (as also the Violets, Borage, and Buglas) the other reviving the spirits by the sense of smelling: both most durable for smell, both in flowers and water: you need not here raise your beds, as in the other garden, because Summer towards, will not let too much wet annoy you. And these herbs require more moysture: yet must you have your beds devided, that you may go betwixt to weed, and somewhat of form would be expected: To which it availeth that you place your herbs of biggest growth, by walles; or in borders, as Fennell, &c. and the lowest in the midst, as Saffron, Strawberries, Onions, &c.

## CHAP. VII.

*Division of Herbs:*

Garden herbs are innumerable, yet these are common, and sufficient for our Country-houswives.

*Herbs of greatest growth.*

Fennell, Angelica, Tanfic, Hollihock, Lovage, Elicampane, French Mallowes, Lilies, French Poppie, Endive, Succory, and Glary.

*Herbs of middle growth.*

Burrage, Buglosse, Parsly, Sweet Sicily, Flower-deluce, Stock, gilliflowres, Wall-flowers, Anniseeds, Coriander, Fether-sew Mary-golds, Oculus Christi, Langdibeeff, Alexanders, Carduus-benedictus,

*Herbs of smallest growth.*

Panfic, or Harts-case, Coast-Marjoram, Savory, Strawberries, Saffron, Lycoras Daffadownillies, Leeks, Chives, Chibbals, Skerots Onions, Batchelors buttons, Dasies, Peniroyal.

Hitherto I have only reckoned up, and put in this rank, some Herbs: their Husbandry followes, each in an Alphabetical order, the better to be found.

CHAP. VIII.

*Husbandry of Hearbs.*

**A** Alexanders: are to be renewed as Angelica. It is a timely Potherb.

Angelica: is renewed with the seed, whereof he beareth plenty the second year and so dyeth. You may remove the roots the first year. The leaves distilled, yeild water soveraign to expel paine from the stomack. The roote dryed taken in the fall; stoppeth the pores against infections.

Anniseeds: make their growth, and bear seeds the first yeere and dieth as Coriander: it is good for opening the pipes, and it is used in Comfits.

Artichoakes: are renewed by dividing the roots into Sets, in *March*, every third or fourth year. They require a severall usage, and therefore a severall whole plot by themselves, especially considering they are plentifull of fruit much desired.

Burrage and Buglesse: two Cordials renew themselves by seed yearly, which is hard to be gathered, they are exceeding good Pot-herbs, good for Bees, and most comfortable for the heart and stomack, as Quinces and VVardens.

Camomile: set roots in banks and walks. It is sweet smelling, qualifying head-ach.



**Cabbages:** require great roome, they seed the second year, sow them in *February*, remove them when the plants are an handfull long, set deep and wet. Look well in drought for the white Caterpillars worme, the spaunes under the leaf closely: for every living Creature doth seek food and quiet shelter, and growing quick they draw to, and eat the heart: you may find them in a rainy dewy morning.

It is a good Pot-herbe, and of this herbe called *Cole*, our Country Housewives give their pottage their name, and call them *Caell*.

**Cardus Benedictus**, or blessed thistle seeds and dyes the first year, the excellent vertue thereof I referre to Herballs, for we are Gardiners, not Physicians.

**Carrets** are sown late in *Aprill* or *May*, as Turneps, else they seed the first year, & then their roots are naught: the second yeere they dye, their roots grow great and require large roome.

**Chibals** or **Chives** have their roots parted, as **Garlick**, **Lillies**. &c. and so are they set every third or fourth year: a good pot-herbe, opening, but evill for the eyes.

**Clary** is sowne, it seeds the second year, and dyes. It is somewhat harsh in tast, a little in pottage is good, it strengtheneth the reines.

**Coast**, Root parted, makes Sets in *March*: it beares the second year: it is used in Ale in *May*.

**Coriander**: is for usage and uses, much like Anniseeds.

**Daffadownillies**: have their roots parted & seed once in three or four year or longer time. They flower timely, and after *Midsummer* are scarcely seen. They are more for Ornament, then for use, so are **Daisies**.

**Daisie** roots, ported and Set, as **Flowre deluce** and **Camomile**, when you see them grow too thicke or decay. They be good to keep up, and strengthen the edges of your borders, as **Pinks**, they be red, white, mixt.

**Ellicampane** root is long lasting, as is the **Lovage**: it seeds yearly, you may divide the roots, and set the roots, taken in winter it is good (being dried, powdered and drunk) to kill itches.

**Endive** and **Succory**: are much like in nature, shape, and use,

they renew themselves by seed, as Fennell, and other herbs. You may remove them before they put forth shanks: a good Pot-herbe.

Fennell is renewed, either by the seeds (which it beareth the second year, and so yearly in great abundance) sown in the fall or Spring; or by deviding one root into many Sets, as Artichoke. It is long of growth & life. You may remove the root unshankt: It is exceeding good for the eyes, distilled, or any other wise taken: it is used in dressing Hives for swarms; a very good Pot-herb, or for Sallets.

Fetherfew shaks seed. Good against a shaking Fever, taken in a posset drink fasting.

Flower deluce, long lasting, Divide his roots, and Set: the roots dried have a sweet smell:

Garlick may be Set an handfull distance, two inches deep, in the edge of your beds. Part the head into severall cloves, and every clove, set in the latter end of *February*, will increase to a great head before *September*: good for opening, evill for eyes: when the blade is long, fast two & two together, the heads will be bigger.

Hollihock riseth high, seedeth and dyeth, the chief use I know is ornament.

Ifop is reasonable long lasting: young roots are good Set, slips better. A good pot-herbe.

July-flowres, commonly called Gilly-flowres, or Clove July-flowres (I call them so, because they flowre in July) they have the name of Clovet, of their sent. I may well call them the King of flowres except the Rose) & the best sort of the are called Queen-July flowres. I have of them nine or ten severall colours, & divers of them as big as Roses; of all flowres (save the Damaske Rose) they are the most pleasant to sight and smel: they last not past three or four years unremoved. Take the slips (without shanks) and Set any time, save in extreame frost, but especially at *Michael-side*. Their use is much in ornament, and comforting the spirits, by the sense of smelling.

July-flowres of the wall, or wall-July-flowres, Wall-flowres or Bee-flowres, or Winter-July-flowres, because growing in the walls even in winter, and good for Bees, will grow even in stone-walls

walls, they will seem dead in Summer, and yet revive in Winter they yeeld seed plentifully, which you may sow at any time, or in any broken earth, especially on the top of a mud-wall, but moist, you may set the root before it be brancht, every slip that is not flowr'd will take root; or crop him in Summer, and he will flowre in winter, but his winter seed is untimely. This and Palmes are exceeding good, and timely for Bees.

*Leeks* yeeld seed the second year, unremoved; and dye, unless you remove them, usually to eat with Salt and Bread, as Onyons always green, good pot-herb, evill for the eyes.

*Lavender-Spike* would be removed within seven yeeres, or eight at the most: slips twined, as Hysope and Sage, would take best at *Michael-tide*. This flowre is good for Bees, most comfortable for smelling, except Roses and kept dry, is as strong after a yeere, as when it is gathered. The water of this is comfortable.

White *Lavender* would be removed sooner.

*Lettice* yeelds seed the first year, and dyes: sow betime; and if you would have them Cabbage for sallets, remove them as you doe Cabbage. They are usuall in Sallets and in the pot.

*Lillies* white and red, remove once in three or foure years their roots yeeld many Sets, like the Garlicke. *Michael-tide* is the best. They grow high, after they get root. These roots are good to break a byle as are Mallows and Sorrel.

*Mallowes*, French or gagged, the first or second yeere, seed plentifully. Sow in *March*, or before. They are good for the housewives pot, or to break a bunch.

*Marigolds*, most commonly come of seed, you may remove the Plants when they be two inches long. The double Marigold, being as bigge as a little Rose, is good for shew. They are a good Pot-herb.

*Oculus Christi*, or Christs-eye, feedes and dyes the first or second year you may remove the young Plants, but seed is better. One of these seeds put into the eye, within three or four houres will gather a thick skinne, cleere the eye, and bolt it selfe forth without hurt to the eye. A good Pot-herbe,

*Onyons* are sown in *February*, they are gathered at *Michael-tide*, and all the Summer long, for Sallet; as also young parfly,

Sage, Chibals, Lettice, sweet Sicily, Fennell, &c. good alone, or with meate, as muttons, &c. for sawce, especially for the pot.

*Parfly* sow the first yeer, and use the next yeer: it seeds plentifully; an hearb of much use, as sweet sicily is. The seed and roots are good against the stone.

*Parfneps* require an whole plot, they be plentiful and common; sow them in *February*, the *kings* (that is in the middle) seed broadest and reddest. *Parfneps* are sustenance for a strong stomacke, not good for evill eies: VVhen they cover the earth, in a drought to tread the tops, makes the roots bigger.

*Penny-royall*, or pudding grasse, creeps along the ground, like ground Ivie. It lasts long, like daisies, because it puts and spreads daily new roots. Divide, and remove the roots, it hath a pleasant tast and smel. good for the pot, or hackmeat, or Haggas pudding.

*Pumpions*: Set Seeds with your finger, a finger deep, late in *March*, and so soone as they appear, every night if you doubt frost, cover them, and water them continually out of a water pot: they be very tender, their fruit is great and waterish.

*French Poppy* beareth a great flowre, and the seed will make you sleep.

*Raddish* is sauce for cloyed stomacks, as *Capers*, *Olives* and *Cucumbers*: cast the seeds all summer long here and there, and you shall have them alwaies young and fresh.

*Rosemary*, the grace of hearbs here in England, in other Countries common. To set slips immediately after *Lammas*, is the surest way. Seed sown may prove well, so they be sowne in hot weather, somewhat moyst, and good earth: for the hearb, though great, is nesh and tender (as I take it) brought from hot Countries to us in the cold North: set thin, it becomes a window well. The use is much in meats, more in Physick, most for Bees.

*Rue*, or hearb of grace, continually greene, the slips are set. It lasts long as *Rosemary*, *Sothernwood*, &c. too strong for mine Housewives pot, unlesse she will brew Ale therewith, against the plague: let them not seed if you will have him last.

*Saffron*, every third yeere his roots would be removed at *Midsummer*, for when all other hearbs grow most, it dyeth. It flowreth at *Michael-tide*, and groweth all winter: keep his flowers from birds in the morning, and gather the yellow (for they

they shapè much like Lillies) dry, and after dry them: they be precious, expelling diseases from the heart and stomack.

*Savery*: seeds and dyes the first year, good for my Housewives pot and pye.

*Sage*: set slips in *May*, and they grow aye; let it not seed, it will last the longer. The use is much and common. The Monkish proverb is *tritum*.

*Cur moritur homo, cui salvia crescit in horto?*

*Skerot*: the roots are set when they be parted, as *Pionie*, and Flower-deluce at *Michael-tide*, the root is but small and very sweet. I know none other speciall use but the Table.

*Sweet Sicely*: long lasting, pleasantly tasting, either the seed sowne, or the root parted, and removed, makes increase, it is of like use with parsley.

*Strawberries*: long lasting, set roots at *Michael-tide*, or the Spring, they be red, white, and greene, and ripe, when they be great and soft, some by *Midsummer with us*. The use is, they will coole my Housewife well, if they be put in wine or Creame with Sugar.

*Time*: both seeds, slips and roots are good, if it seed not, it will last three or four years or more, it smelleth comfortably. It hath much use namely, in all cold meats, it is good for Bees.

*Turnep*: is sown. In the second year they bear plenty of seed; they require the same time of sowing that Carrets doe; they are sick of the same disease that Cabbages be. The root increaseth much, it is most wholesome, if it be sowne in a good and well tempered earth; Sovereigne for eyes and bees.

I reckon these hearbs onely, because I teach my Country Housewife, not skilfull artists; and it should be an endlesse labour, and would make the matter tedious to reckon up *Land-theefe*, *Stock-July-flowers*, *Charwell*, *Valerian*, *Go-to bed at noone*, *Piony*, *Lycoras*, *Tansie*, *Garden mints*, *Germander*, *Centaury*, and a thousand such Physick hearbs. Let her first grow cunning in this, and then she may enlarge her Garden as her skill and ability increaseth. And to help her the more, I have set downe these observations:

CHAP.

## C H A P. IX.

*General Rules in Gardening.*

**I**N the South parts, Gardening may be more timely, and more faſely done, then with us in *Yorkſhire*, becauſe our ayr is not ſo favorable, nor our ground ſo good.

2 Secondly moſt feeds ſhakt, by turning the good earth, are renewed, their mother the earth keeping them in her bowels, till the Sun their Father can reach them with his heat.

3 In ſetting herbs, leave no top more then an handfull above the ground, nor more then a foote under the earth.

4 Twine the rootes of thoſe ſlips you ſet, if they will abide it. Gilly flowres are too tender.

5 Set moiſt, and ſowe dry.

6 Set ſlips without thanks at any time, except at *Midſummer*, and in froſts.

7 Seeding ſpoyles the moſt roots, as drawing the heart and ſap from the root.

8 Gather for the pot and medicines, herbs tender and green the ſap being in the top but in Winter the roote is beſt.

9 All the herbs in the Garden for flowres would once in ſeven years be renewed, or ſoundly watered with puddle water, except Roſemary.

10 In all your Gardens and Orchards, banks and Seats of Camomile, Penny-royall, Daifies and Violets, are ſecrly and comfortable.

11 Theſe require whole plots, Artichokes, Cabbages, Turneps Parſneps, Onyons, Carrets, and (if you will) Saffron and Skerrets.

12 Gather all your ſeeds, dead, ripe, and dry.

13 Lay not dung to the roots of your herbs, as uſually they do: for dung not melted is too hot even for trees.

14 Thin ſetting and ſowing (ſo the roots ſtand not paſt a foot diſtance) is profitable, for the herbs will like the better. Greater herbs would have more diſtance:

1 Set and ſow herbs in their time of growth (except at *Midſummer*)

*summer*, for then they are too too tender) but trees in their time of rest.

16 A good housewife may, and will gather store of herbs for the pot, about Lammas, and dry them, and pound them, and in winter they will do good service.

Thus have I limmed out a Garden to our Countrey House-wives, and given them rules for common herbs. If any of them (as sometimes they are) be knotty, I refer them to *Chap. 3.* The skill and pains of weeding the Garden with weeding knives of fingers, I refer to themselves & their maids, willing them to take the opportunity after a shower of rain: withall, I advise the Mistrresse either to be present her self, or to teach her maids to know herbs from weeds.

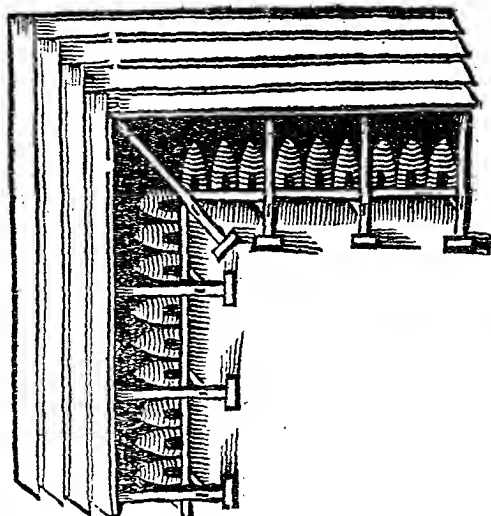
## CHAP. X.

### *The Husbandry of Bees.*

There remaineth one necessary thing to be prescribed, which in mine opinion makes as much for ornament as either flowers, or forme, or cleanness, and I am sure as commodious as any of, or all the rest: which is Bees, well ordered. And I will not account her any of my good House-wives, that wanteth either Bees, or skilfulnesse about them. And though I know some have written well and truly, and others more plentifully upon this theme: yet somewhat have I learned by experience (being a Bee-master my self) which hitherto I cannot find put into writing, for which I thinke our House-Wives will count themselves beholding unto mee.

The first thing that a Gardener about Bees must be careful *Bee houses.* for, is an house not stakes and stones abroad, *Sub dio*: for stakes rot and reele, Raine and Weather eate your hives and covers, and cold most of all is hurtfull for your Bees. Therefore you must have an house made along a sure dry wall in your Garden, neere, or in your Orchard: for Bees love flowers and wood with their hearts.

This the form; a Frame standing on posts with one floor (if you would have it hold more Hives, two floores) boarded, layd on bearers, and back posts, covered over with boards, flat-wise. Let the floores be without hoies or clifts, left in casting time



the Bees lye out. and loyter.

And though your hives stand within an handbreadth the one of another, yet will Bees know their home.

In this Frame may your Bees stand dry and warme, especially if you make dores like dores of windows to shroud them in winter, as in an house: provided you leave the hives mouth open. I my selfe have devised such an house, and I find that it strengthens my Bees much, and my hives will last six to one.

Hives.

*M. Markham* commends hives of wood: I discommend them not: but straw-hives are in use with us, and I think, with all the world, which I commend for nimbleness, closeness, warmness, and dryness. Bees love no externall motions of daubing, or such like. Sometimes occasion shall be offered to lift and turn hives, as shall appear hereafter. One light entire  
hive



hive of ſtraw, in that caſe, is better then one that is daubed, weighty and cumberſome. I wiſh every hive, for a keeping ſwarne, to hold three pecks at leaſt in meaſure. For too little hives procure Bees, in caſting time, either to ly out, and loyter, or elſe to caſt before they be ripe and ſtrong, and ſo make weake ſwarmes and untimely: Whereas if they have roome ſufficient, they ripen timely, and caſting ſeaſonably, are ſtrong, and fit for labour preſently. Neither would the hive be too great, for then they loyter, and waſt meat and time:

Your Bees delight in wood, for feeding, eſpecially for caſting therefore want not an Orchard. A *May's* ſwarne is worth a *Mares Foale*: if they want wood, they be in danger of flying away. Any time before *Midſummer* is good for caſting, and timely; before *July* is not evill. I much like *M. Markhams* opinion for having a ſwarm in combs of a dead or forſaken hive, ſo they be freſh and cleanly. To thinke that a ſwarne of your own, or others, will of it ſelſe come into any ſuch hive, is a meer conceit, *Experto crede Roberto*. His ſmearing with hony, is to no purpoſe, for the other bees will eat it up. If your ſwarne knit in the top of a tree, as they will, if the wind beat them not to fall down, let the ſtool or ladder preſcribed in the Orchard do you ſervice.

The leſs your Spelkes are, the leſſe is the waſt of your Hony, and the more eaſily will they draw, when you take your Bees. Four Spelkes a thwatt, and one top Spelk are ſufficient. The Bees will faſten their combes to the Hive. A little Hony is good, but if you want, Fennel will ſerve to rub your Hive withall. The Hive being dreſt and ready ſpelkt, rub'd and the hole made for their paſſage (I uſe no hole in the Hive but a piece of wood choal'd, to ſave the Hive and keep out Mice) ſhake in your Bees, or the moſt of them (for all commonly you cannot get) the remainder will follow. Many uſe ſmoke, nettles, &c. which I utterly diſlike: for Bees love not to be moleſted. Ringing in the time of caſting is a meer fancy, violent handling of them is ſimply evill, becauſe bees of all other creatures love cleanlineſs and peace. Therefore handle them leaſurely and quietly, and their Keeper whom they know may do with them what he will without hurt: Being hived at night, bring them to their feat. Set your hives all of one year together.

*Signes of breeding, if they be ſtrong.*

- 1 They will avoid dead young Bees and Droans.
- 2 They will ſweat in the morning, till it run from them; all-ways when they be ſtrong.

*Signes of caſting.*

- 1 They will fly Droans by reaſon of heat.
- 2 The young Swarme will once or twice in ſome faire ſeaſon come forth muſtering, as though they would caſt, to prove themſelves, and go in again.
- 3 The night before they caſt, if you lay your ear to the Hives mouth, you ſhall hear two or three, but eſpecially one above the reſt, cry, Up, up, up, or Tout, tout, tout, like a Trumpet ſounding the alarum to the battel.

Much deſcantiſg there is of, and about the Maſter-Bee, and their degrees, order, and Government: but the truth in this point is rather imagined, then demonſtrated. There are ſome conjectures of it, viz. wee ſee in the combs diverſe greater houſes then the reſt, and we commonly hear the night before they caſt, ſometimes one Bee, ſometimes two or more Bees, give a lowd and ſeverall ſound from the reſt, and ſometimes Bees of greater bodies then the common ſort: but what of all this? I leane not on conjectures, but love to ſet down that I know to be true, and leave theſe things to them that love to divine.

Keep none weak, for it is hazard oftentimes with loſs. Feeding will not help them; for being weak, they cannot come down to meat, or if they come down, they dye, becauſe Bees weak cannot abide cold. If none of theſe, yet will the other Bees being ſtrong, ſmell the honey, & come and ſpoil & kill them. Some help is in caſting Time, to put two weak ſwarms together, or as Tr. *Mark-hams* wel ſaith, Let them not caſt late, by raiſing them with wood or ſtone but with impes (ſay I.) An impe is, three or four wreathis wrought as the Hive, the ſame compaſs, to raiſe the Hive withall: but by experience in tryall I have found out a better way by Cluſtering, for late or weake ſwarms; hitherto not found out of any that I know. That is this; After caſting time, if I have any ſtock proud, and hindred from timely caſting, with former Winters poverty, or evill weather in caſting time, with two handles and crooks fitted for the purpoſe, I turne up that ſtock ſo peſt-ſtered

Catching.

Cluſtering.

ſtered with Bees, and ſet it on the crown, upon which ſo turned with the mouth upward I place another empty hive well dreſt, and ſpelkt, into which without any labour, the Swarme that would not depart, and caſt, will preſently aſcend, becauſe the old Bees have this quality (as all other breeding creatures have) to expell the young, when they have brought them up.

There will the Swarme build as kindly, as if they had of themſelves been caſt. But be ſure you lay betwixt the Hives ſome ſtraight and cleanly ſticke or ſticks, or rather a board with holes, to keep them aſunder: otherwiſe they will joyn their works together ſo faſt that they cannot be parted. If you ſo keep them aſunder at *Michael-tide*, if you like the weight of your ſwarme (for the goodneſs of ſwarms is tryed by the weight) ſo caught, you may ſet it by for a ſtocke to keep. Take heed in any caſe the combs be not broken, for then the other bees will ſmell the honey, and ſpoyl them. This have I tryed to be very profitable for the ſaving of bees.

The Inſtrumēt hath this form. The great ſtreight piece of wood,



the reſt are irō claiſps & nails, the claiſps are looſe in the ſtaple; two men with two of theſe faſtned to the Hive will eaſily turn it up

They gather not till *July*, for then they be diſcharged of their young, or elſe they are become now ſtrong to labour & now ſap in flowers is ſtrong and proud by reaſon of time, & force of Sun. And now alſo in the North (and not before) the hearbs of greateſt vigour put forth their flowers; as Beans, Fennell, Burrage, &c.

The moſt ſenſible weather for them, is heat and drought, becauſe the neſh Bee can neither abide cold or wet: and ſhowres (which they well fore ſee) do interrupt their labours, unleſs they fall in the night, and ſo they further them.

After caſting *Time*, you ſhall benefit your ſtocks much, if you help them to kill their Droans, which by all probability and judgement, are an idle kind of bees, and waſtfull. Some ſay they breed, and have ſeen young Droans in taking their honey, which I know is true. But I am of opinion that there are alſo Bees which

which have lost their stings, and so being as it were gelded, become idle and great: there is great use of them. *Deus & natura nihil fecit frustra.* They hate the bees, and cause them cast the sooner: they never come forth, but when they be over heated: they never come home laden. After casting time, and when the bees want meat, you shall see the labouring Bees fasten on them, two, three or four at once, as if they were thieves to be led to the Gallows, and killing them, they cast them out, and draw them far from home, as hatefull enemies. Our House-wife, if she be the Keeper of her own bees (as she had need to be) may with her bare hand in the heat of the day safely destroy them in the hives mouth. Some use towards night, in a hot day, to set before the mouth of the Hive a thin board with little holes in it, at which the lesser Bees may enter, but not the Droans; so that you may kill them at your pleasure.

Annoyances.

Snails spoil them by night like theeves: they come so quietly, and are so fast, that the Bees fear them not: look early and late, especially in a rainy or dewey evening or morning.

Mice are no lesse hurtfull, and the rather to Hives of straw: and therefore coverings of straw draw them: they will in either at the mouth, or shear themselves an hole: the remedy is good Cats, Rats-bane, and watching.

The cleanly Bee hateth the smoak as poyson; therefore let your bees stand nearer your garden, then your Brew-house or Kitchen.

They say Sparrows and Swallowes are enemies to Bees, but I see it not.

More Hives perish by Winters cold, then by all other hurts: for the bee is tender and nice, and onely lives in warm weather, and dyes in cold: And therefore let my House-wife be perswaded, that a warm dry house before described, is the chiefest help she can make her bees against this, and many more mischiefs. Many use against cold in winter, to stop up their hive close & some set them in houses perswading themselves, that thereby they relieve their Bees. First tossing, moving, is hurtfull. Secondly, in houses, going, knocking, & shaking is noysom. Thirdly, too much heat in an house is unnaturall for them: But lastly, and especially, Bees cannot abide to be stopt close up. For at every warme season of the Sunne they revive, and living eat, and eating must needs purge

purge abroad: in her houſe the cleanly Bee will not purge her ſelf. Judge you what it is for any living creature, not ſo diſburden nature. Being ſhut up in calme ſeaſons, lay your ear to the Hive and you ſhall hear them yearn and yell, as ſo many hundred priſoners. Therefore impound not your bees, ſo profitable and free a creature.

Let none ſtand above three years, elſe the combs will be black and knotty, your honey will be thin and uncleanly: and if any caſt after three years it is ſuch as have ſwarms of old bees kept altogether, which is great loſſe. Smoaking with Raggs, Rozen, or brimſtone, many uſe: ſome uſe drowning in a tub of clean water, and the water well brew'd, will be good botchet. Draw out your ſpelks immediately with a pair of pinchers, leſt the Wood grow ſoft and ſwell, and ſo will not be drawn: then muſt you cut your Hive.

Taking of Bees.

Let no fire come near your honey, for fire ſoftneth the Wax and droſs, and makes them run with the Honey. Fire ſoftneth weakeneth, and hindereth Honey for purging. Break your combs ſmall when the dead empty combs are parted from the loaden Combes into a ſieve, born over a great bowl, or veſſel with two ſtaves, and ſo let it run two or three dayes. The ſooner you run it up, the better will it purge. Run your ſwarme Honey by it ſelf, and that ſhall be your beſt. The elder your Hives are, the worſe is your honey.

Straying of honey.

Uſuall Veſſels are of Clay, but after wood be ſatiated with Honey (for it will leake at firſt: for honey is marvellouſly ſearching though thick, & therefore vertuous) I uſe it rather, becauſe it will not break ſo ſoon with falls, froſts, or otherwiſe, and greater veſſels of clay will hardly laſt.

Veſſels.

When you uſe your honey, with a ſpoon take off the ſkin which it hath put up.

And it is worth the regard, that bees thus uſed, if you have but forty ſtocks, ſhall yeeld you more commodity clearly than forty Acres of Ground.

And thus much may ſuffice, to make good Houſewives love and have good gardens and Bees.

*Deo laus.*  
FINIS.

The



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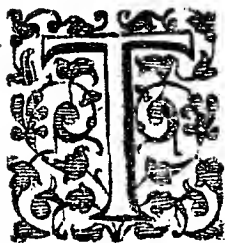
A

**MOST PROFITABLE**  
 New Treatise, from approved ex-  
 perience of the Art of propa-  
 gating Plants

By SIMON HARVARD.

**CHAP. I.**

*The Art of propagating Plants.*



Here are foure sorts of planting or propa-  
 gating, as in laying of shoots or little  
 branches while they are yet tender, in  
 some pit made at their foot, as shall be  
 said hereafter, or upon a little ladder or  
 basket of earth, tied to the bottome of the  
 brach, or in boaring a Willow thorow,  
 and putting the branch of the tree into  
 the hole, as shall be fully declared in the

Chapter of Grafting.

There are likewise seasons to propagate in; but the best is in the

M

1.

the spring, and *March*, when the trees are in the Flowre, and do begin to grow lusty. The young planted *Stems* or little grafts must be propagated in the beginning of winter, a foot deep in the earth, and good manure mingled amongst the earth, which you shall cast forth of the pit wherein you mean to propagate it, to tumble it in upon it againe. In like manner, your superfluous *Stems*; or little plants must be cut close by the earth, when as they grow about some small *Impe*. which we mean to propagate for they will do nothing but rot: For to propagate, you must dig the earth round about the tree, that so your roots may be laid in a manner halfe bare. Afterwards draw into length the pit on that side where you mean to propagate, and according as you perceive that the roots will be best able to yeeld, and be governed in the same pit, to use them, and that with all gentleness, and stop close your *Stems*, in such sort, as that the wreath which is in the place where it is grafted, may be a little lower than the *Stems* of the new wood growing out of the earth, even so high as it possible may be. If the trees that you would propagate be somewhat thick, and thereby the harder to ply, and somewhat stiff to lay in the pit: then you may wet the stock almost to the midst, betwixt the root and the wreathing place, so with gentle handling of it, bow down into the pit the wood which the grafts have put forth, and that in as round a compasse as you can, keeping you from breaking of it: afterward lay over the cut with gummed wax, or with gravele and sand.

## CHAP. 2.

*Grafting in the Barke.*

**G**Rafting in the barke, is used from mid-*August*, to the beginning of Winter, and also when the Western-wind beginneth to blow: being from the 7 of *February*, unto the 11 of *June*. But there must care be had, not to graffe in the barke in any rainy season, because it would wash away the matter of joyning the one and the other together, and so hinder it.

Grafting in the bud is used in the Summer time, from the end of *May*, untill *August*, as being the time, when the trees are strong and lusty, and full of sap and leaves. To wit, in a hot

Country,



country from the north of *June*, unto the middle of *July*, but in cold Countries to the middle of *August*, after some small showers of Raine.

If the Summer be so exceedingly dry, as that some trees doe withold their sap, you must waite the time till it doe returne.

Graft from the full of the moon, untill the end of the old.

You may graft in a cleft, without having regard to Raine for the sap will keep it off.

You may graft from mid-*August*, to the beginning of *November*: Cowes dung with straw doth mightily preserve the graft.

It is better to graft in the evening than the morning.

The furniture and tooles of a Grafter, are a basket to lay his grafts in, Clay, Gravell, Sand, or strong Earth to draw over the plants cloven Musse, Woollen clothes, barks of *Willow* to joyne to the late things and earth before spoken; and to keep them fast: Oziers to tye againe upon the barke, to keep them firme and fast, gummed *VVax* to dresse and cover the ends, and tops of the grafts newly cut, that so the raine and cold may not hurt them, neither yet the sap rising from below, be constrained to return againe unto the shootes. A little Saw or hand-Saw, to saw off the stock of the plants, a little Knife or Penknife to graffe, and to cut and sharpen the grafts, that so the bark may not pill nor be broken; which often cometh to passe when the graft is full of sap. You shall cut the graffe so long; as that it may fill the cliffe of the plant, and therewithall it must be left thicker on the bark-side, that so it may fill up both the cliffe and other incisions, as any neede is to be made, which must be all wayes well ground, well burnish'd without all rust. Two wedges, the one broad for thick trees, the other narrow for lesse and tender trees, both of them of box or some other hard and smooth wood, or steel, or of very hard iron, that so they may need lesse labour in making them sharpe.

A little hand bill to set the plants at more liberty, by cutting off superfluous boughs, helved of Ivory, box, or brassill.

## CHAP. 3.

*Grafting in the Cleft.*

**T**He manner of grafting in a cleft, to wit, the stock being clov'd, is proper not onely to trees, which are as great as a mans legs or arms, but also to greater: It is true that being trees cannot easily be cloven, in their stock: that therefore it is expedient to make incision in some one of their branches, and not in the main body, as wee see to be practised in great Apple-trees, and great Peare-trees, and as we have already delared heretofore.

To graft in the cleft, you must make choyce of a graft that is full of sap and juyce, but it must not be, but till from after *January* untill *March*: And you must not thus graft in any tree that is already budded, because a great part of the juyce and sap would be already mounted up on high, and risen to the top, and there dispersed and scattered hither and thither, into every sprig and twig, and use nothing welcome to the graft.

You must likewise be resolved not to gather your graft the day you graft in, but ten or twelve dayes before: for otherwise if you graft it new gathered it will not be able easily to incorporate it self with the body, and stock, where it shall be grafted; because that some part of it will dry, and by this means will be a hindrance in the stock to the rising up of the sap, which it should communicate unto the graft, for the making of it to put forth, and whereas this dried part will fall a crumbling, and breaking through his rottenness, it will cause to remaine a concavity, or hollow place in the stock, which will be an occasion of a like inconvenience to befall the graft. Moreover, the graft being new and tender, might easily be hurt of the bands, which are of necessity to be tyed about the Stock, to keep the graft firme and fast. And you must further see, that your Plant was not of late removed, but that it have already fully taken root.

7. When you are minded to graft many grafts into one cleft, you must see that they be cut in the end all alike.

See that the grafts be of one length, or not much differing, and it is enough, that they have three or foure cylets without the Wrench when the Plant is once sawed, and lopped of all his bran-

branches, if it have many: then you must leave but two at the most before you come to the cleaving of it ; then put to your little Saw, or your knife, or other edged toole that is very sharp, cleave it quite thorow the middest, in gentle and soft sort : First, tying the stock very sure, that so it may not cleave further then is need . and then put to your wedges into the cleft untill such time as you have set in your grafts, and in cleaving of it, hold the knife with the one hand, and the tree with the other, to help to keep it from cleaving too far. Afterwards put in your wedge of Box or brazill, or bone, at the small end ; so that you may the better take it out again, when you have set in your grafts.

If the stock be cloven, or the bark loosed too much from the wood : then cleave it down lower, and set your grafts in, and look that their Incision be fit, and very justly answerable to the cleft, and that the two saps, first, of the plant and graft, be right and even set one against the other, and so handsomely fitted, as that there may not be the least appearance of any cut or cleft For if they doe not thus jump one with another, they will never take one with another, because they cannot work their seeming matter, and as it were cartilaginous glue in convenient sort or manner to the gluing of their joynts together. You must likewise beware, not to make your cleft overthwart the pich, but somewhat aside.

The bark of your plant being thicker then that of your graft you must set the graft so much the more outwardly in the cleft, that so the two saps may in any case be joynd, and set right the one with the other, but the rind of the plant must be somewhat more out then that of the grafts or cloven side.

To the end that you may not faile of this work of imping, you must principally take heed, not to over-cleave the stocks of your trees. But before you widen the cleft with your wedges, bind and go about the stock with two or three turner, and that with an Ozier, close drawne together, underneath the same place, where you would have your cleft to end, that so your stock cleave not too far, which is a very usuall cause of the miscarrying of grafts, in as much as hereby the cleft standeth so wide and open, as that it cannot be shut, and so not grow together againe ; but in the mean time spendeth it self, and breatheth out all his life in  
that

that place, which is the cause that the stock & the Graft are both spilt. And this falleth out most often in Plum-trees, and branches of trees. You must be carefull to joyn the rinds of your grafts, and plants, that nothing may continue open, to the end that the wind, moisture of the Clay or Raine running upon the grafted place, do not get in: when the plant cleaveth very streight, there is not any danger nor hardnesse in sloping downe the Graft.

10.

If you leave it somewhat uneven or rough in some places, or that the taps both of the one and of the other may the better grow, and be g'ud together, when your grafts are once well joynd to your plants, draw out your wedges very softly, least you displace them again: you may leave therewith in the cleft some small end of a wedge of green wood, cutting it very close with the head of the Stock. Some cast glue into the cleft, some sugar, and some gummed Wax.

11.

In the Stock of the Plant, where upon you intend to graft, be not so thick as your graft you shall graft it after the fashion of a Goats foot. make a cleft in the stock of the plant, not direct, but byas, and that smooth and even, not rough: then apply and make fast thereto the graft with all his bark on, and answering to the bark of the Plant. This being done, cover the place with the fat earth and moss of the Woods tyed together with a strong band: stick a pole of Wood by it to keep it stedfast.

#### CHAP. 4.

##### *Grafting like a Scutcheon.*

**I**N grafting after the manner of a Scutcheon, you shall not vary nor differ much from that of the Flute or pipe, ~~but~~ only that the Scutcheon like graft having one eylet, the other hath yet the wood of the tree whereupon the Scutcheon-like graft is grafted hath not any knob, or bud, as the wood whereupon the graft is grafted after the manner of a Pipe.

12.

In Summer when the trees are well replenished with sap, and that their new Siens begin to grow somewhat hard, you shall take a shoot at the end of the chief branches of some noble and reclaimed trees: whereof you would faine have some fruit, and not many of his old store or wood, and from thence raise a good eylet. the taile and all thereof to make your grafts. But when you choose, take the thickest, and grossest, divide the tail in  
the

the midst before you do any thing else, casting away the leaf (if it be not a pear-plum-tree : for that would have two or three leaves) without removing any more of the said taile : afterward with the point of a sharp knife, cut off the Bark of the said shoot, the pattern of a shield, of the length of a nail

In which there is onely one cylet higher then the midst together with the residue of the taile which you left behind: and for the lifting up of the said graft in Scutcheon, after that you have cut the bark of the shoot round about, without cutting of the wood within, you must take it gently with your thumb, and in putting it away you must press upon the wood from which you pull it, that so you may bring the bud and all away together with the Scutcheon : for if you leave it behind with the wood, then were the Scutcheon nothing worth You shall find out if the Scutcheon be nothing worth, if looking within when it is pulled away from the wood of the same suit, you find it to have a hole within, but more manifestly, if the bud do stay behind in the wood, which ought to have been in the Scutcheon.

Thus your Scutcheon being well raised and taken off, hold it a little by the taile betwixt your lips, without wetting of it even untill you have cut the bark of the tree where you would graft it, and look that it be cut without any wounding of the wood within, after the manner of a crutch, but somewhat longer then the Scutcheon that you have to set in it, and in no place cutting the wood within; after you have made incision, you must open it and make it gape wide on both sides, but in all manner of gentle handling; & that with a little Sizers of bone, & separating the wood and the bark a little within, even so much as your Scutcheon is in length and breadth : you must take heed that in doing hereof, you do not hurt the bark

This done take your Scutcheon by the end, and your taile which you have left remaining, and put into your incision made in your tree, lifting up softly your two sides of the incision with your said Sizers of bone, and cause the said Scutcheon to joyn, and lye as close as may be, with the wood of the tree, being cut as aforesaid, in waying a little upon the end of your rinde : so cut and let the upper part of your Scutcheon lye close unto the upper end of your incision, or bark of your said tree: afterward  
bind

13.

14.

15.

binde your Scutcheon about with a band of Hempt, as thicke as a pen of a quill, more or lesse, according as your tree is small or great, taking the same Hempt in the middle, to the end that either part of it may performe a like service; and wreathing and binding of the said Scutcheon into the incision of a tree; and it must not be tyed too straight, for that will keep it from taking the joyning of the one sap to the other being hindered thereby, and neither the Scutcheon nor yet the Hempt must be moist or wet: and the more justly to bind them together, begin at the back side of the tree, right over against the middle of the incision, and from thence come forward to joyne them before, above the eylet and taile of the Scutcheon crossing your band of Hempt, so oft as the two ends meet; and from thence returning back againe, come about and tie it likewise underneath the eylets and thus cast about your band still backward and forward until the whole cleft of the incision be covered above and below with the said Hempt, the eylet onely excepted, and his taile, which must not be covered at all; his taile will fall away one part after another, and that shortly after the ingrating, if so be the Scutcheon will take. Leave your trees and Scutcheons thus bound for the space of one month; and the thicker, a great deale longer time. Afterward look them over, and if you perceive them to grow together untye them, or at leastwise cut the Hempt behind them, and leave them uncovered. Cut also your branch two or three fingers above that, so the impt may prosper the better: and thus let them remain till after Winter, about the month of *March*, and *April*.

17.

18.

If you perceive that the budde of your Scutcheon doe swell and come forward, then cut off the tree three fingers or thereabouts, above the Scutcheon: for if it be cut off too near the Scutcheon, at such time as it putteth forth his first blossome, it would be a means greatly to hinder the flowing of it, and cause also that it should not thrive and prosper so well: after that one yeer is past, and that the shoote beginneth to be strong, beginning to put forth the second bud and blossome, you must go forward to cut off it by awise the three fingers in the top of the tree which you left there, when you cut it in the year going before as hath been said.

When your shoote shall have put forth a great deal of length, you may stick down there, even hard joyned thereunto, little stakes, tying them together very gently and easily; and these shall stay your shoots and prop them up, letting the wind from doing any harm unto them. Thus you may graft white Roses in red, and red in white. Thus you may graft two or three Scutcheons; provided that they be all of one side: for they will not be set equally together in height, because then they would be all starvelings, neither would they be directly one over another; for the lower would stay the rising up of the sap of the tree, and so those above should consume in penurie, and undergo the aforesaid inconvenience. You must note, that the Scutcheon which is gathered from the Sien of a tree whose fruit is sowre, must be cut in square-forme, and not in the plain fashion of a Scutcheon. It is ordinary to graffe the sweet Quince tree, bastard Peach-tree, Apricock-tree, Jujube tree, sowre Cherry-tree, sweet Cherry-tree, and Chestnut-tree, after this fashion, howbeit they may be grafted in the cleft more easily, and more profitably; although divers be of a contrary opinion, as thus: Take the grafts of sweet Quince-tree, and Bastard peach-tree, of the fairest wood, and best fed that you can find, growing upon the wood of two years old, because the wood is not so firme and solid as the others: and you shall graft them upon small Plum-tree stocks, being of the thicknesse of ones thumbe; these you shall cut after the manner of a Goats foot: you shall not goe about to make the cleft of any more sides then one, being about a foot high from the ground; you must open it with your small wedge: and being thus grafted, it will seeme to you that it is open but of one side; afterward you shall wrap it up with a little Mofse, putting thereto some gummed Wax, or Claie, and bind it up with Oziers to keep it surer, because the stock is not strong enough it self to hold it, and you shall furnish it every manner of way as others are dealt withall; this is most profitable.

*The time of Grafting.*

All Months are good to graft in, (the Month of *October* and *November* onely excepted) But commonly, graft at that time of

the winter, when the sap beginneth to arise.

In a cold Countrie graft later, in a warme Country earlier.

The best time generally is from the first of *February*, untill the first of *May*.

The grafts must alwaies be gathered, in the old of the *Moone*, For grafts choose shoots of a year old, or at the furthest two years old.

If you must carry grafts far, prick them into a Turnep newly gathered or lay earth about the ends.

If you Set stones of Plummes, Almonds, Nuts, or Peaches: First let them lye a little in the Sun, and then steep them in Milk or Water: three or four dayes, before you put them into the earth:

Drie the Kernels of Pippins, and sow them in the end of *November*.

The stone of a Plum-tree must be Set a foot deep, in *November* or *February*.

The Date-stone must be Set the great end downwards, two cubits deep in the earth, in a place enriched with dung.

The Peach-stone would be Set presently after the Fruit is eaten, some quantity of the flesh of the Peach remaining about the stone.

If you would have it to be excellent, graft it afterward upon an Almond tree.

The little Siens of Cherry-trees, grown thick with haire, rots and those also which doe grow up from the roots of the great Cherry-trees, being removed, do grow better and sooner then they which come of stones: but they must be removed and planted while they are but two or three years old, the branches must be lopped.



A very profitable Invention, for the speedy  
planting of an Orchard of  
Fruit-Trees.

**A**Bout the end (or rather the middle) of *June* the sap being then in the boughes or tops of the Trees, let some one of discretion goe up into the boughes of the Tree intended, and with a keen-knife cut the bark of some smooth bough so chosen round about the same, quite through the same bark, to the very bare wood, in two places (toward the but of the bough) a full hand breadth the one from the other, & take off the bark clean clearly from the said bough, and cast it away, and wipe the sap off that bared place; Then take some of the stiffest clay you can have, and wrap it hard, round about the said bared place (that it may stop the sap when it descendeth;) bind on this clay with fallow slings or the like, very hard; let this clay be two inches thick at least. Then prepare a certaine quantity of good ranke mould, tempered with short muck and misken water, and make mortar thereof, and wrap a good quantity of it as big as a foot ball, upon the firm barke remaining close above the said clay, that it may touch the same; put mosse upon it, & as before, bind it well, and so let it continue growing upon the same Tree till *February*. Then with a fine saw carefully take off the said bough close below the clay, not perishing the upper mortar; and set that bough, with the clay and mortar on it, in some good ground, and there let it remain to grow; for the sap it cannot passe downward for the clay but stayeth in the upper mortar, and breeds roots, and possibly (God willing) may bear fruit the next Summer following. Thus you may order many such boughes as aforesaid, and quickly plant an Orchard of bearing Trees. If the bough be as big as the small of ones leg, it is so much the better: *probarum est.*



## The Contents of the Art of Propagating Plants.

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|--|-------------------------------|--|



THE  
HUSBAND MANS  
FRUITFUL ORCHARD.

For the true ordering of all sorts of  
Fruits in their due seasons : and how double  
increase cometh by care in gathering year after  
year: as also the best way of carriage by land  
or by water: with their preservation  
for longest continuance.



**C** All stone Fruit, Cherries are the first to be  
gathered : of which though we reckon foure  
sorts; *English, Flenimish, Gascoigne,* and *Black,*  
yet are they reduced to two, the early, and the  
ordinary ; the early are those whose grafts  
came first from *France* and *Flanders,* and are  
now ripe with us in *May*: the ordinary is our  
own naturall Cherry, and is not ripe before *June* : they must  
be carefully kept from Birds, either with nets, noise, or other  
industry.

They

Gathering of  
Cherries.

They are not all ripe at once, nor may be gathered at once, therefore with a light Ladder made to stand of it self without hurting the boughes, mount to the tree, and with a gathering hook, gather those which be full ripe, and put them into your Cherry-pot, or Kybzey hanging by your side, or upon any bough you please, & be sure to break no stalk, but that the cherry hangs byland pull them gently, lay them down tenderly, and handle them as little as you can.

To carry  
Cherries.

For the conveyance or portage of Cherries, they are best to be carried in broad Baskets like sives, with smooth yeelding bottomes, only two broad laths going along the bottome: and if you do transport them by ship, or boat, let not the sives be filled to the top, lest setting one upon another, you bruise and hurt the Cherries: if you carry by horseback, then panniers well lined with Fearn, and packt full and close is the best and safest way.

Other stone-  
fruit.

Now for the gathering of all other stonefruit, as Nectarines, Apricocks, Peaches, Peare-plummes, Damsons, Bullas, and such like. although in their severall kinds, they seem not to be ripe at once on one tree: yet when any is ready to drop from the tree, though the other seem hard, yet they may also be gathered, for they have received the full substance the tree can give them; and therefore the day being faire, and the dew drawn away; set up your Ladder, and as you gathered your Cherries so gather them: onely in the bottomes of your large sives, where you part them, you shall lay Nettles, and likewise in the top, for that will ripen those that are most unready.

Gathering of  
Peares.

In gathering of Peares are three things observed: to gather for expence, for transportation, or to sell to the Apothecary. If for expence, and your own use, then gather them as soon as they change, and are as it were half ripe, and no more but those which are changed, letting the rest hang till they change also: for thus they will ripen kindly, & not rot so soon, as if they were full ripe at the gathering. But if your Peares be to be transporter far either by Land or Water, then pull one from the Tree, and cut it in the middest, and if you find it hollow about the coare, and the kernell a large space to lye in, although no Peare  
be

ready to drop from the Tree, yet then they may be gathered, and then laying them on a heap one upon another, as of necessity they must be for transportation, they will ripen of themselves and eat kindly: but gathered before, they will wither, shrink and eat rough, losing not onely their tast, but beauty.

Now for the manner of gathering, albeit some clime into the trees by the boughes, and some by Ladder, yet both is amisse; the best way is with the Ladder before spoken of, which standeth of it selfe, with a basket & a line, which being full, you must gently let down, and keeping the string still in your hand, being emptied, draw it up againe, and so finish your labour, without troubling your self, or hurting the Tree.

Gathering of Apples.

Now touching the gathering of Apples, it is to be done according to the ripening of the fruit; your Summer Apples first, and the Winter after.

For Summer fruit, when it is ripe, some will drop from the Tree, and Birds will be picking at them: But if you cut out one of the greenest, and find it as was shew'd you before of the pears: then you may gather them, and in the house they will come to their ripenesse and perfection. For your Winter fruit, you shall know the ripeness by the observation before shewed; but it must be gathered in a faire, Sunnie, and dry day, in the waine of the Moone, and no Wind in the East, also after the dew is gone away; for the least wet or moysture will make them subject to rot and mildew; also you must have an apron to gather in, and to empty into the great basket, and a hook to draw the boughes unto you, which you cannot reach with your hands at ease: the apron is to be an Ell every way, loopt up to your girdle, so as it may serve for either hand without any trouble: and when it is full, unloose one of your loopes, and empty it gently into the great basket, for in throwing them downe roughly, their owne stalkes may prick them, and those which are prick, will ever rot. Againe, you must gather your fruit cleane without leaves or brunts, because the one hurts the tree, for every brunt would be a stalk for fruit to grow upon: the other, hurts the fruit by bruising, and pricking it, as it is laid together, and there is nothing sooner rotteth fruit,

fruit, then the green and and withered leaves lying among them ; neither must you gather them without any stalke at all : for such fruit will begin to rot where the stalk stood.

To use the fallings.

For such fruit as falleth from the trees, and are not gathered, they must not be layd with the gathered fruit : and of fallings there are two sorts ; one that falls through ripeness, and they are best, and may be kept to bake or roast : the other windfalls, falling before they are ripe, & they must be spent as they are gathered or else they will wither and come to nothing ; and therefore it is not good by any means to beat downe fruit with Poles, or to carry them in carts looke and jogging, or in sacks where they may be bruised.

Carriage of fruit.

When your fruit is gathered, you shall lay them in deep Baskets of Wicker, which shall contain four or six bushels, and so between two men, carry them to your Apple Loft ; and in shooting or laying them downe, be very carefull that it be done with all gentleness, and leisure, laying every sort of fruit severally by it self: but if there be want of room, having so many sorts that you cannot lay them severally, then some such fruit as is nearest in tast and colour, and of Winter fruit, such as will tast alike, may, if need require, be laid together, and in time you may separate them, as shall be shewed hereafter. But if your fruit be gathered far from your Apple-Loft, then must the bottomes of your Baskets be lined with green Ferne, and draw the stubborn ends of the same through the Basket, that none but the soft leaf may touch the fruit, and likewise cover the tops of the Baskets with Ferne also, and draw small cord over it, that the Ferne may not fall away, nor the fruit scatter out, or jogge up and downe : and thus you may carry fruit by Land or by Water, by Boat, or Cart, as farre as you please : and the Ferne doth not onely keep them from bruising, but also ripens them, especially Peares. When your fruit is brought to your Apple Loft, or store-house, if you find them not ripened enough, then lay them in thicker heaps upon Ferne, and cover them with Ferne also : and when they are neer ripe, then uncover them and make the heaps thinner, so as the ayr may passe through them : and if you will not hasten their ripening of them, then lay them on the boards with-  
out