1653

LAWSON — NEW ORCHARD & GARDEN

35472 / B / 2

part 6 of MARKHAM, G.

A way to get wealth. 8ed.

1653-54.

Complete. 1st copy is imperfect

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-houswives Garden for Herbs of common use:
their virtues, Seasones, 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.

*All being 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,
carying home, and preservation.

Skill and pains, being 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.

A NEW ORCHARD GARDEN

The first part of the book is devoted to a description of the various kinds of fruit trees which may be raised in an orchard. The second part contains a list of the most useful and profitable kinds of fruit trees, with a description of their culture and management. The third part contains a list of the most useful and profitable kinds of fruit trees, with a description of their culture and management.

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Original from the
Wellcome Library

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

Worthy Sir,

When in many yeers by long experience
I had furnished this my Northern
Orchard and Country-Garden with
needfull Plants and usefull Hearbs,
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) for the publike profit of others.
Wherefore, though I could plead Custom, the
ordinary excuse of all writers, to chuse a Pa-
tron and protector of their Works, 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 endeavours. Last of all, the rare worke of your own in this kind : All which to publish under your protection, I have adventured (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

THE PREFACE,

To all well minded.

ARt 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 knowledg 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 skilfull 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 meer 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 poynts, 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 and judgment in this kind, and leave them to their times, manner, and several Countries.

I am not determined (neither can I worthily) to set forth the praises of this Art: how some, and not a few, even of the best, have accounted it a cheif part of earthly happinesse, to have fair and pleasant Orchards, as in Hesperia and Theffaly; how all with one consent agree, that it is a cheif part of Husbandry, (as Tully de senectute) and Husbandry maintains the world: how antient, how profitable, how pleasant it is; how many secrets of nature it doth containe, how loved, how much practised in the best places, and of the best: This hath been done by many: I onely aim at the common good. I delight not in curious conceits, as planting and grassing with the root upwards, inoculating Roses on Thorns, and such-like; although I have heard of divers, 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 and Models by the best Artizan cut in great variety, that nothing might be any way wanting to satisfie the curious desire of those that would make use of this Booke.

And I shew a plain and sure way of planting, which I have found good by 48 yeers (and more) experience in the North part of England. I prejudicate and envy none; wishing yet all to abstain 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 indevoureth to have a Religious.
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 religi-

ous: 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
conference, mutuall instruction to edifie, almes, and other works
of charity, and all out of a good conscience.

Honesty in a Gardener, will grace your Garden, and all your
house; and help to stay unbridled Servingmen, giving offence
to none, not calling your name into question by dishonest acts,
nor infecting your family by evill counsell or example. For there
is no plague so infectious as Popery and knavery, he will not
purloine your profit, nor hinder your pleasures. Honest.

Concerning his skill, he must not be a Sciolist, to make 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 shall
(God willing) be proved in the treatise following. And what an
hinderance shall it be, not onely to the owner, but to the com-
mon

mon good, that the unspeakable benefit of many hundred yeares 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 alwaies growing, the great mother of all living creatures, the Earth, is full of seed in her bowels, and any stirring gives them heat of Sunne, and being laid near day, they grow: Moales work daily, though not alwaies alike, Winter hearbs at all times will grow (except in extreame frost) In winter your trees and hearbs would be lightned of snow, and your allies cleansed: drifts of Snow will set Deere, Hares, and Conyes, and other noysome beasts over your walles and hedges into your Orchard. When Summer cloaths your borders with greene and peckled colours, your Gardner must dresse his hedges, and antick 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 fruite, 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 undertaken these labours, and gathered these rules, but chiefly respecting my countries good.

CHAP.

CHAP. 2.

Of the soyle.

FRUIT trees most common, and meetest for our Northern countries: (as Apples, peares, Cherries, Filberds, red and white plumes, Damsons, Bullis,) for we meddle not with Apricocks nor Peaches nor scarcely with Quinces, which will not like in our cold parts, unlesse they be helped with some reflex of the Sun, or other like meanes, nor with bushes bearing berries, as barberries, Goose-berries or Grosers, Raspe-berries, and such like, though the Barbery be wholesom, 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, and the fallow, and ellow 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 frosts and drought by fallowing and laying on heaps, and if it be wild earth, with burning.

Kinds of trees.

Soyle.

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 deepe, 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.

Barren earth.

Your ground must be plaine, that it may receive, and keep moysture, not onely the raine falling thereon, but also water cast upon it, or descending from higher ground by sluices, Conduits

Plaine.

Moyst.

&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, and 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 hinderance to your walkes (for dry walkes doe well become an Orchard, and an Orchard them:) raise your walks with earth first, and then with stones as big as walnuts, and lastly, with gravell. 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 oftentimes hurt, and especially being digged by some unskilfull servant: for the Gardiner cannot doe all himselfe: and moreover, the roots of Apples and Pears, being laid neere day, with the heat of the Sun, will put forth suckers, which are a great hinderance, and sometimes with evill guiding, the destruction of trees, unlesse the delving be very shallow, and the ground laid very levell again. 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 roots of your trees; for it will breed mosse: and the boal of your tree neer 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 sowe 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 plainnesse which we require, had need be naturall, because to force an uneven ground, will destroy the fatnesse: for every
soyle

soyle hath his crust next day, wherein trees and hearbs 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 hearb (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 grasse or docks (which will grow, though they lie 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 plains, 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, least 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
plaine.

Crust of the
earth.

CHAP. III.

Of the Site.

There is no difference, that I find, betwixt the necessity of a good soyl, and a good Site of an Orchard. For a good soil (as is before described) cannot want a good Site; and if it do, 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 River.

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, seldome or never rich. The rain will scind and wash, and the wind will 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 plain grounds, and low, barren; and as seldome any hights naturally fertile. It is

Pfal. 1. 3.
Ezek. 17. 8.
Eccles. 39. 17.

Mr. Markham.

Windes.
Chap. 13.

Sun.

unspeakable, what fatnesse is brought to low grounds by inundations of waters; neither did I ever know any barren ground in a low plaine by a River side, The goodnesse of the soil in *Howle* or *Hollowdernesse* in *York-shire*, is well knowne to all that know the River *Humber*, & the huge bulks of their Cattle there. By estimation of those that have seen the low grounds in *Hollandy* and *Zealand*, they fare surpasse most countries in *Europe* for fruitfulnessse, and onely 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. 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 *Hol-der-nes* and such Countries, are destitute of woods: I answer, that men and cattle (that have put trees thence, from out of plains to void corners) are better then trees. Neither are those places without trees. Our old fathers can tell us how woods are decayed, and people in the roome of trees multiplied. I have stood somewhat long in this poynt, because some do condemn a moist soil for fruit trees.

A low ground is good to avoid the danger of windes, both for shaking down your unripe fruit. Trees (the most that I know) being loaden with wood, for want of proyning, and growing high, by the unskilfulnessse 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 ayr 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 and 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.

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 neerer approaching the Zodiack, the Suns habitation⁹, they have better, and sooner ripe fruit, then we that dwell in these frozen parts.

This provoketh most of our great Arborists to plant Apricocks, Cherries, & Peaches, by a wall, and with tacks, & other meanes 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 haveing 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 a man, the leaning or lying on some member, whereby the course of blood is stopt, 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 would 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 mark 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 bear fruit plentifully two years together, and make themselves ready to Blossom against the seasonableness of the next spring.

And if any frost be so extreame, 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 : Wherefore, 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 fatnesse, (for trees are the greatest suckers and pillers of the earth) and (as much as may be) free from great winds.

CHAP. III.

Of the Quantity.

IT 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 follow, 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 do thrive, then a large Orchard of trees bearing fruit? or what pifference is there in the juice of the Grape, and our sider and perry, but the goodnesse of the soil and clime 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
Corne-field.

Compared
with a Vine-
ard.

the benefit rising from an Orchard, that makes for the largeness of the orchards bounds. And me thinks they doe preposterously, Compared that bestow more cost and labour, and more ground in and up- with a Garden. on 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 little 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 What quantity can no man prescribe, but that must be left to every mans severall of ground. judgement, to be measured according to his ability & will, for other necessities 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; for an orchard one 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 Land- lords by their Tenants may make flourish- ing Orchards in England. by granting longer time and better assurance to their tenants, who have taken up this Proverb, *Bitche and sit, Build and flit*: for who will build or plant for another mans profit? Or the Parliament might injoyne every occupier of grounds to plant and maintain for so many acres of fruitfull ground, so many severall trees, or kinds of trees for fruit. Thus much for quantity.

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

8. Trees 20. yards under.

Garden Knots.

Kitchen Garden.

Bridge.

Conduit.

Staires.

Walkes set with at wood thick.

Walkes set with at wood round out your Orchard

The out fence.

The out fence with stone fruit.

Mount. To force h for a mount, such like, set it and with quick, lay boughes of s strangely in- gled, the tops d, with the h in the middle.

Still-house.

Good stand'ng Bees, if you have house.

If the river run your doore, and der your mount, ill 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 wherewith 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. If within one large square the Gardiner shall make one round Labyrinth or Maze with some kind of Berries, it will grace your form, so their be sufficient roomth 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 sort may use better formes, and more costly worke. What is needfull more to be said, I referre that all (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 rootes, the bark pild, the boughs and twigs crompt, 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 plant 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 delightful, 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.

C

make

Let the fence
be your owne.

Kinds of fences:
earthen
walls.

make all your fence your selfe : for neighbours fence is none at all, or very carlesse. 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 nigh, for perhaps they will prove thieves.

All fences commonly are made of earth, Stone, Bricke, 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, unlessse they be well copt with Glooe and morter, whereon at Michaell-tide it will be good to sow wall-flowers, commonly called Bee flowers, or winter Gilly-flowers, because they will grow (though among stones) and abide the strongest frost and drought continually greene and flowring even in winter, and have a pleasant smell, and are timely, (that is, they will flower the first and last of flowers) and are good for Bees. And your earthen wall is good for bees dry and warme: 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 over-turne such walls, though they were of stone, as is apparent by ashes, Roun-trees, Burt-trees, and such like, carried in the chat, or berry, by birds into stone walls.

Pale and 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 shrouding of your young trees, but about this you must bestow much Paines and more cost, to have them handsome, high and durable.

Quicke wood and Moates. 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, and four foot deep, set without with three or foure chesse of thornes and within with cherry, Plumme.

Plummes, Damson, Bullys, 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, whereabout the wood may claspe, powdered 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 years growth.

Moates, Fish ponds, and (especially at one side a River) with-
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. Moates.

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.

THere 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 whosoever shall fail in the choise of good sets, or in gettiug, 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. Slips.

Bur-knot.

A Bur-knot kindly taken from an apple-tree, is much better and surer. You must cut him close at the root end, an handfull under the knot; (some use in Summer about Lammast to circumsise him, and put earth to the knots with hay-roaps, 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 matters not much what part of the bough the twig grows out of. If it grow out of, or neer the root end, some say such an apple will have no core nor kernal. 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, cover his wound safely.

Usuall sets.

Maine roots cut.

Stow sets removed.

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 lowe, 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 sheers, knife, ax, &c. neither boal nor root will thrive, but as an hedg or bush. If you intend to graffe in your set, you may cut him closser wite a greater wound, and neerer the earth with

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 then 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 need the lesse or no staking. I commend not lying or leaning of trees against holds or stays; for it breeds obstruction of sap, and wounds incurable. All removing of trees as great as your arm, or above, is dangerous; though sometime 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 at the heart, when you dresse 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 by 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 years death. I have known a tree tainted in setting, yet grow, and beare blossomes for divers years; 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.

Plums

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 cleansed. 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 graffing, but sets to remain for trees, which I call a *Running plant*: the manner of is is this: Take a root or kinnell, & 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 such four, cut the stock aslope, as is aforesaid in this Chap. hard above the uppermost sprig, and keep those four with out Syons clean and streight, till you have them a yard and a half, at least, or two yards long. Then the next spring, in graffing 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) and 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 *Wilton* 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 litle 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 course of planting: Fourthly, every Gardener 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: The plot- how. 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 later 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, as many more, (least 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 downe) 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 mist (for who hits all?) the third misse puts your stock in deadly danger, for want of issue of sap. Yea, though you hit in grafting, yet may your grafts with wind or otherwise be broken down. If your grafts 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 litle 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 kirkels 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 hearbs) 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 tainted 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, at (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 main 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. *Object.* 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 to 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 will follow concavities. 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.

Moysture good

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

We spake in the second Chapter of moisture in general: but now especially having put your pemoved 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. Nurse they^s

(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 plant 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, perish 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 friend 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 winde, 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.

Grafts must be fenced.

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

Hurts of too
neere plant'ng.

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 sides 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 over-seeded, or a Town over peopled, or a pasture over laid; which the Gardener must either let grow, or leave the tree very few boughs to bear fruite. 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.

Generall rule.
All touches
hurtfull.

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 shroud, 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.

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 contrary 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 yeares compasse, that is, five or sixe yards on every side. Hence I gather, that in forty or fifty years, (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 looke 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, Camelion 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 roots 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 yeares 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

Wast ground
in an Orchard.

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 this 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 yeares, 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 Gardener 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 discerne, 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.

THe placing of trees in an Orchard, is well worth the regard: For although it must be granted, that any of our foresaid 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, Bullesse, 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, and can abide the blasts of *Æolus*. 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 neare 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 severall kinds of Fruit-trees, or set every kind by it selfe, order 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.

NOW 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 what.

ling.

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

A Graft. But the the thing or matter is: The reforming of the fruite 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, *Catechomen*:) 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 legge, 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 clift, with the same knock, make the wound gape a straw breadth wide, into which you must put your Graftes.

A Graft what. The graft is a top twig taken from some other tree (for it is a folly to put a graft 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 graft 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 graft, and leave it but five, or sixe inches long, because commonly you shall see the tops of long graftes die. The reason is this. The sap in grafting receives a rebuke, & cannot worke so strongly presently,

lently and your graffes receive not sap so readily, as the naturall branches. When your graffs are cleanly & closely put in, & your wedg puld out nimble, 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 therewithall cover your stock, laying the one halfe on the one side, and the other halfe on the other side of your graffes, (for thrusting again your graffes you move them) and let both your hands thrust at once, and alike, and let your clay be tender, 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.

Generall 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 thumbe, to as big as an arme of a man. You may graffe lesse (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 *Aprill*, 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, Peares, Apricoks, Quinces, and Plummes would be gathered and grafted sooner.

Time of
grafting.

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

Gathering of
graftes.

E

have

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 grafts 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 will make them sprout as fast, as if they were growing on the tree. And therefore 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 grafts would be taken not of the prodest twigs, for it may be your stock is not answerable in strength. And therefore (say I) the grafts 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 groth, tast, &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 their should your tree spread but in the midst: for their 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 theves, about grafts you shall find them stirring in the morning and evening, and the rather in the moist weather. I have had many young buds of Graffe, 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. Vsuallly before *Midsummer* they break, if they live. Some (but few) keeping provd and green, will not put till the second yeer, 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 clay, for then doth neither the stock nor the graft need it, (put a little

little fresh well tempered clay in the hole of the stock,) for the clay is now tender, and rather keeps moistur 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, shoulderwise 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 graffe, 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 tryed 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 graffes 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 graffes 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 midst 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 plentiful full roote.

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 the Scutchion.

Much like unto this, is that they call grafting in the scutchion, 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 be 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 on thornes, and Cherries on Apples, and such like. Many writ much more of grafting, but to small purpose. Whome 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

IF 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 in 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

ly without good ordering. Man himself left to himselfe, growes from his heavenly and spirituall generation, and becometh beastly, 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 fruite: 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 gardner 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 compase of human affaires so necessary, and so little regarded, not onely in Orchards, but also in all other timber trees, where, or whatsoever.

How many forrests and woods wherein you shall have for one lively thriveing tree, foure (nay sometimes twenty foure) evill thriving, rotten and dyeing trees, even while they live? and instead of trees, thousands of bushes and shrubs. What rottennesse? what hollownesse? what dead armes? withered tops? curtalled trunks? what loads of mosse? drouping boughs? and dying
 E 3 branch-

Generall rule.

Timber wood
 evill drest,

branches you shall see every where? And those that 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 beene

The cause of
hurts in woods

Imagin the root to be spread far widder.

spoyled with carelesse, unskilfull, and untimely fflowing, and much also of the great wood. The greater trees at the first rising have filled and over-laden themselves with a number of wastfull boughes

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 (accord-^{Dresse timber} ing to this pattern) and cleane by the bulke, the strength of all the ^{trees how.} 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.

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

Answ. Dresse all you can, and their 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 as 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 we see by those rootes continually and plentifully springing, notwithstanding so deadly wounded, What a comodity should arise to the owner, and the Commonwealth, if wood were cherrished, 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 ^{Profit of trees]} would grow of huge length and bignesse. But here (me thinkes) ^{dressed.} I heare an unskillfull Arboreft 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~~ ^{The end of} (though by nature) yet man by art may (nay must) correct it. ^{trees.} Now other end of trees I could never learne, then good timber, fruit much and good, and pleasure. Vses physicall hinder nothing a good forme. 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 (believe me) I have tryed it, I can bring any tree (beginning by time) 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 immediately serving a mans need) to have all the sap his root can yeeld: for as timbere 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 of fruite trees. That gardner therefore shall performe his dutie skilfully and 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) unlessse 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 but 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 thereabouts, 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 graffes 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 farte 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 betwixt

betwixt 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 fixe of your common trees, and good without shadowing, dropping and fretting; for his boughes, branches, and twigs shall be many, and those 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 lyttle, 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 raints; 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 wast 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, brusing, 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 cappacity of them that are led more
 with the eye, then the mind, craving pardon for the deformitie,
 because I am nothing skilfull either in the painting or carving.

Imagine that the paper makes but one side of the tree to ap-
 peare, 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 cre-
 do Roberto*, I can shew divers of them under twenty yeeres 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, Apricockes, Peaches, Cherries,
 and Bullyes sooner. And old trees before young plants, you may
 dresse at any time betwixt Lease and Lease. 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 Camrell must be.*

Beginne betime with trees, and doe what you list: but if you let them grow great and stubborne, you must doe as the trees list. They will not bend but breake, 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, *Obsta principiis*. Of such Faults of evill wounds, and lesser, or any bough cut off a handfull or more drest trees, and from the body, comes hollownesse, and untimely death. And the remedy. therefore when you cut, strike close, and cleane, and upward, and leave no bunch.

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

All this hitherto spoken of dressing, must be understood of Dressing of old young plants, to be formed: it is meet somewhat be said for the trees. 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.

1. An unprofitable boale.
2. Water boughes.
3. Fretters.
4. Sucker. 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 Long boale. man wealth) and the the lesse remaines for the fruit, he put his boughes into the aire, and makes them, the fruit, and it selfe No remedy. more dangered with winds: for this I know no remedy, after that the tree is come to growth; once evill, never good.

Water boughes, or under growth, are such boughes as grow 1 Water boughes. low under others, and are by them over grown, overshadowed, dropped on, and pinde for want of plenty of sap, and by that

✕ water in her course, where it findeth most issue, thither it floweth, leaving the other lesser 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 clean, 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.

Fretters.

Touching.

Remedy.

Fretters are, when as by the negligence of the gardner, two or more parts of the tree, or of divers trees, as armes, boughes, branches, or twigs, grow so neere and close together, that one, of them by rubbing doth wound 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, seen to betimes: galls and wounds incurable, but by takeing 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 bosome enemies.

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 boughes, and then your Gardner (at your discretion) may leave him for his boal, 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

One principall slip.

op 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:

medie: yet these are more tollerable, because these bear fruit, yea the best: but Suckers of long doe not beare.

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

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 Chesell, strong and sharpe, with an hand-beetle, your strong and sharp Clever, with a knock, and (which is a most necessary instrument amongst little trees) a great hasted and sharp knife or whittle. And as needfull is a stoole on the top of a Ladder of eight or moe 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 Or- Necessity of chard both better, and more lasting: Yea so necessary, that soiling 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.

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 Teselementh

Trees great
Suckers.

in *Yookeshire*, hard by us, 18 yards in length, and neere as much in compase) seeme hideous, huge strange, and monstrous, because they be indeed great but especially, because they are seldom seene: But a tree liking, come 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 seen. 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 yeers ago, I heard by credible and constant repors. That in *Brookham* Park in *Westmereland*, neer unto *Penrith*, there lay a blowne Oake, whose trunk was so bigge, that two Horsemen being the one on the one side, and the other one the other side, they could not see one another: to which if you ad his arms, boughs, & rootes, & consider of his bignesse, what woule he have been, if preserved to the vantage? Also I read in the history of the *West-Indians*, out of *Peter Martyr* that fixteene 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 tangles, to draw immediatly his sustanance from our common mother the earth (which is like in this poynt to all other mothers that bear) hath also ordained that the tree over-loden with fruit, and wanting sap to feed all the haith brought forth, will waine all the cannot feed, like a women bringing forth more children at once then she hath teats. See you not how trees especially, by kind being great, 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 soyle whereon they stand continually and amaine, and the foizon of the earth that feeds them decaying (for what is there that wasts continually, that shall not have an end?) must either have supply of sucking, or else leave thriving and growing. Some grounds will beare corne 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, with following and soyling, and the best requires supply even for the little body of corne. How then can we think that a-

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ny ground how good soever can sustaine bodics 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 cattle 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 & make it tender, and the rain wash it into the roots. The Summer time is perilous if ye dig, because the sap stirs amaine. The best kind of soil 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 rootes: and in the spring closely and equally made plain again 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 nons other foiling. Your grovnd may ly so low at the River side, that the flood standing some dayes and nights thereon, shall save you all this labour of foiling.

C A A P. 13.

Of Annoyances.

A Chiefe help to make every thing good, is to avoide the evils thereof: you shall never attaine to that good of your Orchard you looke 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 hurtfull things, what have

have you gained, but your labour for your travel? Is it with an Orchard and every Tree, as with mans body. The best part of physick for preservation of health, is to foresee and cure diseases.

Two kind of
evills in an
Orchard.

All the diseases of an Orchard are of two sorts, either intennall, or externall. I call those inward hurts which breed on, and in perticular trees.

1 Gales.

2 Canker.

3 Mosse.

4 Weaknesse in setting.

5 Bark bound.

6 Bark pild,

7 Worme.

8 Deadly wounds.

Gales.

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

Gales 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.

Mosse.

Mosse is sensibly 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 Mosse adde this, that any time in summer (the spring is best) when the cause is removed, with an Hair-cloth immediatly after a shower of raine, rub off your moss, or with a piece of wood (if the mosse abound) formed like a great knife.

Weaknesse in
setting.

Weaknesse in the setting of your fruite 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 evill, 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 bark thorough-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 dy and dry, and you shall see easily the bark swell: it is verily to be thought, that therein is bred some worme. I have not yet thorowly sought it out, because I was never troubled therewithall: but only

onely have seen such trees in divers places. I thinke it a worme rather; because I see this disease in trees, bringing fruit of sweet taste, and the swelling shewes as much. The remedy (as I conjecture) is, so soone as you perceive the wound, the next Spring cut it out bark and all, and apply Cows pisse and vineger presently, and so twice or thrice a week for a monthes space: For I well perceive, if you suffer it any time, it eats the tree or bough round, and so kills. *Since I first wrot this treatise, I have changed my mind concerning the disease called the worm, 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; whereof I thinke the best remedy is (not disallowing the former, considering that the worm may breed by such an humor) warme standing, sound lopping, and good dressing.*

Bark pil'd you shall find with his remedy in the eleventh Chapter.

Deadly wounds are, when a mans *Arborist* wanting skill, cuts off armes, boughes, or branches an inch; or (as I see sometimes) an handfull, or halfe a foote 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 hoal'd, cut him close, fill his wound, though never so deep, with morter well tempere'd, & so close at the top his wound with a Sear-cloth nailed on, that no ayre 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 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 pismires neer your tree root, no not in your Orchard: turne them over in a frost, and pour in water, and you kill them.*

For Caterpillars, the vigilant Fruterer shall soon 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 peckled 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 smoke 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. 2 Birds. 1 Bulfinch.

2 Goats.

2 Thrush.

3 Sheep.

3 Blackbird.

4 Hare.

4 Crowe.

5 Cony.

5 Pyc.

6 Cattell.

7 Horſe.

&c.

The other things are.

1 Winds.

2 Cold.

3 Trees.

4 Weeds.

5 Wormes.

6 Moales.

7 Filth.

8 Poyſonfull ſmoke.

Externall wilfull evils are theſe.

1 Walls.

2 Trenches.

3 Other workes noiſome, done in or neer your

4 Evill Neighbours.

(Orchard.

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 bears? affailing your good labours. Good things have moſt enemies.

Remedy.

A Skillfull Fruſterer 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

it need require, an Apple with an hooke 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 *Birds*. 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.

The best remedy here is a Stone-Bow, a Piece, especially if you have a musket, or sparhauke in winter to make the Black-bird stoop 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 Oakes, 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 livelyhood.

And although we admit without the fence of wall-nuts in most *Winds*. plain places, Trees middle most, and ashes or Oakes, or Elms utmost, set in comely row equally distant, with fair Allies 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 *Frosts*. against the nipping frost.

Weeds in a fertile soile (because the generall course is so) till *Weeds*. 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 handsome from them, and all other filth, with a spade, weeding knives, rake with Iron teeth, a scraple of Iron thus formed,

For Nettles, and ground Ivy after a shower.

When weedes, 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 and fatten your ground.

Wormes.
Moales.

Remedy.

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 barrennesse.

Wormes may easily be destroyed. Any Summer evening when it is darke, after a shower with a candle you may fill bushels, 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.

Moals will anger you, if your Gardener 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 morne, 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 shee hath) there trench, and watch, and have her.

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

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

CHAP. 14.

Of the age of trees.

IT 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 better 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 yeares. 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 soile and

and site, as is described, so planted and trimmed and kept, as is afore appointed, and duely soiled, shall dure a thousand yeers, The age of why should we not take pains, and be at two or three yeers trees. 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?

Let no man think this to be strange, but peruse and consider the reason. I have apple trees standing in my little Orchard, Gathered by which I have knowne these fourty yeers, whose age before my reason out of time I cannot learn, it is beyond memory, though I have inquir. experience. ed of divers aged men of 80 yeers and upwards: these trees although come into my possession very ill ordered, and mishapen, 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 discerne not onely by their owne growth, but also by comparing them with the bulk 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 hindered in their stature by evill guiding. Hence I gather thus.

If my trees be a hundred yeers old, and yet want two hundred of their growth before they leave encreasing, which make three hundred, then must we needs resolve, that this three hundred yeers 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 years; three hundred for increase, three hundred for his stand, whereof we have the tearme 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 always the fore said 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 increase

Parts of a trees age.

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

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 yeares; 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 dominerings diseases. I will not say upon true report, that Physick holds it possible, that a clean body kept by these three Doctors, *Doctor Dyet*, *Doctor Quiet*, and *Doctor Mer- riman*, may live neer a hundred yeares. Neither will I here urge the long yeares of *Metbusalah*, and those men of that time, because you will say, Mans daies 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 increasings in an iron and wicked age.

Now if a man, whose body is nothing (in a manner) but tender rottenesse, whose course of life cannot by any meanes, by counsell, restraint of Lawes, or punishment, nor hope of praise, profit, or eternal glory, be kept within any bounds, who is degenerate clean from his natural feeding, to effeminate nicenes, 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 owne death, as idlenesse, 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 superfluities, 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 Philosophy, 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 *Roterdam* out of *Hesiodus*, and many other Historiographers. The testimony of *Cicero* in his book *De Senectute*, is weighty to
this

this purpose: that we must *in posteras etates serere 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 comparlson with the earth, but as haire to the body of a man? And it is certain, without poisoning, evill and distemperate dyet, and usage, or other such forcible cause, the hairs 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 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 yeers are many. You shall see old trees put forth their buds and blossomes both sooner and more plentifully 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 plentiful 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 *Methusalaes*, before they end their dayes, whose sap is strong and bitter, whose bark 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 only so, but he is free from removals, which are the death of millions of trees, where as the fruit-tree in comparlson is little and often blowne down, his sap sweet; easily, and soon tainted, his barke tender, and soon wounded, and himself used by man, as man useth himself, that is, either unskillfully or carelessly.

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 yeers, by his knots: Reckon from his root up an arme, and so to his top-twig, and every yeers growth is distinguished from other by a knot, except lopping or removing doe hinder.

CHAP. X V.

Generall rule,

Of gathering and keeping fruit.

Cherris, &c.

Although it be an easie matter, when God shall send it, to gather and keep fruit, yet are they 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 fruit 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 Rabbits, 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.

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.

Dry stalkes.

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

Severally.

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

Over laden
trees

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

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) neer 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;

Instruments: A long ladder of light firre, a stoole ladder as 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 five bottome, or skinné bottome, with lathes or splinters under, hung in a rope to pull up and downe: bruise none, every bruise is to fruite death: if you doe, use them presently: an hooke to pull boughes to you is necessary, break no boughes.

Bruises.

For keeping, lay them in a dry loft, the longest keeping Apples first and furthest one 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 well with straw, but rather with chaffe or branne: For frost doth cause tender rottenesse.

Keeping.

CHAP. 16.

Of profits.

NOW 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 loose hereby the chiefe good which belongs to house-keeping.

Compare the commodity that cometh 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.

Cyder and

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

Perry.

H

straine

straine 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 pills of Lemons in the midst of the vessell, it will make it as wholesome & pleasant as wine. The like usage doth Perry require.

Fruit.

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

Waters.

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

Waters distilled of **Roses**, Woodbind, Angelica, are both profitable and **wondrous** pleasant, and comfortable.

Conserve.

Saffron and Licoras will yeeld you much conserves, 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. 17.

Ornaments.

Me thinkes 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 freinds,

Delight the
cheife 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 moyl- ing, 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 Orehard
delightfome.

Image,

Image, in a Perfect state, and would have him to represent himselfe in authority, tranquility, and pleasure upon the earth, he placed him in *Paradise*. What was *Paradise*? but a Garden and Orchard of trees and hearbs, full of pleasure? and nothing there but delights. The gods of the earth resembling the great God of heaven in authority, Maiesty 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, choaked (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 discourings? whether? 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.

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.

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.

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

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 delightful then an infinite variety of sweet smelling flowers? decking with sundry colours, the green mantle of the earth, the universall

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.

Flowres.

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-scenting woodbine, double and single, and double double. Purple Cowslips, 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 comely and orderly placed in your borders and squares, and so intermingled, that none looking thereon cannot but wonder, to see what nature corrected by Art can doe.

Mounrs.

whence you
may shoot a
Buck.
Diall.
Musick.

When you behold in diverse corners of your Orchard *Mounrs* 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 diall 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?

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 Febbies, Raspberries, Barberries, Currents, 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: or 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 yourcoyne.

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 Buts to stretch your arms. Bowling-Alley.

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

Look Chapt r 5. 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, or 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 amongst them, you need not doubt them: for but near there 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 withus ripen slowly. One

Birds.
Nightingale.

Robin red-
breast.

Wren.

Black-bird.
Thrush.

You owne
labour.

One chiefe grace that adorne 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-breast will help her, and 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.

The Black-bird and Threstle (for I take it, the Thrush sings not, but devours) sing loudly in a *May* morning, and delights the eare 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 attend in 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 pleasure 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.

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, publi-
shed 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.*

LONDON,

Printed by *W. Wilson*, for *E. Brewster*, and *George*
Sawbridge, at the Bible on Ludgate-Hill, neere
Fleet-bridge. 1653.

Handwritten text in a cursive script, likely a historical document or manuscript. The text is written in a dark ink on aged, yellowish paper. The script is dense and fills most of the page, with some lines appearing more prominent than others. The handwriting is characteristic of a historical cursive style, possibly from the 17th or 18th century. The text is written in a single column, with some lines starting with a small mark that could be a paragraph indicator or a decorative flourish. The overall appearance is that of a well-preserved but aged piece of paper with clear, though somewhat faded, handwriting.

THE COUNTRY HOUSEWIVES GARDEN.

CHAP. I.

The Soyle.

THe soyl of an Orchard and Garden differ onely in these three points: First, the Gardens soyl would be somewhat dryer, because herbs being more tender then trees, can nei-^{Dry}ther abide moysture nor drought, in such excessive measure, as trees; and therefore having a drier soyle, the remedy is easie against drought, if need be: water soundly; which may be done with small labour, the compass 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 moy-^{Hops}sture trouble you, I see no remedy without a generall danger, except in Hops, which delight much in a low and sapyp 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, and the roots of herbs be-
ing

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

Thirdly, if a garden soil be not clear of weeds, and namely of grafs, the herbs shall never thrive: for how should good herbs prosper, when evil 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 fallowed, 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 weedes, but also is a speciall ornament, and leaves more plentiful sap for your tender herbs.

CHAP. 2.

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 Pumpions, and Melons.

CHAP. 3.

Of the Forme.

L Et 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 brains. Neither is the wit and art of a skilfull Gardner in this point not to be commended, that can work 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 set downe many, had been but to fill much paper; yet lest I deprive her of all delight and direction, let her view these few, choise, new forms; and note this generally, that all plots are square, and all are bordered about with Privet, Raisins, Fea-berries, Roses, Thorne, Rosemary, Bee-flowers, Isop, Sage or such like.

The ground
plot for
Knots.

Flower-
deluce. The Tre-
foyle.

The fret.

Lozenges.

Crossebow.

Diamond.

Ovall.

Maze.

C H A P. 4.

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 Kitchen garden doth yeeld rich grains, by berries, roots, cabbages, &c. yet theſe are no way comparable to the fruits 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.

C H A P. 5.

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.

C H A P. 6.

Of two Gardens.

Herbes are of two ſorts, and therefore it is meete (they requiring divers manners of Husbandry) that we have two Garden: A garden for flowers, and a Kitchen garden: or a Summer garden: not that we meane ſo perfect a diſtinction, that wee meane ſo perfect a diſtinction, that the Garden for flowers ſhould or can be without herbs good for the Kitchen, or the Kitchen garden ſhould want flowres, nor on the contrary: but for the moſt part they would be ſevered: firſt, becauſe your Garden flowers ſhall ſuffer ſome diſgrace, if among them you intermingle Onions, Parſnips, &c. Secondly, your Garden that is durable, muſt be of one forme: but that which is your Kitchens uſe, muſt yeeld daily rootes, 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.

THe herbs and flowers are comely and durable for squares & Knots, and all to be set at *Michaeltide*, or somewhat before, that they may be settled in, and taken with the ground before winter, though they may be set, especially sowne 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 seldome, thrive all.

Rosemary, Lavender, Bee-flowers, Hop, Sage, Time, Cowslips, Pyony, Daisies, Clove-Gilliflowers, 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 profit, and exquisite forme 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 hearbs aforesaid. The rather because abundance of Roses and Lavender, yeeld much profit, and comfort to the senses. Rose-water Lavender, the one cordiall (as also the Violets, Bur-rage, and Buglas (the other reviving the spirits by the sence 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 hearbs require more moysture: yet must you have your beds divided, that you may gee betwixt to weed, and somewhat of forme 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. 7.

Division of Herbs.

GArden herbs are innumerable, yet these are common, and sufficient for our Country-housewives.

Herbs of greatest growth.

K

Fen-

Fennell, Angelica, Tanfie, Hollihock, Lovage, Elicampane, French Mallows, Lilies, French Poppie, Endive, Succory, and Clary.

Herbs of middle growth.

Burrage, Buglosse, Parsly, Sweet Sicily, Flower-deluce, Stock-gilliflowers, Wall-flowers, Anniseeds, Coriander, Feather-few, Marigolds, Oculus Christi, Langdibee, Alexanders, Carduus Benedictus.

Herbs of smallest growth.

Pansie, or Harts-case, Coast-Marjoram, Savery, Strawberries, Saffron, Licoras, Daffadownhillies, Leeks, Chives, Chibbals, Skerots, Onions, Batchelors buttons, Daisies, Peniroyal.

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

CHAP. 8.

Husbandry of Herbs.

Alexanders are to be renewed as Angelica. It is a timely pot-herb.

Angelica is renewed with his seed, whereof he beareth plenty the second year and so dieth. You may remove the roots the first year. The leaves distilled, yeild water soveraign to expel paine from the stomacke. The roote dried 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, & it is used in Comfits.

Artichoakes are renewed by dividing the rootes 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 plentiful of fruit much desired.

Burrage and Buglesse two Cordials renew themselves by seed yearely, which is hard to be gathered, they are exceeding good Potherbs, good for Bees, and most comfortable for the heart and stomack, as Quinces and Wardens.

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

Cabbages require great roome, they feed 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 Caterpillers worine, 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 Pothearbe, and of this hearb called *Cole*, our Country House-wives give their pottage their name, and call them *Caell*.

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

Carrets are sowne late in *Aprill* or *May*, as Turneps, else they feed the first year, & then their roots are naught: the second year 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 pothearb opening, but evill for the eyes.

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

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

Coriander is for usage and uses, much like Anniseeds: Daffadown dillies have their roots parted and set once in three or four year, or longer time. They flower timely, and after *Midsummer* are scarcely seene. They are more for Ornament, then for use, so are Daiesies.

Daisie roots parted 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.

Ellycampane root is long lasting, as is the Lovage, it feeds yearely, you may divide the root, and set the root, 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

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 dividing one root into many Sets, as Artichoke. It is long of growth and life. You may remove the root unshankt: It is exceeding good for the eyes, distilled, or any otherwise taken: it is used in dressing Hives for swarms, a very good Pot-herb, or for Sallets.

Fetherfew shakes 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.

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

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

July-flowers of the wall, or wall-July-flowers, Wall flowers or Bee-flowers, or Winter-July-flowers, 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, & 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 flower'd will take root; or crop him in Summer, and he will flower in winter, but his winter seed is untimely. This and Palmes are exceeding good, and timely for Bees.

Leeks yeeld seed the second yeer, unremoved; and dye, unlessse you remove them, usuall to eat with salt and bread, as *Onyons* alwaies green, good pot-herb, evill for the eyes.

Lavender-Spike would be removed within seven yeers, or eight at the most: slips twined, as *Hysope* and *Sage*, would take best at *Michael-tide*. This flower 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 yeer, 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 the pot.

Lillies white and red, removed once in three or foure yeers, 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 breake a byle, as are *Mallows* and *Sorrel*.

Mallows, French or gagged, the first or second yeer, seed plentifully. Sow in *March*, or before. They are good for the housewifes 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*, seedes and dyes the first or second yeer: you may remove the young Plants, but seed is better. One of these seeds put into the eye, within three or fower howers will gather a thick skinne, cleere the eye, and bolt it selfe forth without hurt to the eye. A good Pot-herbe.

Onyons are sowne in *February*, they are gathered at *Michael-tide*, and all the Summer long, for Sallets; as also young parilly;

Sage, Chibals, Lettice, sweet Sicily, Fennell, &c. good alone, or with meate, as muttons, &c. for sawce, especially for the pot. *Parsly* sow the first yeer, and use the next yee r: it seeds plentifully, an hearb of much use, as sweet sicily is. The seed and roots are good against the stone.

Parsneps require an whole plot, they be plentiful and common, sow them in *February*, the kings (that is in the middle) seed broadest and reddest. Parsneps are sustenance for a strong stomacke, not good for evill eies: When they cover the earth, in a drought, to tread the tops, make 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 hacktmeat, or Haggas pudding.

Pumpions: Set seeds with your finger, a finger deep, late in *March*, and so soone as they appeare, 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 flower, 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 immediatly after *Lammas*, is the surest way. Seed sown may prove well, so they be sowne in hot weather, somewhat moist, and good earth: for the hearbe, 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 him not seed if you will have him last.

Saffron, every third yeare 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 (or they

they shape much like Lillies) dry, and utter dry them : they be pretious, expelling diseases from the heart and stomack.

Savory seeds and dyes the first yeare, 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?

Skerots, 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 parfly.

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 foure yeers or more, it smelleth comfortably. It hath much use, namely, in all cold meats, it is good for Bees.

Turnep is sowne. In the second yeare 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 only, 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*, *Charvell*, *Valerian*, *Go-to bed at noone*, *Piony*, *Licoras*, *Tansie*, *Garden mints*, *Germander*, *Centaurie*, and a thousand such Playfick 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.

CHAP. 9.

Generall Rules in Gardening.

IN the South parts Gardening may be more timely, and more safely done, then with us in *Yerkeshire*, because our ayre is not so favourable, nor our ground so good.

Secondly most seeds 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 roots of those slips you set, if they will abide it. Gilly flowers are too tender.

5 Set moist, and sowe dry.

6 Set slips without shanks 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 greene the sap being in the top, but in Winter the roote is best.

9 All the herbs in the Garden for flowers 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*, *Daisies* and *Violets*, are seemly and comfortable.

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

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

13 Lay not dung to the roots of your herbs, as usually they doe: 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.

15 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 lined out a Garden to our Countrey Housewives, 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 Mistress either to be present her self, or to teach her maids to know herbs from weeds.

C H A P. 10:

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 skilfullnesse 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 carefull Bee houses. for, is an house, not stakes and stones abroad, *Sub dio*: for stakes rot and reele, Raine and Weather eat 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 is the forme; a Frame standing on potts with a floore (if you would have it hold more Hives, two floores boarded) layd on bearers, and back posts, covered over with boords, flat-wise. Let the floores be without holes or clifts, lest 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 nimblenesse, closenesse, warmnesse, and drynesse. 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 swarme, 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 room sufficient, they rippen 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 *Mayer* swarme 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 swarme of your own, or others, will of it selfe come into such and 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 swarme knit in the top of a tree, as they will, if the wind beat them not to fall down, ler 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 thwart, and one top Spelk are sufficient. The Bees will fasten their combs 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 hoal'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 seat. 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-
wayes 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 them-
selves, 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 descanting 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 conject-
ures of it, viz. wee see in the combs diverse greater houses then
the rest, and we commonly hear the night before they cast, some-
times one Bee, sometimes two or more Bees, give a lowd and se-
verall 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
wil 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 Mr. Mark-
ham 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 wreaths
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 swarmes, 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 Win-
ters 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 spoyle 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 iron clasps & nails, the clasps 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 their flowers; as Beans, Fennell, Burrage, Rape, &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 on the night, and so they further them.

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

Droanes

cwhich 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 cooing 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 at which the lesser Bees may enter, but not the Droans; so that you may kill them at your pleasure.

Andyances.

Snails spoil them by night like thieves: 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 smock 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 weath'r, and dys in cold: And therefore let my House-wife be perswaded, that a warm dry house before described, is the chiefeest help she can make her bees against this, and many more mischiefes. Many use against cold in winter, to stop up their hive close, & some set them in houses perswading themselves, that thereby they releive 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 herself. Judge you what it is for any living creature, not to 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 hungry 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 ^{Taking of Bees.} cast after three years, it is such as have swarms and old bees kept all together, which is great losse. Smoaking with Raggs, Rozen, or brimstone, many use: some use drowning in a tub of cleane water, and the water well brew'd, will be good botcher. 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.

Let no fire come near your honey, for fire softneth the Wax ^{Straining honey.} 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 laden Combes into a sieve, burn 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.

Usual Vessels are of Clay, but after wood be satiated with ^{Vessels.} Honey (for it will leake at first: for honey is marvellously searching, the thick, and 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.

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 clearely 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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Garden.

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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 soure sorts of planting or propa-
 gating, as in laying of shoots or little
 branches, whiles they are yettender, in
 some pit made at their foot, as shall be
 said hereafter, or upon a little ladder or
 basket of earth, tied to the bottom of the
 branch, 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
 M the

the spring, and *March*, when the trees are in the Flower, and do begin to grow lusty. The young planted Siens 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 Siens, or little plants must be cut close by the earth, when as they grow about some small Impe, which we meane to propagate, for they would 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 gentlenesse, and stop close your Siens, in such sort, as that the wreath which is in the place where it is grafted, may be a little lower than the Siens 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 stiffe to lay in the pit: then you may wet the stock almost to the midst, betwixt the root and the wreathing place, and so with gentle handling of it, bow downe 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 gravell and sand.

CHAP. 2.

Grafting in the Bark.

GRafting in the bark, 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 bark 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 midit of *June*, unto the midit of *July*, but in cold Countries to the midit of *August*, after some small showers of Raine.

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

Graft from the full of the Moone, 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, Gravel, Sand, or strong Earth, to draw over the plants cloven: Mosse, Woollen clothes, barks of Willow to joine to the late things and earth before spoken; and to keep them fast: Oziers to tye againe upon the bark, to keep them firme and fast: gummed Wax 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 commeth to pass 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 need is to be made, which must be all wayes well ground, well burnished 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 brasill.

CHAP. 3.

Grafting in the Cleft.

THe manner of grafting in a cleft, to wit, the stock being clov'd, is proper not only 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 declared heretofore.

To graft in the left, you must make choyce of a graft that is full of sap and juice, 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 hinderance 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 rottenesse, 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 hands, 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.

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 four eylets 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, hould 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 againe, when you have set in your grafts.

If the stock be cloven, or the barke loosed too much from the wood: then cleave it downe 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 pitch, 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 joyned, 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 of your wedges, bind and go about the stock with two or three turnes, and that with an Ozier, close drawn 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 selfe, and breatheth out all his life in
that

that place, which is the caule that the Stock & the Graft are both
Tipt. 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 rain running upon the grafted
place, do not get in: when the plant cleaveth very streight, there
is not any danger nor hardnes in sloping downe the Graft.
If you leave it somewhat uneven or rough in some places, or
that the saps both of the one and of the other may the better
grow, and be glued together, when your grafts are once well
joynd to your plants, draw out your wedges very softly, least
you displace them againe: you may leave therewithin the cleft
some small end of a wedge of green wood, cutting it very close
with the head of the Stock: Some cast give into the cleft, some
sugar, and some gummed Wax.

If the Stock of the Plant, whereupon 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 by as, 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 mosse of the Woods tyed together with a strong band: stick a pole of Wood by it to keep it steadfast.

CHAP. 4.

Grafting like a Scutcheon:

IN grafting after the manner of a Scutcheon, you shall not vary nor differ much from that of the Flute or pipe, save onely that the Scutcheon-like graft having one eylet, as 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.

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 cylet, the taile and all, thereof to make your grafts. But when you choose, take the thickest, and grossest, divide the tail in the

the middst, 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 patterne of a shield, of the length of a nail.

In which there is onely one eylet higher then the middst 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 presse 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 tayle 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 Sizars 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 Sizars 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

binde your Scutcheon about with a band of Hempe, as thick as a pen of a quill, more or lesse, according as your tree is small or great, taking the same Hempe in the midst, 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 strait, for that would keep it from taking the joyning of the one sap to the other, being hindred thereby, and neither the Scutcheon, nor yet the Hempe must be moist or wet: and the more justly to bind them together, begin at the backside of the tree, right over against the midst of the incision, and from thence come forward to joyne them before, above the eylet and taile of the Scutcheon, crossing your band of Hempe, so oft as the two ends meet, and from thence returning back againe, come about and tye it likewise underneath the cylets: and thus cast about your band still backward and forward, untill the whole cleft of the incision be covered above and below with the said Hempe, 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 ingrafting, 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 Hempe behind them, and leave them uncovered. Cut also your branch two or three fingers above that, so the impe may prosper the better: and thus let them remaine till after winter, about the month of *March*, and *April*.

If you perceive that your budde of your Scutcheon do 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 meanes greatly to hinder the flowing of it, and cause also that it should not thrive and prosper so well after that one yeere 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 in byas-wise 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.

In *Exeter* - 2-2 PM
Eliz Pike - 3-0 PM
Exeter - 1-0

In *Larrah* *last* *night* *low* *2*
Robt. Hub *30*

When your shoote shall have put forth a great deal of length, you must sticke downe 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 plaine fashion of a Scutcheon. It is ordinary to graffe the sweet Quince-tree, bastard peach-tree, Apricock-tree, Iujube 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 foote: you shall not go 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 Mosse, 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 only excepted) But commonly, graft at that time of
N the

THE

HUSBAND MANS
FRUITFULL ORCHARD.

For the true ordering of all sorts of
Fruits in their due seasons : and how double
increase commeth 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.

Of all stone Fruit, Cherries are the first to be
gathered: of which though we reckon foure
sorts; *English, Flemish, 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 boughs, 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, and be sure to break no stalk, but that the cherry hangs by; and pull them gently, lay them downe 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 Batkets like fives, 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 fives 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 Earne, and packt full and close is the best and safest way.

Other stone
fruit.

Now for the gathering of all other stone fruit, 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 fives, 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, and not rot so soon, as if they were full ripe at the gathering. But if your Peares be to be transported far either by Land or Water, then pull one from the Tree, and cut it in the midst, 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 only their taste, but beauty.

Now for the manner of gathering; albeit some climb into the trees by the boughes; and some by Ladder, yet both is amiss; the best way is with the Ladder before spoken of, which standeth of itself, 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 pear: then you may gather them, and in the house they will come to their ripeness 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 baskets, and a hooke 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 own stalkes may prick them; and those which are prickt, will ever rot. Again, you must gather your fruit clean 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 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, and before they are ripe; and 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 meanes to beat downe fruit with Poales, or to carry them in carts loose 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 containe 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 gentlenesse, and leasure, laying every sort of fruit severally by it self: but if there be want of roome, 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 farr from your Apple-Loft, then must the bottomes of your Baskets be lined with green Ferne, and draw the stubborne 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 Fern 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 ayre may passe through them: and if you will not hasten the ripening of them, then lay them on the boards with-
out

out any Fearne at all. Now for Winter, or long lasting Peares, they may be packt either in Ferne or Straw, and carried whither you please; and being come to the journeys end must be laid upon sweet straw; but beware the roome be not too warme, nor windy, and too coole, for both are hurtfull: but in a temperate place, where they may have ayre, but not too much.

Wardens are to be gathered, carried, packt, and laid as Winter Peares are. Of wardens.

Medlers are to be gathered about *Michaelmas*, after a frost hath toucht them; at which time they are in their full growth, and will then be dropping from the tree, but never ripe upon the tree. When they are gathered, they must be laid in a basket, five, barrell, or any such cask, and wrapt about with woollen cloths, under, over, and on all sides, and also some weight laid upon them, with a board between: for except they be brought into a heat, they will never ripen kindly, or tast well. Of Medlers.

Now when they have laine till you thinke some of them be ripe, the ripest, still as they ripen, must be taken from the rest: therefore powre them out into another five or basket leasurely, that so you may well find them that be ripest, letting the hard ones fall into the other basket, and those which be ripe laid aside: the other that be halfe ripe sever also into a third five or basket: for if the ripe and halfe ripe be kept together, the one will be mouldy, before the other be ripe: And thus doe till all be thoroughly ripe.

Quinces should not be laid with other fruit; for the sent is offensive both to other fruit, and to those that keep the fruit or come amongst them: therefore lay them by themselves upon sweet straw, where they may have ayre enough: they must be packt like Medlers, and gathered with Medlers. Of Quinces.

Apples must be packt in Wheat or Rye-straw, and in maunds or baskets lyned with the same, and being gently handled, will ripen with such packing and lying together. If severall sorts of apples be packt in one maund or basket, then betweene every sort lay sweet straw of a pretty thicknesse. To pack Apples.

Apples must not be powred out, but with care and leasure: first, the straw pickt cleane from them, and then gently Emprying and laying Apples take

80
 70
 70
 10
 19-10

Difference in
 fruit.

7-0
 2-5
 9-11
 17-6

Transporting
 fruit by water.

When not to
 transport fruit.

To convey
 small store of
 fruit.

Roomes for
 fruit.

take out every severall sort, and place them by themselves: but if for want of room you mixe the sorts together, then lay those together that are of equal lasting: but if they have all one tast, then they need no separation. Apples that are not of like colours should not be laid together, and if any such be mingled, let it be amended, and those which are first ripe, let them be first spent, and to that end, lay those apples together, that are of one time of ripening: and thus you must use Pippins also, yet will they indure bruises better then any other fruit, and whilst they are green will heale one another.

Pippins though they grow of one tree, and in one ground, yet some will last better then other some, and some will be bigger then others of the same kind; according as they have more or lesse of the Sun, or more or lesse of the droppings of the trees or upper branches: therefore let every one make most of that fruit which is fairest, and longest lasting. Againe, the largenesse and goodnesse of fruit consists in the age of the tree: for as the tree increaseth, so the fruit increaseth in bignesse, beauty, tast, and firmnesse: and otherwise as it decreaseth.

If you be to transport your fruit far by water, then provide some dry hogges-heads or barrells: and packe in your apples, one by one, with your hand, that no empty place may be left, to occasion fogging; and you must line your vessel at bot' ends with fine sweet straw; but not the sides, to avoid heat: and you must bore a dozen holes at either end, to receive ayre so much the better; and by no meanes let them take wet. Some use, that transport beyond seas, to shut the fruit under hatches upon straw: but it is not so good, if caske may be gotten.

It is not good to transport fruit in *March*, when the wind blowes bitterly, nor in frosty weather, neither in the extreame heat of Summer:

If the quantity be small you would carry, then you may carry them in Dossers or Panniers, provided they may be ever filled close; and that Cherries and Peares be lined with green Fearn, and Apples with sweet straw; and that, but at the bottomes and tops, not on the sides.

Winter fruit must lye neither too hot, nor too cold, too close nor too open: for all are offensive. A low roome or Cellar that

that is sweet, and either boarded or paved, and not too close, is good, from *Christmas* till *March*; and roomes that are seeled over head, and from the ground, are good from *March* till *May*, then the Cellar againe, from *May* till *Michaelmas*. The apple loft would be seeled or boarded, which if it want, take the longest Rye-straw, and raise it against the walls, to make a fence as high as the fruit lyeth; and let it be no thicker then to keep the fruit from the wall, which being moyst, may doe hurt, or if not moist then the dust is offensive.

There are some fruit which will last but untill *Allhallontide*: they must belaid by themselves, then those which will last till *Christmas*, by themselves; then those which will last till it be *Candlemas*, by themselves; those that will last till *Shrovetide*, by themselves, and Pippins, Apple Johns, Peare-maines, and Winter Russetings, which will last all the yeere by themselves.

Sorting of
Fruit.

Now if you spy any rotten fruit in your heapes, pick them out, and with a Tray for the purpose, see you turne the heapes over, and leave not a tainted Apple in them, dividing the hardest by themselves, and the broken skinned by themselves to be first spent, and the rotten ones to be cast away; and ever as you turne them, and pick them, under-lay them with fresh straw: thus shall you keep them for your use, which otherwise would rot suddenly.

Pippins, Iohn-Apples, Peare-maines, and such like long lasting ring fruit, need not to be turned till the week before *Christmas*, unlessse they be mixt with other of riper kind, or that the fallings be also with them, or much of the first straw left amongst them: the next time of turning is at *Shrove-tide*, and after that once a month till *Whitson-tide*; and after that, once a fortnight; and ever in the turning, lay your heapes lower and lower, and your straw very thinne: provided you doe none of this labour in any great frost, except it be in a close Cellar. At every thaw, all fruit is moyst, and then they must not be touched: neither in rainy weather, for then they will be danke also; and therefore at such seasons it is good to set open your windowes and doores, that the ayre may have free passage to dry them, as at nine of the clock in the forenoon in Winter, and at sixe in the fore-noone,

and at eight at night in Summer; onely in *March*, open not your windowes at all.

All lasting fruit, after the midst of *May*, begin to wither, because then they wax dry, and the moisture gone, which made them look plumpe, they must needs wither, and be small; and nature decaying, they must needs rot. And thus much touching the ordering of fruits.

at Carthus Nov. 16th and before
little — 08-9x
Blaloe — 20-0x
Pomant son — 0-0x
and a sowry 20-0

124-3

FINIS

FINIS.

Hot 8.3
Graham — 21-0
and a sowry 24-0
Dalton 21-0x
Mr Pats 21-0x
little 11-0
Gibson — 20-2

138-2

my own 150x
smaller —)
G. S. 20
Houghton 20
Seefe 31-2
Parton 20-0
Dalton 20-0
Hot Coulthart 16-0

137-2

124-3

138-2

400-9