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T H E
Practical Farmer:

O R, T H E
Hertfordshire Husbandman :

Containing many New
IMPROVEMENTS in HUSBANDRY.

- | | |
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| <p>Of MELIORATING the different SOILS, and all other Branches of Business relating to a FARM.</p> <p>I. Of the NATURE of the several Sorts of WHEAT, and the SOIL proper for each.</p> <p>II. Of the great Improvement of BARLEY, by BRINE-ING the SEED, after an entire new Method, and without Expence.</p> <p>V. Of increasing Crops of PEASE and BEANS by HORSE-HOUGHING.</p> <p>V. Of TREFOYLE, CLOVER, LUCERNE, and other Foreign Grasses.</p> | <p>VI. A new Method to IMPROVE LAND at a small Expence, with BURN'T CLAY.</p> <p>VII. Of the Management of COWS, SHEEP, SUCK-LING of CALVES, LAMBS, &c. with Means to prevent, and Remedies to cure ROTTENNESS in Sheep.</p> <p>VIII. How to keep PIGEONS and TAME RABBITS to Advantage.</p> <p>IX. A new Method of PLAN-TING and IMPROVING FRUIT-TREES in <i>Ploughed-Fields.</i></p> |
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By *WILLIAM ELLIS*,
Of *Little Gaddesden*, in *Hertfordshire*.


The **Second Edition**; with ADDITIONS,
Which those, who bought the former, may have *gratis*.

L O N D O N :

Printed for WEAVER BICKERTON, at Lord Bacon's Head, without Temple-Bar; THOMAS ASTLEY, at the Rose; and STEPHEN AUSTEN, at the Angel and Bible, in St. Paul's Church-Yard.

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P R E F A C E.

AS no Profession is more useful in the World, than this of Agriculture; so does it require the greatest Care, Study and Pains to manage its many depending Branches, so as to make them answer successful Ends. For this Purpose several elaborate Tracts have been writ, to forward Improvements in this boundless Science; which has brought about, and effected such beneficial Alterations in Farming, as to cause both Landlord and Tenant to rejoice in their plentiful Productions.

In the further pursuance of which, I have here humbly thrown my Mite

iv P R E F A C E.

into the Publick Treasury : And, for the sake of my good Intention for the Common-Weal, I hope the Generous will excuse the Deficiencys that may have accompany'd my Rustick Pen; which hereafter I shall silence, or employ in further Enlargements of this kind, as the following Treatise shall more or less meet with Encouragement from the Publick.





THE
Practical Farmer :
OR, THE
Hertfordshire Husbandman.

Of the MELIORATION *of Soils.*

MELIORATION of Soils, may be otherwise called an Alteration of Earths, or Improvement of them, by mixing their several sorts of Bodies with Dungs, Chalks, Lime, Sand, &c. or else by manuring them with

6 *The Practical Farmer: or,*

Hand-dressings; as with Soot, Ashes, Hornshavings, Coney-clippings, and Rags, at proper Seasons: or else by the several sorts of sowed Grasses, which gives the Earth an opportunity of enjoying a Rest, a longer or shorter time, as the Owner thinks fit; but the longer it lies under such Rest, the more mellow it becomes, by obtaining in that time a certain Crust or Grass-Cover, which prevents the Ground being exhausted by the Sun's attracting heat and power, or by carrying off the Stover. For when these foreign Grasses are fed by Cattle, there is a Dung and Stale returned and left behind, whose Quintessence or Virtue gets into the Ground; which so mellows and enriches it, with their saline, nitrous and sulphureous Qualities, as to cause a very great Improvement to the Land. And therefore it is, that Lands are capacitated to produce the great succeeding Crops of Corn that we annually perceive: So by Dung that we plough in, which, like Yest in Dough, hollows and ferments the Earth in a small or greater degree, with its saline and warm Particles, that will in one sort of Soil last a great deal longer than in others; as in Clays, two or three years, when in Gravels hardly a year. And therefore it is certainly judicious Husbandry to adapt each Dressing to its proper Soil: Also by Chalks; which is so great a mellow of Land, that the Effect thereof will remain in some Ground

The Hertfordshire Husbandman. 7

Ground twenty Years after: and this is more efficacious, as it is better or worse. Therefore it is of considerable importance what sort of Chalk is made use of; for above all others, the fat Chalk is as much to be sought after, as the lean stony Chalk is to be rejected; wherefore several Farmers are sometimes obliged to try more than one place in their Field to search for the best sort: for there are in the Earth, and I have known it even in one Field, that a hard and soft Chalk has been found; which has obliged the Owner to cut through a hard, stony, rocky sort, before they could come at the right fat sort.

By Lime and Sand are Clays vastly altered, and their tough Bodies reduced both by the Chalk, and these into a delicate mediocrity of Earth, that is capable of far greater Improvements afterwards than before: for as the Clay is tough and sour, the Chalk, Lime and Sands shorten and sweeten its Body; and so the Clay is no less beneficial to the Sand, by the reverse nature of each other's body. This is true Melioration, and indeed it is pity more of this sort of Husbandry is not practised; if it was, greater quantities of Grain and Grass might be had, than we now generally have. Some indeed I have known of the better sort of Husbands, that have sent their Carts several miles for this valuable Dressing, when others that are more ignorant and slothful, will not fetch it,

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tho'

tho' it is to be had even in the very Field where it is most wanted. Lime also is a most potent Mellower and Improver of cold, steril Earths, and especially those sorts that are of the cold and wet nature ; because this sort of Manure is full of fiery and alkalous Salts, which so warm the parts of any cold Soil, that it will cause the Grain which is sowed therein to flourish, and look with a dark green in a cold wet Spring, when others yellow and die thro' the extremity of wet and cold.

Horn-shavings, Hoofs, Coney-clippings and Rags are all great Mellowers of Earths, by warming and hollowing their parts in the frosty or watry Seasons, and oftentimes prevent the ruin of whole Crops of Grain that are sown in the Earths where these are mixed. They who live within ten or twenty miles of *London*, have certainly a great opportunity of buying Rabbits and Fowls Dung, which I am sure are very great succours to cold spewy Grounds, be they either Arable or Meadow : And I could not but regret to see such quantities thrown away there, that would be worth at least Sixpence the Bushel here*.

W H E A T.

* See farther *Mr. Switzer's Method of Improving Land by burnt Clay, &c.*



W H E A T.

OLD red Lammas has a red Straw, and a red Ear; this is reckoned the best of Wheat, because it makes the finest Flower. It answers better in the Vale and on rich Lands, as in *Bucks, Northamptonshire, &c.* than in the chiltern or high dry Grounds; because it will be larger body'd, and commonly exceed all others in bigness, when sown in the best Grounds.

Yellow Lammas has a red Ear and white Straw, and is reckoned the second best.

Pirky Wheat is the most convenient for our chiltern Lands, and will prosper, either in our stiff or gravelly Ground, sells almost as well as Lammas, and is more hardy: this Wheat is the thinnest skin'd of any, and is best sold in Winter, because it will part with its Flower, easier than any other; and therefore the Wheat Buyers had rather buy the Lammas in Summer; for that it is thicker skin'd, and holds its Flower tougher, which in some measure is cured by lying all Winter in the Mow. This Wheat when sown on gravelly Ground, often obtains such a Colour, that it is hard to know it from

from Lammas, and frequently deceives the Buyer; it yields best in Ear, but won't return so much, nor so good Flower as Lammas. It is not so subject to mildew as the two former, and is now more and more sowed, for its returning above one Bushel upon five more than the Lammas, and will prosper on our gravelly and whitish Grounds when the other fails.

Dugdale Wheat has a four-square Ear, is a hardy Wheat, will grow on four Tilth the best of any; and therefore, some say, it's best to sow on a Clover-Lay: but the Wheat-buyers don't care to deal in it, unless in a dear time, because it makes harsh Flower; so that it generally sells for 2 s. in five Bushel cheaper than others, and is mostly used by the Country Bakers. This Wheat, by its long Beard, receives the Mildews, and so escapes that damage which others are subject to; its Fibres keeping the Grain unhurt.

These four sorts are what they chiefly sow in *Hertfordshire*, where they run upon this Grain, as being a County best furnished of any others, with Water-Mills for grinding the same.

Wheat is the properest Grain to follow Clover of any, because it will best bear with four Tilth; and now it's become almost a general practice here to harrow in Wheat
upon

upon only one ploughing up of Clover thus. Plough up one Land at a time, sow that, and fold it; then plough up another, and do the like, and so on till the Field is done, the larger the Fold the better, for the Field will be sooner finish'd; and by that means the Sheep will be gone from thence, before the Wheat is much up. This dressing with the Fold has several conveniencies; it not only enriches the Land, but treads the Grain in, and so preserves it from dying, and makes it stand fast against the Winds. Now as to the proper time of sowing in this manner, some do it from the beginning of *August*, to the end of *October*, according to the nature of the Land, on Clays and Wet Grounds first; and on Gravels, Chalk, and dry Grounds later. Those that have a great deal to do, ought to begin early, because this Method is something tedious; and the quantity on broad Lands should always be more than on Stitches, because on them the Grain is more covered, when the other is more exposed to the Beak and Feet of Fowls; so that it is generally adjusted to three Bushels an Acre on broad Lands, and two Bushels and an half on Stitches. Others again dress with rotten Dung, by putting on about fifteen or twenty Load upon an Acre, immediately after the Wheat is sown and harrowed in; and I take this to be much
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12 *The Practical Farmer : or,*

preferable to the dunging about *Candlemas* for this Reason: The Blade will make its way thro' the Dung, if it be but tolerably spread before it spires ; whereas by laying it on in the Spring, the Blade is crushed down, and so by the heat of the Dung becomes yellow and dies. Others again will foot it quickly after sowing, and some about *Candlemas* : The first, because it helps to destroy the Worm, which often gnaws the Root of the Wheat, even to the almost destruction of a Crop ; and this red small Worm is apt to be more than ordinary in the Ground after sow'd Grasses, and most in that after *Ray* Grass, *St. Foine*, and least after *Clover* ; and that white Ground, Gravels, and light, are most subject to it. About *Berkhamstead* some dare not sow Wheat on Ground that has laid down two years with Clover, for fear of the Worm, and therefore instead of Wheat, sow Oats ; and they sometimes are spoiled by the Worm in their Gravels, and gravelly Loams ; but wet Grounds are not so subject to them. Soot-ing Wheat about *Candlemas* has been an antient Practice ; because by that time it was supposed the danger of great Snows was mostly over, which otherways might wash it too hastily from the Roots of the Grain, and so impoverish it the Summer following.

The Hertfordshire Husbandman. 13

A great Farmer at *Dagnal* lying near *Dunstable*-Down, sowed a thirty-Acre Field with Wheat on one ploughing, after Clover, and dress'd it with Soot about the middle of *November*, saying, he believed forward dressing best, because it killed the Worms before they damaged the Roots of the Wheat: in the next place, it brought the Wheat under such a great head, that it would be as good as half a Crop of Grass, which would be such a Subsistence to his Sheep, that they would return a second dressing by their Dung; but this Method, he said, he dared not practise on any other Field he had, because this was a clean Ground, and did not throw up Weeds like the rest, being a chalky, gravelly Loam. Another old Farmer by him, said, he dared not feed his Wheat down in a cold wet Soil; for that, if *May* should be cold and wet, the Weed would get the start of the Wheat, and so spoil the Crop. And this I have known to be true, and fatal to my next Neighbour, who fed down two of his Wheat Fields bare; the one was dress'd by a Fold directly on the Wheat, as soon as sown on a Clover Lay, the other first fed, and then footed: but the Spring 1730, proving cold and wet, and the Ground being of that Nature too, he had but a poor Crop.

Another

Another way is this ; After Clover has been fed near two Summers, give it one ploughing the middle of *July*, or the beginning of *August* ; the longer the Clover is, when you plough it in, the better ; then let it lie about a Fortnight to rot, and after some Rain has fell to mellow the Ground, harrow in your Wheat : if the Ground lie even, you only need harrow the Wheat in at once ; but if uneven, twice in a place long-ways, and once a-crofs ; and when it is come up, roll it, and not before, because by rolling it too soon, it will fasten the Ground, and hinder some of the Kernels from coming out : Thus rolling Wheat after it is come up, new-moulds it, fastens the Root, and forwards the Growth of the Grain. And about *Harrow the Hill*, in their pebly gravelly Ground, they plough in their second Crop of Clover when it is fit to mow, on which they harrow in their Wheat, and say, they find no dressing like it. And on Gravels and other poor Soils, they commonly sow thicker than on rich Loams, for this Reason, because the Grain does not gather and branch on poor Land as on rich ; so that no more, nor even so much comes up, as what you sow. Likewise in white Grounds they sow three Bushels on an Acre, when brought under a Tith ; because, say they, the Wind often in

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a dry time blows away the Earth from the Roots, and so kills much of the Wheat. Now in case the Clover is eat bare when you plough it up, I take it the best way to harrow in the Wheat immediately, while the Ground is fresh and hollow, lest the Buck Rains (as the Farmers call them) fall fast and harden the Ground, and so make it more unfit to receive the Seed; but here I would be understood, only where the Clover is so eat or mowed, and not where it is ploughed in. And, 'tis certain, that Gravel in particular has a great benefit from Clover, especially when laid down two Years, for in that time it obtains a Crust or Turf, which being turned over to the bottom, lies and nourishes the Wheat, and will not be devoured by the hungry Gravel like other light dressings: then by folding on the same, the Sheep treads and tumbles on it, so as to fasten the Earth and hinder the Worm, and by sowing early, the Root enlarges it self, and the Worm has not so much power to destroy it; then less Seed will do, but later more. And in Gravels I have heard of Wheat sown at *Lady-Day* on a Tilth, was as forward as others at Harvest, and a middling Crop. A Farmer also by me sowed Wheat in Harvest, and about *Michaelmas* following eat it down with Sheep, and folded upon it;
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this proved a great Crop. Again, the same Person sowed Wheat after Clover, that had been mowed upon one ploughing only, and it proved a good Crop; and for so doing I have heard this Reason assigned, that when the Clover is fed by Horses in particular, they will eat the sweet parts of it, and the other that is sour they meddle not with, but stale and dung on the same; so that when Wheat grows on this Ground, it generally comes in Tussocks and uneven, because some parts of the Field are dress'd as aforesaid, and others not: for indeed the Clover by standing till it is fit to mow, gets a-head, which attracts and holds the nitrous Dews that enrich the Ground, cover it, and kill the Weeds; insomuch, that I have often proved it to be the best cleanser of the Ground, and killer of the Thistle, and many other Weeds, of any known thing else. And after this mowing of Clover, your Crop will come even, and the Wheat be all alike, and often produces a good return; especially if folded, footed, or Cart-dung'd at top, with the help of the Clover Roots, which also is a sort of dressing. And the next Neighbour to this Man, on a gravelly Soil, mowed his Clover in one Field, and fed another, by this he proved the mowed Field to return the best Crop of Wheat. But another Farmer said, that if a piece of
Clover

Clover be fed with large Cattle, it will be more hollow than that which is mowed, and therefore better for harrowing in of Wheat on one ploughing. And this I have experienc'd on a gravelly Loam, where nine Horses grazed on about four Acres and an half some time. The Reason I take to be this; that as the Stale and Dung of a Horse is of a hot fiery nature, and the Beast of the largest and heaviest size; they, by their Weight and Agility, so compress the Earth upon their Stale and Dung, that it causes a Fermentation in the Ground, which like Yeast in Dough, swells and hollows it, especially where Horses graze to the last.

Another way is, that of a Farmer at *Penly* that rents three hundred a Year, who a few Years since came out of *Berkshire*; viz. he sows a Field with Peas in Drills, which the Plough makes; and after two several Hoeings, the Ground is pretty well clear'd from Weeds. This fits it for the reception of Wheat the *Michaelmas* following, when he dresses it over with Dung, and either sows it on Stitches, or gives it one ploughing, and harrows in Wheat on broad Land. This way seldom fails of a good Crop, for Wheat loves to follow Peas; and when they are a good Crop, that not only kills the Weeds, but hollows, meliorates and enriches the Ground by their Roots, and

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the nitrous Dews that their Haulm peculiarly contracts, besides the great Cover it affords the Ground. But Dung either ploughed in before the Wheat is sowed or spread, or immediately after, or footed, is perfectly necessary.

Another Method is, after three ploughings, that the Ground is got into a good Tith. In the Morning a Gentleman by me sent to the Kiln for ten Quarters of Stone-Lime, in two Carts, and shot each by it self; then immediately three Men fetch'd Water and slack'd it to a Powder: which as soon as done, the Men took each a pair of Gloves and his Seedcot, and sowed it over the Ground as thin as they could (for it must be sown hot;) this was on about three Acres, which brought the Ground under a Ferment, and about a Week after they sowed the Wheat in Stitches as usual. This is a good way of Manuring on Clays and wet Loams, by reason of the great heat of the Lime in opposition to the cold Ground, and the plenty of Salts with which it abounds. This also sustains and preserves the Wheat under a good head in the Spring, when the cold Chills of Frost and Rain cut off and spoil others.

Another way is, what is often done, as follows: A Farmer having a good Crop of Barley on broad Lands, gave it one ploughing,

ing, and harrowed in Wheat, and dress'd it with Cart-Dung on the top, but he sowed it too thick, even above three Bushel on an Acre, and so had but an indifferent Crop, for it was hopper-ear'd; tho' the same Man told me, had he sowed less Seed, it would have been a good Crop: this was on a Loamy Gravel, and provided it is a dry time when you plough and sow, this way may be successful; but the best way (if you have time enough) is to give it two ploughings, and sow the Wheat on Stitches. This way fastens the Wheat in, whereas Wheat sown on one ploughing after Barley is hazardous, because it is apt to stand loose, and so liable to be hurt by Winds: and there is another inconveniency in this Method; for by running one Crop on the back of another, it is apt to sour the Ground; which his did, and obliged him to chalk it after the Wheat was off, in order to sweeten and hollow the Land.

*Brining and Liming of WHEAT,
BARLEY, &c.*

BRining and Liming of Wheat was first invented for preventing its being smutty in the Ear; and notwithstanding the following various Opinions and Methods are now amongst the Farmers, they still seem to be at a loss to account for the true Cause of the smuttiness of Wheat: but the best Reason I have heard, is from the next Farmer to me, who has been a considerable one these thirty Years; he says, that it is the damaged imperfect light Kernels that produce smutty Ears; and these, as well as other trumpery, swim on the top of the Brine, by stirring the Wheat often about, and so are skim'd off: and what defective Seeds may chance to escape, I presume the Salt and Lime so destroy the smutty part of them, and invigorate the better part, as to hinder any prejudice from them afterwards. And therefore, the usual saying, that if a Man sows smutty Seed, he'll be sure to have Smut again, I am of opinion, is not certain. To prove which, the same Farmer happening to buy a smutty Crop of Wheat as it stood on the Ground, ventured to sow the same for the next Year's Crop, and had as sound Wheat at Harvest as ever he

he had in his Life ; but he observed, that the Seed that produced the smutty Crop, was not brined and skim'd, but that he sowed was.

A Farmer that used to sow about twelve Acres of Ground, bought half a Bushel of Salt, part of which he put Water to, till an Egg swam ; then the Evening before, he put the Wheat that was to be sown on the Morrow (about two Bushels and a Peck) into a Tub to the Brine (in which is a Tap and Tap-Wips) and lets it lie an Hour, and skims the Rubbish off, then draws off the Brine, and lets it lie all Night on the Ground in a broad Heap. The next Morning he limes, and sows the Wheat ; this he says surely prevents all Smut, when liming and staling can't be depended on.

Another makes his Brine not so strong as that above, by a fourth part, lets his Wheat lie in it all Day, and takes it out at Night, which he spreads on the Ground, and limes it next Morning.

A Farmer told me, that they made the Brine that an Egg would swim, and let Wheat lie in it all Night, and sowed it the next Morning ; but the Wheat almost peeled, and there was hardly any at Harvest. I suppose this Brine was made too strong ; for I never understood, that Wheat suffered in this manner by any other than him ; for this is reckoned to be the good sure old

way of managing the Seed, by letting it lie all Night in Brine that will just swim an Egg, and the next Morning to sift Lime over it, and sow it. But one informed me, he committed a great mistake in this way, for having expended the greatest part of his Brine, to make it good on a sudden, he threw in some Chamber-lye, which so flea'd and stript the Skin of his Wheat, that it spoil'd the Crop, and he had not above twenty Ears on half an Acre of Land: This Person says, he never knew Brine alone do this.

One also says, that he only puts Urine on the Seed, about enough to just wet it all, then sifts Lime on it, and sows directly; by this he says, he never has smutty Wheat. He says farther, that some have smutty Wheat, by using old powder'd Lime, instead of Stone Lime; and he is of Opinion, that there is more security in the Lime than the Stale.

Another Farmer of about forty Years Experience, has left off Brining, and follows this way as best: He threw five Bushels of Wheat on the Ground, and then run one large Garden-Pot of black Ditch Water, and as much Urine mix'd together, over the same; then sifted about a Peck of Lime, and mix'd it with the Shovel, and sowed it on about two Acres of Clover-Lay thus: first on the rough Ground as the Plough left it in broad Lands, half the Seed, which
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he harrowed once in a place, then he sowed the other half, and harrowed the same way once in a place; then he harrowed it overthwart or across, twice in a place.

There is a certain Author recommends this: Pour into quick and unslacked Lime, as much Water as sufficeth to make it swim above the Lime, and unto ten Pounds of the said Water poured off, mix one Pound of *Aqua Vitæ*; and in that Liquor steep or soak Wheat or Corn twenty four Hours: which being dried in the Sun, or in the Air, steep again in the said Liquor twenty four Hours more, and do it likewise a third time. Afterwards sow them at great distances one from another, above the distance of a Foot between each Grain; so one Grain will produce thirty, forty, and fifty Ears, and those very fruitful, with the Stalk equalling the Stature of a Man in height.

The next Account is taken out of the *Philosophical Transactions*.

On the 22d of *March* was steep'd,

A Pea, Barley, and Wheat, in *Brimstone* Water.

The same kind in *Allom* Water.

Ditto in old Dissolution of *Sal Tartar*.

Ditto in *Cap. Mort.* of *Sal Armo.* dissolved in Urine.

Ditto in the Dissolution of Salt of Walls.

The same in the Dissolution of *Nitre*.

Ditto in Urine.

24 *The Practical Farmer : or,*

After the steeping them five Days or Nights, he set them in a good Garden Soil, against a Wall full exposed to the Sun, on the 27th of the same Month, after a rainy Night, with a Pea, Wheat, Barley, and Oat unsteep'd.

On the 10th of *April*, the Pea, Barley, and Wheat steep'd in the *Brimstone* Water all were up together.

The Pea in *Allom* Water swell'd, but did not sprout ; but the others steep'd in the same, were above ground.

The Pea in *Solut.* of *Sal Tart.* half came up ; the Wheat scarce sprouted, but the Barley and Oat quite up.

The Grains steep'd in *Cap. Mort.* of *Sal Armoniac* dissolved in Urine were all up together ; as also the others that were steep'd in Solution of Salt of Walls. The Pea and Wheat in the Dissolution of *Nitre* were about half up, the Barley and Oat quite up.

The Barley and Oat steep'd in Urine, were come up, but the Pea and Wheat scarce sprouted.

From whence the Gentleman that first made the Tryal, who was *Monf. de la Prime*, observes, that *Allom* Water is not agreeable to the Nature of Peas, and retards their Growth ; because the Pea unsteep'd was up as soon as any of the other Grains : And that Salt of *Tartar* is not friendly to Peas or Wheat ; but is concordant to the Nature of
Oats

Oats and Barley. He further observes, that the Wheat, Barley, and Oat unsteep'd, were up as soon as any of the rest; so that he concludes, such Brines as he used, rather retarded some of the Grains, steep'd in them, in point of quickness of growth, than brought them forward: but then he remarks, that three Spires of the Barley which he left to grow, at a foot, or two foot distance, increased so exceedingly, that one had 60, another 65, and the other 67 Stalks a-piece from their single Grain or Root, with every one an Ear on, and about 40, or more, Grains a-piece on them.

Digby mentions a Plant of Barley, that by steeping first the Grain in Salt-Petre, dissolved in Water, and keeping the Plant watered with the same kind of Mixture, brought forth 249 Stalks, and above 18000 Grains.

*A prepared Liquor to steep BARLEY,
&c. for SOWING.*

TAKE a quantity of the Grain you are to sow, a Bushel, more or less, and boil it in a Copper (to a Bushel put five Pails-full of Water) till the Grain bursts, and the Water thereby becomes impregnated with the essential Salt of such Grain; strain your Liquor, and give the Corn to the Poultry,

Poultry, that there may be no waste. While the Liquor is hot, put three Pounds of *Nitre*, that it may dissolve, and add four or five Pails-full of Water which drains from the Dunghill, or Urine of any sort. And in this prepared Liquor, steep the Grain about twenty-four Hours. Let the Liquor be four Inches above the Corn in the Fat, because the Corn will swell and imbibe it. Then take the Grain, and let it dry in the Shade, or sift Lime over it, which will dry it sooner, and sow one Third less than usual, and you will assuredly find the benefit by twenty-fold; I having actually tried it with Barley, and had commonly thirty Ears from one Root. The Liquor that is left, will serve again with fresh addition, or is admirable to water a Garden. About three Pounds of *Nitre*, as above, is sufficient for as much as will sow an Acre or more, and what is left is still the stronger by being the ground-work of the next addition of *Nitre*. You must pour your prepared Liquor warm upon the Corn, and stop all as close as you can, for that causes the Salts to be put in Motion. Imbibe the Corn one Evening, and take it out to dry the next, and by Morning it will be fit to sow; and at the same time you may prepare more Corn for the next Day, and so on till the Season is over.

The Excellency of this Receipt is obvious in several Cases. 1. It saves Seed. 2. It
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in some measure supplies the defect of full dressing the Land, by the Seed being full of Riches when sown. 3. It produces a greater quantity than ordinary. Lastly, By this steeping, the Grain will make its way out of the Ground, if Drought should succeed; whereas that sown dry, and especially that which lies nearest the Surface, will continue sometimes till Midsummer, in a dry Summer, before it grows, and thereby often occasions the loss of great Part of the Crop: for when one Part is ripe, the other is green, at Harvest, which was the very Case almost all over the Nation this last Summer 1731; and I was so fortunate as to sow, for the first time, the Barley after this Receipt, which brought my Crop up more even than my Neighbours, to the Admiration of the Beholders, and had more on an Acre than ever I had; I believe I may say, as much again.

A great Farmer by me urines his Wheat but once in three Years; alledging, that as he always sows his own Seed, he thinks it sufficiently often to retrieve it from any degeneracy that may accrue to it, by sowing it naked and unbrined two Years together.

BARLEY.

THIS Grain is much sowed in *Hertfordshire*, and chiefly about *Baldock*, *Hitchin*, *Royston* and *Ware*, by reason of the

28 *The Practical Farmer : or,*

the great conveniency of Water-Carriage from the latter to *London*; and also for the Swell which the Water causes in the Measure. There are but two Sorts generally sown here, that is, the common Barley, and the rath-ripe Barley, which latter commonly is ripe with the Wheat, and equally good with the other; and most of our curious Farmers hereabouts send their Waggon to *Fulham* to buy the same every third Year, it declining its Virtue after twice sowing.

Barley is a Grain that delights in a fine Tilth and a rich Soil, and will do as well with three Bushels on an Acre, on such Ground, as four Bushels on a rough and four Soil. With this Grain many People sow Clover, which generally gets a-head, and keeps down the Barley, even to the loss of sometimes half a Crop, especially in a wet Season. Now the safest way, that I have experienced, is to sow Clover on Barley, about a Fortnight or three Weeks after, and roll it in about twelve or sixteen Pounds to an Acre, according as the Ground is more or less in Heart, and of a Nature for it; for by this Means some part of the severe Weather is past, and the Clover somewhat sheltered from the Frost and Sun. At *Dagnal* a Man that has but one Acre of Land, has sown it seven Years together, and never less than five Quarters and an half of Barley grew

The Hertfordshire Husbandman. 29

grew on the same. Another that folded on his Turnips, had nine Quarters on five Roods of gravelly loamy Ground.

To make Ground ready for Barley, after Wheat, I ploughed the Wheat-Stitch into four thorough'd Lands, presently after Harvest; let it lie all Winter, and in *January* bouted it up: In *March* I bouted it down again, and harrowed it, then ploughed it into broad Lands, and sowed my Barley; this was on a wet Loam, and it proved a Tilth as fine as a Garden, being a dry *March*.

Again, to sow Barley after Turnips, the way that is practised here, is to run a row of Hurdles cross a Field, the out-side of which may feed as many Sheep so fat as your Judgment will allow of; then every Night fold as many of your Store-Sheep on the Turnips, pecked up as they will eat by Morning: this continue till the Field is finished; then give it one ploughing, and harrow in your Barley. By this Method vast Crops have been obtained.

Some give the Ground two Ploughings, after the Turnips are eaten off, as believing it best: In this Case the first should be as shallow as possible, and the second a little deeper, which turns up again the Sheep's Dung for the Barley to root in. But there often happens a great misfortune by sowing Turnips too early, in consequence of which they soon become old; and this obliges the
Farmer

Farmer to eat them off betimes in the Winter: for by the length of time between that and sowing, and the frequent Rains together, much of the quintessence of the Sheep's Dung is lost, and so deceives the Owner's Expectation; so that the best Cure for this latter Misfortune, is to plough the Ground as shallow as may be, as soon as the Turnips are eaten off, and the second when you sow as abovesaid.

A Farmer that sowed his white Ground with Barley, the latter end of *January*, had the best Crop in the Neighbourhood, for that he enjoyed the Rains, when theirs were overtaken with a dry Summer, and Mist. Another sowed his Barley on a Gravel, and lost he believed 60 *l.* by being too late with his Seed, and so missed the Rains, and thereby his Crop. A good time in this County is reckoned the beginning of *March*.

Barley, by some, is sowed to the quantity of five Bushels on an Acre; and, as I heard one say, it ought to be so thick, that only an Awl could just be put between: for this is not like Wheat, which has a long time to gather; but both this and Oats being sown on the Edge of warm Weather, must have head enough to shelter its Root from the too powerful influence of the Sun, or else suffer by Heat and Drought. Which plainly shows the excellency of this new Method of steeping Barley, that causes it to
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get a head in a little time, and powerfully helps it forward even in the most dry Weather: and in a cold wet Time in the Spring, this way is most serviceable, because the saline Particles of the Ingredients being of a warm Nature, enable it much better to withstand those Severities.

Some there are that roll their Barley when they sow it; but that is wrong, for by rolling it after it is up, it is new earthed, and grows the faster. Although too late rolling is justly condemned; because it is apt to break the Blade, when it is too long.

After a Crop of Barley was got off, the Ground (which a little before, had been an Orchard) was ploughed up, and Turnips sowed thereon; which proved an extraordinary good Crop. Others have sown Beans amongst their Barley, in order to keep them up, in case it should be too rank; but this has its inconveniency: for the Beans are seldom so ripe and dry as the Barley when it is mowed, therefore is apt to damp it; so that it must be longer in the Mow before it is thrashed.

Barley is commonly up in a Week after it is sown, and it is a late practice about us to carry it to the Mill, and have it just broke for our Plough-Horses: And it is the opinion of several that have tried it as well as myself, that it is more hearty than Oats. Their Price of grinding at the Water-Mill, at
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Great Barkhamstead, is 3 *d.* per *Busbel*, and take no Toll. The conveniency of this, is, when Barley is about 14 *s.* per Quarter.

Amongst the several Methods that I have practised in dressing of Barley-Ground, I do not approve of laying long Litter, or Dung, on the top of new-sown Barley, on no sort of Ground; for that if dry Weather succeeds, then it lies, heats, and parches the Roots; and if wet, it has not time to wash in and rot, because it lies not a great while; and when the Barley is draft-raked, part of the Dung rakes up with it: so that I conclude, it is best ploughed in with Barley, and there, between the Mold, it will retain the wet, and rot quickly. But I do not disallow it on Wheat, for there it's right, by reason it has a longer time to rot and wash in, and then there is no occasion for the Rake.

Also Pidgeons-Dung, Hens-Dung, and Rabbits-Dung, are harrowed in with the Barley, because it has been proved to be much better than sowing, and leaves them on the top of the Ground, where they will remain if dry Weather succeed; whereas by incorporating them with the Earth and Seed, the latter has a more immediate benefit of their Salts.

OATS.

OATS are a very profitable and necessary Grain in most Parts of *England*; they are the principal Grain Horses affect, and commended for that use above any other, being of an opening nature, and sweet; other Grains being apt to stop, which is injurious to labouring and travelling Horses; although, on the other hand, Oats newly housed and thrashed before they have sweated in the Mow, or be otherwise thoroughly dried, are too laxative. On such Lands, as by reason of the cold, no other Grain will thrive, yet Oats grow there plentifully; as many Places in *Wales* and *Derbyshire* can witness. There is no Ground too rich nor too poor, too hot, nor too cold for them; they speed better than other Grain in a wet Harvest, the Straw and Husks being of so dry a Nature, that although they are housed wet, yet will they not heat in the Mow, nor become mouldy, as other Grains usually do; but they are such a Pealer of the Ground, that I have heard a Gentleman say, who owned a fine Estate in *Bucks*, that he would never suffer an Oat to grow on his Ground, for that very Reason; and of the two, the white Oat is the greater Impoverisher. The best Season for ploughing of Wheat-Stubble up, or other Ground for them, is in *January*;

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mary, and for sowing and harrowing them on the same broad Lands, is in *February* and *March*. The white Oat is the best and heaviest Grain, and has this good Property belonging to it ; that in case your Pea, Bean, or Barley-Crop should miss, then this sort of Oat will often do very well, though sown in *April* and *May*. And for this reason I have known this sort of Oat kept by way of Reserve, in order to sow after the before mentioned, if they should fail. Again, this white Oat is preferable to the other, on account of its large and more spreading Blades, with which they cover and shelter their Roots, and the Ground about them ; so that Clover sown amongst these, has much the better chance of taking the Ground, and becoming a good Crop. The Meal of them makes good Bread, and is much used for that purpose, in many Places, and also good Pottage, and several other Messes, and is in great Request towards *Scotland* and *Wales*. Oaten Malt also makes good Beer. But the black Oat makes the best Oat-meal.

I am informed there is a new sort of Oat growing like unto whole Oat-meal, and is in great Request about *Durham*, where they have been yearly sown above these fifty Years; after they are sown, they come up like Oats, but with a smaller Blade: when they are ripe upon the Ground, they are like Oats, and not easily distinguishable from them ;

them; the greatest difference between them being, that in the thrashing, these came out of the Husks clean, like unto *Dantzick* Rye, which this very much resembles both in shape and bigness; and need not be carried to the Mill, as other Oats, to be made into Oat-meal or Grouts. The Taste of them is more sweet and flashy than Grouts made of common Oats. They are most naturally boiled, as Rice in Milk. An Acre doth not yield so many Bushels of these, as of common Oats, by reason the Grain is small and naked, and so near in measure, that what is wanting in Measure, is supplied in the Value. The Husbandry used about them is the same as with other Oats.

Bullimon is Oats and Pease, or Oats, Peas, and Vetches, or Peas harrowed in together; which produces good Horse-Meat, and being a mixed Grain, the Crop becomes more certain. The Quantity together is about four Bushels on an Acre. Some sow Oats and Beans, which does well, for they are easily separated after being thrashed.

Oats are a Grain that Poultry also love to feed on, and it makes them lay store of Eggs above what other Grain doth. The Land on which Oats is to be sown, needs only one ploughing, into broad Lands, and harrowed in; but in case Clover is to be sown with them, the Ground ought to be brought into a fine Tilth by two or three Ploughings.

36 *The Practical Farmer : or,*

The quantity of Seed should be three Bushels, if Clover is sowed amongst them, and four without it: and I think the best way is to sow the Clover, or other Grass-Seeds, a Fortnight or three Weeks after the Oats; *i. e.* when you roll them; for the benefit is the same with this Grain as with Barley, or Peas. Because by this Method it will come up later than the Oats, which by consequence will keep it under; whereas in a dripping Year I have known the Clover grow so fast, as to keep under the Oats, Barley, or Peas.

BUCK, BRANK, *or* FRENCH-WHEAT,

IS a Grain exceeding advantageous on barren sandy Ground. It is much sown in *Surry*; much less sows an Acre of this Grain than of any other, even one Bushel has been found to be sufficient. It is usually sown as Barley, but later; it is also ripe late, and yields a very great Encrease, and is excellent Food for Swine, Poultry, &c. After it is mow'd, it must lie several Days, till the Stalks be withered, before it be housed, neither is there any danger of the Seed falling from it; nor doth it suffer much by wet.

Buck-Wheat makes a good Lay for Wheat, as any other Grain or Pulse, especially if it be not mowed, but ploughed in. But the
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best way is, when it is in Grass, before it blossom, to feed it with Milch-Cows, who will tread it down, and make an excellent Lay for Wheat. Moreover, poor Cows will give great store of Milk, it happening at that Season when usually other Grasses are burnt up, in a dry hot Summer; so have you a double Advantage by your Buck-Wheat.

A Gentleman in *Sussex* said, he sowed the Buck-Wheat the *May* before he intended to lay down his Land with Lucern, which Buck-Wheat he ploughed in, and the next Year he had such a Crop of Lucern that he was amazed at it. Vetches, and even Turnips, no doubt, sowed with this view, and ploughed in, would do extreamly well. And as *French*-Wheat will grow on the poorest Land you have, a better Piece of Husbandry cannot be; for it is the greatest Improver of poor sandy Ground, and the best Preparation for Lucern-Grass, which loves to be sown on this sort of Ground.

This *French*-Wheat, when sowed to dress the Ground, must have a fine Tilth, and be sown in *May*; and when it is knee-high, about the first of *August*, and in full Bloom, roll it well, then plough it in, in broad Lands. When this is done, there will some appear above Ground, between the Furrows that the Plough did not cover. This must be struck down with an Iron Instrument, like a Paddle or Paring-Shovel, and so let it lie

three Weeks or a Month. In this time it will smok, so as to be seen a great way, like a Dung-hill; and as it is a green dressing, will quickly rot in the Ground. The next thing is to harrow it; then plough and sow Wheat in broad Lands, under thorough, as the Vale-Men do. This Way will dress the Ground for three Years, when Clover, Thatches or Turnips ploughed in, will but for half the time.

It is generally sold at the Seed-Shops, in *London*, for about half a Crown a Bushel; of a triangular Shape, like the Kernel of Beech-Mast, and about half its bigness.

Buck-Wheat either ground and made into Paste, or whole, (the former Way is better) is the best single fatner of Fowl, and with this Food they will lay more Eggs than with any other sort of Grain; Hemp-Seed, as they say, giving an ill flavour to the Flesh of the Bird; but this only upon Report: if it prove otherwise, it would be one great Encouragement to the planting and sowing of Hemp, that the Seed should be of so great use.

Objection. It is said to rot Horses, Cows, and other Beasts, if fed too long on it. Otherways, it is said to be one of the quickest Fatners that is.

Answer. If given for some time constantly, and in large quantities, it may be of ill consequence, and rot the Beast; but this I should

should think might be prevented by giving other Meat amongst it, or sometimes one sort, and sometimes another; as Brewers do by their Grains, mix sometimes Salt with them, to prevent their rotting the Horse; and also by mixing Bran with them.

R Y E,

IS a Grain generally known, and delights in a dry warm Land, and will grow in most sorts of Land, so that the Earth be well tempered and loose; it needeth not so rich a Ground, nor so much Care nor Cost bestowed thereon, as doth the Wheat, only it must be sown in a dry Time, for Rain soon drowns it. They usually say a Shower of Rain will drown it in the Hopper, wet is so great an Enemy to it; therefore dry, gravelly, or warm Land is usually termed Rye-Land, being more proper for that than for any other sort of Grain. It is quick of Growth, soon up after it is sown, and sooner in the Ear, usually in *April*, and also sooner ripe than other Grain; yet, in some Places, it is usual to sow Wheat and Rye mixed together: but the Rye must needs be ripe before the Wheat; neither can I discover where a greater Advantage lies in sowing them together, than in sowing them apart. The principal Season of sowing Rye is in *Autumn*, about *September*, and after,

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according as the Season permits, and the Nature of the Ground requires. And in this Country it is frequently sown at this Time, for the feeding of Sheep early in the Spring.

Rye, its general use is for Bread, either of itself, or mixed with Wheat; it makes Bread moist, and gives it a very pleasant Taste to most Appetites. It is also reported, that it yields great store of Spirits, or *Aqua-vitæ*.

PEAS and BEANS.

OF all Pulses that are sown or propagated, Peas claim the pre-eminence, not only for their general use, both by Sea and Land, both for Man and Horse, but also for the diversity of their Kinds almost for any sort of Land; and for every Season, a different sort of Peas; some are white, some grey, green, &c. not necessary here to be enumerated, every understanding Husbandman knowing what Sorts best thrive with his Land. In a stiff fertile Ground they yield a very considerable Crop, without much frequent Fallowings, as other Grain require, and destroy the Weeds, and fit and prepare the Land for an After-Crop; being an Improver, and not an Impoverisher, of Land, as Husbandmen usually observe. Thus far *Worlidge* has wrote on Peas; but how far short of the true practical Method, will appear by what follows, *viz.*

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Here we sow the Maple-Pea, which is a large Pea of a Hazle Colour, and a sweetish Taste, much loved by the Swine, and several of our Farmers keep wholly to this sort, as finding by it the best Success. They are often sowed on the Wheat-fitch, by straining them in after the Plough, about the first of *March*, and in quantity about four Bushels to an Acre, and I have found them to grow very well on both gravelly and loamy Grounds. Others sow the *Windsor* and Horn Grey-Peas, as finding them to be the most hardy: therefore sow them in *January* and *February*, nay sometimes at *Christmas*, upon your chalky Ground. Others again sow the *Dutch-Admiral-Pea*, which is a large whitterish Pea, and succeeds well, chiefly in moist Ground. But nothing is so much a Friend to the Pea as Chalk; and at *Kensworth*, by *Dunstable*, a few years since, they knew nothing of the Benefit of it as to Peas, till a Farmer from another Place came among them, went to chalking, and kept a great Flock of Sheep at the same time, by which he obtained vast Crops; and his Method is now pursued, for it keeps the Roots dry and warm, and prevents the Ground binding them in; which often is done, especially when great Rains presently succeed their sowing, and that particularly on Gravels; and for that Reason we are obliged to sow the Pea so much the shallower.

A great Farmer by me, mostly gives his Ground two ploughings, if not three, for Peas, and says, he finds this the best way; *i. e.* he first bouted the Wheat-stitch, afterwards back-bouted it, and harrowed down. Upon this Ground he sowed half his Peas, by broad casting, and ploughed them in under thorough. When this was done, he sowed the other half upon the Ground, and harrowed them in. This is allowed to be the surest Way; for if one misses, the other hits. Again, by bringing the Earth into a Tilth, the Ground is loosened to let them out, the Weeds are some killed, and most check'd, and the Peas, thereby growing the faster, overcome them, and keep the Ground moist and hollow, and in a Tilth, against the next Wheat Crop; which often is sown as soon as the Peas are off. And indeed, where there happens to be a good Crop of Peas, there is no fear of a good Crop of Wheat after, if the Ground be but dressed. This Farmer, they say, had about 100 l. with his Wife, and laid it out mostly in chalking the Ground, and, though several years ago, has great Crops every Year.

Some get a forward Crop by sowing the *Essex Reading-Pea*, and felling them in Peascods, and then sow Turnips; after that, Wheat, or Barley: a very good Way, and is more and more in practice about us, on the warm and dry Grounds.

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The Hertfordshire Husbandman. 43

But above all Methods, I know of none that comes up to that made use of by a *Pen-ly* Farmer, who rents about 300*l.* a Year, and was the first that brought the Method into these Parts, from *Berkshire*. The Way I have practised, and got after the Rate of nine Bushel for sowing one of blue Peas in a moist, flat, loamy Ground. First, they plough the Wheat-fitch across, into large Furrows; afterwards, about *Christmas*, they harrow it down; then, in the Spring, they plough it the contrary Way, into broad Lands; and as they plough it, at about two or three Foot distance, a Man follows, and strains in Peas, in Furrows that the Plough makes, which is covered after by the Harrows; so that here is but two ploughings, in all, after Wheat. Then, when the Peas are up, about four Inches, hoe for the first time; and when about ten Inches high, hoe them a second time, which two hoeings are performed here for 2*s.* 6*d.* each time. By this Way your Pea-roots are secured against the Summer Drought, the Ground kept hollow, and in a pure Tilth, and the Weeds so destroyed, that it is ready for Wheat, at the next Season, besides having generally vast Crops when your Neighbours fall short. His Peas are called by the Name of Poplar that he generally sows in the drilling Way, and are of a large Sort. Another, of late, sows Horse-Beans and Horn Grey-Peas mixed

mixed together in Drills, and hoes them; and I am of opinion, that any sort of Pea will best encrease in this fashion.

Horfe-Beans are generally sown about *Candlemas-Day*, either in Stitches or broad Lands, on one ploughing, and harrowed in, and these chiefly on the wettish Loams; and being more hardy than Peas, succeed where Peas will not, and are often sown together, because the Beans will help to keep up the Peas.

Beans are more sown in the Vale of *Aylesbury* than in this our chiltern Country, because their Land being a black clayey Mould, produces vast Crops, which they generally sow for their *Lent* Grain, all under thorough, and harrow down as they do their Wheat: And also for the great convenience they enjoy in subsisting their Sheep in some measure with the Weeds that grow among them, which the Sheep will eat and cull, without prejudice to the Stalk, till they blossom; but the Dolphin-Fly I have known one Year almost destroy them, and another Enemy as bad, is the hairy Bind which so twists about the Stalk, as to hinder it from growing. This Horfe-Bean will not do in Sands, or Gravels, nor in light Grounds. They are also proper to be sown on Land, at the first breaking up, where you intend to sow afterwards other Grain; because they destroy the Weeds, and cause the

the Ground to be hollow, and so fit it for following Crops of other Grain; and are on such Land, in some Parts, set by poor People, which saves Seed, and they come the truer. This sort of Improvement belongs to all Cod-Ware.

The *Citch* and *Vetch*, whereof there are several Sorts, but two of most principal Note, the Winter and the Summer Vetch, though one sown before Winter, and abiding the extremity of the Weather; the other not so hardy, and sown in the Spring; are much sown in some Places, to a very considerable Advantage. They are good, strong and nourishing Food for Cattle, either given in Straw, or without, and are propagated after the manner of Peas.

Tares are not usual in most Places of *England*; but where they are sown, they as much benefit the Land as other Pulses, and are to be preferred for Fodder, and feeding of Pidgeons.

A certain Author affirms, that if Peas be taken and steeped in as much Water as will cover them, till they swell and come, and be so ordered as Barley is for malting, only with this difference, that for this Work, if they sprout twice as much as Barley doth in malting, it is the better; the Peas thus sprouted, if beaten small, which is easily done, they being so tender, put into a Vessel, and stop'd with a Bung and a Rag, as usual,

usual, these will ferment, and after two, three, or four Months, if distilled, will really perform what before was promised; and of one Bushel of Peas may be extracted two Gallons of *Aqua-vitæ*, as strong as Aniseed-Water, usually sold in *London*. And thus a Spirit may be got from Rye, Oats, and such inferior Grain; also Roots, Berries, Seeds, &c. which are not oily. Also that the Spirit, or *Aqua-vitæ*, made out of Grain not dried into Malt, is more pleasant than other; but I confess, I am not a Judge of the certainty hereof. Beans are now more in request in the Chiltern than ever; for in the wet Loam, where Peas generally fail by the Water and Cold, there Beans will better answer. Beans are sown on the Wheat-stitch on only one ploughing; for if the Ground was oftner ploughed, the Bean would be apt to fall; and sometimes they are sown in broad Lands on one ploughing: and my Neighbour had such a Crop, on a Wheat-stitch, on a loamy Gravel, that he was forced to reap and bind them, but his Ground was in very good Heart. Now in the Vale, where there are no Stones, they mow them very close, and after the Mower a Man follows and wads them; but we in the Chiltern cannot mow them so close by reason of the Stones therefore in a dry Year, when the Beans are short, they have the advantage of us. Neither Wet nor Cold hurts us in the Chiltern, a

to our Beans, unless a very severe Frost happens, when by the former, they often suffer in the Vale, because they lie so low to us. Now, besides the hale, hell, or hairy Bind, as some call it, that often spoils both Bean and Pea, both in Chiltern and Vale; there are several others that are fatal or pernicious, as that called here Langley-Beef. This I cannot say will utterly destroy the Pea-Crop, but will so cripple it, as not to be a quarter Value. It comes up thick, and blows like a Sow-Thistle, that when the Peas are mowed, or hooked, the Weed generally disturbs the Workmen with its Flew, or Down, that they are forced to drink much; and what is very particular, this Weed comes perhaps but once in a Man's Life, and sometimes often, so that the Farmers are at a loss to account for it; but it is remarkable, that it never hurts the Bean. Again, another Weed is the Curlock, which when thick, often destroys the Crop of Peas, and this takes them in a Tilth, or not in a Tilth; and some say, it is caused by Seed being mixed among Turnip-Seed: but this hurts not the Bean.

Another is a Weed called by us Cat's-Tail, with a blue Flower. This comes but once in three Years, roots like a Dock, and runs deep, which hurts all Grain it runs amongst, but it is hardly any where except in light, gravelly, chalky Grounds, as about
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Dunstable, &c. Here indeed we have a green Sort, but does little harm.

Beans are said to destroy the Twitch-Grass even of themselves; but I cannot say they are proper to sow Clover amongst, because the Sheep and Lambs, that feed among them, even till the Blossom comes, may possibly pull up the young Clover, and so spoil it; nor may they be sown on a Tilth, for the Reasons aforesaid.

A Farmer sowed five Bushels of Beans amongst his Peas and Thetches, on one ploughing of the Wheat-sitch, in a very dry time; the Peas and Thetches failed, but the Beans stood it, and he had 20 Load, or 100 Bushels on three Acres of Ground. This happened on a loamy Soil.

Winter-Thetches are sown about *Michaelmas*, in warm, light, gravelly Chalk or Sand, and by their great burthen of Haulm and Grain, they so kill the Weeds, and sweeten and hollow the Earth, as to make it a fine Tilth for Wheat; which very much delights to follow these, or Peas. This has encouraged several Farmers to continue the sowing of the Winter-Thetch, as being more successful in this hardy Grain than either in Peas or Beans.

The Fin on the Share of the Plough is of great service, in the sowing of Peas, Thetches, or Beans, because by the help of it, the Ground may be ploughed much the thinner,

thinner, and the Harrows will the easier let out the Peas, Thetches or Beans that are sown under thorough.

And sowing some under thorough and some above, as I said before, is the best way of all, in all sorts of Grounds.

In the Vale they hold it as a Maxim, that if they can get a good crop of Oats, they are sure the next time they sow Lent-grain, to have a good Crop of Beans; which I suppose happens by sowing the ground with different Seed.

GRASSES.

THE vast Improvements that are made by sowing Land with Grass-seeds, doth more and more encourage the use thereof, and especially that of Clover, which daily obtains a singular esteem amongst the Chiltern Farmers; because the late method of harrowing in Grain after it upon only one ploughing, does save a great expence and time, and produce large crops; and the several sorts of Grass are all most requisite to be sown on such Lands as are fit for them: for there are many Farms in this Country that have not any Meadow wet or dry belonging to them, that may by the help of these Grasses be able to make Hay enough of their own, without fetching it at a dear price many miles from home. And many

dry Farms are so improved at this time, that it has reduced the price of Meadow-land in many places; and the value of them has in some places been raised very considerably.

Clover-Grass hath been the name a great while, both for the great improvement it brings by its prodigious burthen, as also for its excellent sweetness both in Grass and Hay, and the riches with which it impregnates the Ground by the Stalk and Root; the former by receiving the nitrous Dews, which descend by them to the Roots and Ground about them; the latter also affords a sort of dressing to the Ground after 'tis ploughed up, and above all saves that great expence which many have been yearly at for weeding their Ground; which is by this Grass entirely got, and also the damage prevented that the Corn generally sustains by the Weeders treading amongst it: so that it may be depended on, nothing better clears the Ground of trumpery and weeds than a good Crop of Clover, as I have often experienced.

The late practice with us is to sow Clover but for one year, and feed it with our Sheep by way of baiting them; that is, about four or five we let them out of the Fold in the Summer-mornings, then feed them on the Common till about nine or ten, when we bait them in the Clover an hour or two, so fold them about twelve, and let them

them out on the Common about three in the Afternoon, and so bait again at night in the Clover. This way may be practised where the Common is nigh, and good Clover to bait them with. Then about a fortnight before *Michaelmas*, on one ploughing we sow our Wheat in Broad-lands; but this way will not do often without Chalking, Limeing or Turneping the Land, or Fallowing, because that Clover lying but one year, fours the Ground more than if it had lain two or three years down, which then rather sweetens and enriches it. Now by chalking the Land it hollows, sweetens, and keeps it dry and warm, and so prevents in some measure the Ground being soured, clung and heavy. And it is certain that the second Summer's Crop is not near so good as the first; but to make it answer, the best way is to dung it, or to dress it with street-dirt, mud, foot, or ashes: this also prepares it the better for the next succeeding Corn-crop, which is also much help'd by the Chalk, especially in wet loamy Land; so that Ground will be a Tilth, and sweeten better by one ploughing, than with two or three, if there had been no Chalk.

Clover is often ploughed in to dress the Land about the beginning of *August*, before it comes to seed, and you may turn in some fatning Cattle to eat the head of it; in this case, about twelve pounds should be

sown on an Acre. The longer the Clover is, the better when ploughed in; or if you will, you may roll it, in order to the more easy ploughing it into the ground; this being green, will soon rot, and after some rain has fell on it, harrow in your Wheat. If the Ground lies even, you need only harrow the Wheat in at once; but if uneven, then harrow the Ground once before you sow, and when sowed, harrow two or three times long-ways, and once across; and if that won't do, harrow twice overthwart: they seldom dress on this; only drive a Flock of Sheep over it, to tread it in.

Again, Clover mowed, according to some opinions, will produce as good or better Crop than that which is fed; the reason assigned is this, because the Cattle that feeds on Clover, always bites the sweet, and leaves the sour part, taking care not to dung or stale where they bite, but on the sour part; so that there when the Corn is up, 'tis generally in Tuffs. Clover, if fed close, is sometimes spoiled by the Cattle's biting through the knot just within the Ground, which hinders its Growth afterwards: nor will a careful Farmer let his Clover be fed late in Winter; so have they the earlier and better Crop the following Spring.

To have a Crop of Clover, take under Peas: The way is to get the Land ploughed
twice

twice or thrice in Winter, so that it may be got into a Tilth by Spring, (for it is mere folly to sow Clover without a fine Tilth.) Then at the same time you sow your Peas on broad Lands, harrow in your Clover twelve pounds on an Acre, and by this means you have this chance, that if you have a great Crop of Peas, perhaps they may smother and kill the Clover; but if a middling or poor Crop, then have you a good Crop of Clover. And this present Year 1731, I had a pretty Crop of both Peas and Grass; the Peas were Horn Grey and Maples, with a few Horse-beans mixed amongst them; and the Grass-seed was six Pounds of Clover, and a Bushel of Trefoil-seed in Husk sowed on an Acre. Clover amongst Barley or Oats must not be sown till after two or three Weeks, that the Corn in that time may get a head, then sow from six to fifteen pounds on an Acre. The finer your Tilth, the less Seed will do; this is an excellent way, because the Barley or Oats will then keep the Clover under, shade its Roots, and prevent the Frost and Sun hurting it, and also the Fly from eating it: whereas if you sow Clover at the same time you sow the Corn, and wet Weather presently succeeds, it's in my opinion ten to one if it does not spoil the Crop of Corn by getting the mastery of it, as it has done many a one for want of knowing this: immediately on the sowing of the

54 *The Practical Farmer: or,*

Clover, roll it in, and it is sufficient. Clover is best sown amongst blue Puffins, or other forward Peas, which being sown late, even in *April*, they do not continue in the Ground long enough to choak the Clover. Clover, if fed the first year with Sheep, will be sure to fail the second year, for they so venom it by their bite, as to hinder its recovery, and thereby give opportunity to the growth of Twitch-Grass and Weeds to supplant it.

Clover is best sown amongst Wheat in *April*, either on the Stitch or broad Lands, for these reasons; first, because this Month is generally attended with Showers, which helps the Clover to take root. Secondly, the Air being warmer than in the preceding Months, the Frosts and cold Weather have not that power to hurt and spoil the young Grass. Thirdly, because the Wheat being now high, and under a quick growth, shelters it the better from the severities of the Weather. To know the true useful Seed of Clover, observe if there be a good quantity of the purple and brown colour'd Seed amongst it; for that shows the Ripeness of the Seed, when the white brighter-colour'd is that which was not come to its full maturity. When it is thorough ripe, and well got in, the Seed will hold good five or six years, as I have known a Farmer experience. Others again will buy half old and half
new

new Seed, to be more sure. It is sown by some in *February* and *March* amongst Peas, Barley, and Oats; but in *April* amongst Wheat, as I said before. If it is sown to feed, it should be thick; if to mow, thin.

Clover for Seed, must be mown the first Crop for Hay, then let the second be mowed for Seed, which will all come even: whereas if the first is fed, there will be Tuffocks left, and the Crop won't be true for Seed. Clover, if sown for a Crop by it self, is more luxuriant than in the former cases; and it may then be cut in some moist, rich Grounds three times in a Summer, and leave a rich Crop for Winter to feed Cattle before the Frost comes, (for that generally cuts it off.) We may judge of the right time for cutting it, by examining when it begins to knot, and then we may surely go to work, if the Weather be good; and the best way of making it Hay with us, is found to be thus: After it is mowed, put it up with the Fork or Rake in little separate parcels, about the bigness of a Bushel, then turn it bottom upwards several times, so that you never separate it till it be carted home; by this means the Leaf is kept on, which otherwise would be mostly lost. And if we let it stand for Seed, we may make it in this manner: It must first stand till the heads are very brown and full ripe, known by rubbing them between your Hands. An Acre is said

to afford two or three Bushels, and is a Seed that is hard to get out by threshing; therefore *March* is the best time for this work, when the dry Winds blow, and should be let into the Barn as much as may be.

Clover is a Plant that will blossom, and bring ripe Seed the same year 'tis sowed. Clover is said to feed as many Cattle on one Acre, as three Acres of natural Grass will do; and it fattens Cattle fast, provided they are shifted. I know a Butcher by me that mowed an Acre and an half twice in one Summer, and had ten Two-Horse Jogs off it. It is also related, that eight Acres has fed twenty plough Horses most part of the Summer; yet notwithstanding these good properties, Clover has been fatal to others in hoveing many a good Cow and Sheep. One Man by me has lost two Cows by it, and a third forced to be stabb'd with a Penknife into the Paunch near the Loin, and just behind the backward Rib; which is the last Remedy, and saved the Cow's life. And I my self lost a very good Cow that was hove'd in the Night. This put me upon enquiry for prevention for the future; and amongst the several Informations, I met with one that has answered my purpose for these six years past; *viz.*

The same day you intend to turn out, first give them as much Hay as they will eat; then directly put them into natural
I Grass,

Grafs, and there feed them till they will eat no longer; forthwith after this turn them into Clover.

By this method, the Cow having as it were glutted herself with two sorts of Meat, is rendred incapable of feeding in the Clover; but as her Belly empties, and her Hunger comes gradually on, she feeds leisurely, and so escapes being burst with Wind, which a hasty belly-full of Clover generally occasions. But here I must be particular. If after this the Drift is long, or that the Cow is kept too long out of the Clover, so that she has time to empty herself, and become hungry; then I say, that this Receipt may become ineffectual, and expose her as if she had never been managed. There are several ways that have been practised when a Cow is hived; as to give her a quart of Butter-milk; another Remedy is to give her immediately some Urine, with a handful of Salt in the same, and drive her about. Another, that driving her hastily will generally do alone: but the last Remedy, as I said before, is, when she is so swell'd as to fall, immediately to stab her.

Others, to prevent it, will, at the first turning in, give a Cow an Egg-shell full of Tar; others a red Herring (the Head and Tail cut off) dipt in Tar. One Farmer throughout the Summer set one to watch the Cows till they had their belly-full,

full, and then brought them out for several Hours.

Another turn'd them in for about half an Hour at first, then an Hour, and so gradually, till they thought the danger was over.

Others say, it is the only way to turn them in upon a short bite, for then they say the Cow can't fill her belly so soon as to hove. As no Ground can be too rich for Clover, so can no one expect a good Crop without the Ground is in good heart; and for that very reason I take Barley Ground to be the best for Clover, as being dressed for that Grain, in particular when Oats, Peas, or other Pulses are sown without.

Clover, I am of opinion, is like other Seeds in the Ground, which being often successfully sown, by consequence must tire it; and this I have heard asserted by an eminent Man, according to the Maxim amongst us, That if Peas are sown twice after Wheat or other Grain, tho' in six years time, there will be no Crop of value; for as change and variety is most natural in the vegetable Kingdom, so it is the Farmer's business to follow Nature in this point. But when Ground by often sowing of Clover, is become clung and sour, the best way is to plough it up the beginning of Winter into four-thorough'd Lands, or otherways, and get it into a fine Tilth the next Summer, and sow it with Turnips. This Method will save the Charge of dressing
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the Land, your Crop more surely take, and the Turnips be more sweet than if the Ground had been dung'd; then let a Crop of Barley follow them.

Clover-Seed being sown in *April* or the beginning of *May* upon the Wheat-ftitch, is by some rolled at the same time, to fasten it; but hereabouts it's generally sown without it: for at this sowing, says an Author, there is no need of covering the Clover-Seed, it being small, and so ready for Vegetation, will find its way into the Ground; as we may observe in many other Seeds of the like nature, which will bury themselves into the Earth they are laid upon, without help.

That six Acres of Clover by cutting and feeding Cattle in Racks, from the middle of *April* to the middle of *October* following, maintained thirteen Cows, ten Oxen, three Horses, and twenty-six Hogs; which after the rate of 1 s. *per* Week for each Kine and Horse, and 2 d. *per* Week for each Hog, comes to upwards of 30 s. a Week, or 40 l. for twenty-six Weeks: the Summer profit then of each Acre is 6 l. 13 s. 4 d. besides the Latter-Math. Forty Pounds weight of Clover-Seed was sowed on four Acres, which at twice mowing brought twelve Loads of Hay, and twenty Bushels of Seed. The first Crop was mowed the 19th of *May*, the After-Pasture, as much as three times the Ground of common Grass.

Also that at another time Clover was mowed twice in a Summer for Seed; but the last time it was best Seed.

Also, that Clover-Seed sowed by itself is better than if sowed with any other Seed or Grain.

On a great Crop of Peas, just before they were hooked, they sowed Clover over them, which being stirred in by the Hook's striking on the same, and the Men's feet, on a very hollow Earth, here became a special Crop; nor did the Severity of the next Winter hurt it.

This Clover-Grass, as well as other Grasses, is a friend both to Landlord and Tenant; as I heard one say who lived in a large Farm, that they could afford to pay more Rent, and yet live better than ever: For the Smith's Bill, Wheeler's Bill, Horse-Meat, Men's Labour and Time are saved by harrowing in Wheat upon one ploughing up of a Clover-Lay. And indeed it is no wonder that the *Aylesbury-Vale* Men about forty Years ago (as I have been told) strove with great might to suppress the sowing of the Grass in the Chiltern or hilly Country, and to that purpose disputed it at Law with those few, who at that time of day made use of it in the contiguous parts of *Hertfordshire*; but the Defendants cast them, by making it appear how great an Enricher it was to their poor Grounds. Now what raised the Envy of the Plaintiffs, was, that they

they apprehended it would sink the Value of their Lands by lowering the price of Corn, Flesh, Butter, &c. Nor are their Lands capable of this great Improver, nor of the Turnip, by reason they are chiefly common Fields, and of such a deep hollow, marly and wettish Nature, that both the one and the other would be mostly destroy'd by the Cattle's stolching; nor will they apple in their rank moist Grounds as with us, but rather run into leaf.

Objection 1. Clover begins to lessen in the esteem of some of our Farmers, on account of that pernicious Quality it has of hoveing Cows and Sheep; and therefore several, as well as my self, have this Year laid our Grounds down with Clover and Trefoil mixed together, which prevents any damage from that quarter. *Object. 2.* It is also not so valuable sown alone as with Trefoil, because both these Grasses are sweeteners of the Ground and killers of Weeds, and are more potent in answering their Ends when mixed than if they were single; the Trefoil being smaller leaved and stalked, and a greater Brancher, fills up those vacancies which otherwise the Clover would miss, and so leaves less room for Twitch Grass and other Weeds to grow. *Object. 3.* That some make Butter and Cheese from Clover-Grass, but neither is so good as from other Grasses;

Grasses; for the Cheese is apt to hove, and the Butter not so sweet.

To this I answer, That Clover has these Inconveniencies with it: But for Horses, Hogs, Hay, or being ploughed in for Dressing, it has its Excellencies; and where there is a thick Crop of it, it will sell on the Ground beyond most other Grasses.

REY-GRASS.

THE Rey-Grass when young, as in the Spring, is proper for the fatning of Horses, and is of very great advantage for milch Cows, in that it causes abundance of Milk, making excellent Butter and Cheese, and is of great service for Ewes and Lambs, or to feed any large Cattle in those early Seasons of the Year, especially if the Spring be warm, and the Wet does not lie too long, and before Clover or other Grasses come in, it being more quick than they: for in hot Weather, such as in the Months of *June*, *July* and *August*, it grows harsh and dry, and is fit for nothing.

As for the Soil; Clay, or any other sour and uncultivated Land, is proper for it, nor doth it take up so much Tillage as other Grass-Seeds do, growing well amongst the most stubborn Clods that lie in the way: on which account, where any Gentleman has any cold Lands, they can't be better

employ'd than in such a way; it being always observable that those Lands which are not fit for Clover, Saint-Foin, Trefoil, or other Grasses, may be much improved by Rey-Grass. It will last some Years, and what is of great moment, the feeding of Cattle is of mighty advantage to it, because it will in the Spring sustain double the Quantity that other Lands will do, Acre for Acre; but then it is of no manner of service in Autumn, except it be a dripping one, or for Hay.

Being sown in Autumn, it will be fit to graze the next Year for Horses and other black Cattle, without danger of making it bleed.

If this Seed be sown on Land entirely devoted to it, and on which in all probability no Corn, at least but little will grow, then two Bushels is the least that can be sowed there.

Upon the whole, tho' Rey-Grass is an Herb proper to be sown upon cold, coarse, austere Ground only, yet I have often been sorry to see it admitted into Lands which are warmer, and consequently of too great a Value for it: for whoever would lay down any Land that is tolerably good, can't do it better than with the common Hay-Seed which comes from the finest upland Meadow, and a proportionable Quantity of Trefoil with it.

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We here commonly sow it mixed with Clover-Seed in the Spring with Barley or Oats, thus: When the Grain has been harrowed in, then sow the Grass-Seed, if Rey-Grass alone, then harrow in two Bushels on an Acre; but if with Clover, then one Bushel harrowed in as before, and about a fortnight after roll six pounds of Clover on an Acre.

Rey-Grass seldom wants any assistance till after it has been sown a Year or two; but when it does, you may allow twenty or thirty Load of the shovelings of Streets, or Earth dug out of the High-way, and mix'd with ten or fifteen Load of Dung, and five or six of Sea-sand, Lime, or Coal-ashes. And this is indeed a solid Improvement for any of the Grasses before or after mention'd. Some mix it with Fowls Dung, which adds very much to the fertility of Grasses.

Objection. Many refuse to sow this Grass on account of its being one of the greatest Sourers of Ground; for by its stringy, tenacious Roots, it lays such strong hold of the Earth, that it thereby becomes clung, heavy and sour. Secondly, It is a Grass very hard to destroy, notwithstanding the Ground is often ploughed.

To this I answer, That in clayey Grounds, or any other, this Grass is most serviceable, because early in the Spring, it may be fed before the Clover or Trefoil comes up, with
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which it is sown; but certainly it is hard to clear the Ground of it. And to do it, I think the best way is to plough up the Ground, and give a Winter's, then a Summer's Tith for two or three Months, and sow Turnips. Gravels are easier clear'd of it then clayey Loams.

TREFOIL.

LAnds naturally kind for Corn, says a modern Author, and unkind for Grass, are undoubtedly kind for Trefoil; and tho' it be much impoverished by long sowing, that it will bear Corn no longer, yet such Land, being sown with Trefoil-seed, will become worth 20 or 30 s. *per* Acre. As for the Soil in which it will grow, experience tells us, that even clayey, stiff Ground, or chalky, rocky, gravelly, or hilly Ground of a very small value, may be improved by this Grass: but if the Land be a Clay, that then it must be laid as dry as you possibly can: That the Pasture for Trefoil is as good and much better than any for Cattle, and especially for Cows; for it will not only cause them to give more Milk in quantity, but also better in quality, and likewise makes Butter and Cheese of a delicate yellow colour: That the Hay thereof is nourishing, and will make Oxen or other Cattle as fat as any other Hay, if it be

made in a good Season, that is, whilst it is full of yellow Blossoms, and not over-dry, (for it is soon made) it does not lose its colour, nor shrink in the making, as Clover-grass does; but is much finer, greener, and in all points better for Cattle than Clover is: That it is particularly good for fatning of Ewes and Lambs, and free from breeding rottenness, which other Pastures are apt to do. And whereas Clover-grass doth daily make sick; and kill many Cattle, this is free from any such danger; and the Cattle are so sensible of it, that they will not willingly feed on the Clover until they have eat the Trefoil to the very Earth, as may be soon seen, if one half of the Field be sown with one, and the other with the other: Therefore if you are resolved to sow Clover, the safest way is to mix one half of Trefoil with it. That (in competition to Clover) Trefoil will endure much the longest, if it stand not for Seed; for that is destructive to the Root, and the Sap is gone that should nourish it, because it must be cut late, and in the heat of Summer. The next year after the Crop of Corn is taken off, you may pasture or mow it, but if it stand till the Seed is ripe, the Hay is spoiled, and the Cattle will not eat it. The time and manner of sowing it, is, when you sow Oats or Barley, which should be done after the following manner: The Ground being sowed
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The Hertfordshire Husbandman. 67

and harrowed in with Corn, then sow the Trefoil-Seed, and harrow it once in a place, and then roll it. Two Bushels, if in the Hull, is often sown on an Acre; but if the Seed is naked and clean, then sow twelve pounds on an Acre, and only roll, and not harrow in: but if mix'd with Clover, then six pounds of each. The proper time of sowing is from the middle of *March* to the latter end of *April*. I sowed this year six pounds of Clover-seed and a Bushel of Trefoil in the Hull on an Acre of Ground, and it cover'd it full thick: This was amongst Barley.

Trefoil must be cut for Hay whilst in blossom; it is soon made, and need not be dried so much as common Hay, or Clover. Oxen are greatly nourished by it green, and by this fodder they will grow fat in a short time. Trefoil is of such advantage to Land that is over-run with Twitch Grass, that as it grows quickly and branches much, it will so overshadow the Couch Grass, that in a little time it will smother it. Again this Grass, no more than Clover, draws not any nourishment from the Earth, which is proper for Corn, as an Author writes; and being ploughed in when we have a mind to sow Corn upon the same Ground, it makes a very good Manure, and prepares the Ground very properly for Corn. This, like Clover ploughed in when almost knee-high, is cal-

led half dressing, as *French* Wheat is whole, because the latter manures the Ground for three years, and Clover and Trefoil but half the time.

This Trefoil has a peculiar quality belonging to it different from all other Grasses that I know of, and what neither Authors in their Books, as I can find, nor Seedsmen in their Shop-Bills, take the least notice of: And as it is of great advantage, I shall be the more particular. This Grass then is sown by itself either naked, or in the Hull, to the quantity aforesaid. Now if the Trefoil is let grown to a good head before you turn in your Cattle, it's a great chance if so much does not escape their Mouths as to feed the Ground; for this sort parts with its Seed sooner and easier than any other.

Again, if it stands to be mown for Seed, then it surely leaves so much Seed behind on the Ground as will feed it next year, and thicker than before. But as there are two ways of preserving its Seed by shedding, so there are as many to hinder it; for mowing it for Hay, and after that feeding it close, prevents its taking the Ground for the next year. The other way is by giving the Ground only one ploughing in broad Lands latterly, and harrowing in Wheat. Again, this is to be remark'd, that the more you plough any Ground, and the finer Tilt you make for Wheat, the surer this Grass comes
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the following year; and by this method it may be continued a great many years, that is, by having Wheat and Grass for Seed or Food alternately; as one does at *Barkhamstead* on a gravelly Ground, to his great profit, who is a Seedsman.

Trefoil is now in great vogue for its several good qualities, and is of late sown with Clover-grass, to prevent its hoveing Cattle.

Object. Notwithstanding what is publickly over and over again writ by some of the learned Gardeners, and others, in their Tracts of Husbandry and Farming, and also in the Seed-Shop Bills, that Clover and Trefoil draw their nourishment from the Earth in such a different mode as not to offend the growth of the Grain among which it grows; I here aver the contrary, and which I can prove by several instances; *viz.* The Clover and Trefoil at first sowing, with the Corn, must in its infancy draw its subsistence in the same manner as the Corn does, and from the very Earth that otherwise would be spent in nourishing the Grain, by reason they both at first take their growth from almost the surface, as they are harrowed in together; and afterwards as the Grass-roots strike their pecked or spreading Roots down, (which sometimes descends to the depth of six or eight Inches) the uppermost Fibres have still their proportion of Suction from the Ground

near the surface; which very Reason, by the help of frequent Rains in the Summer, has occasion'd the loss of vast quantities; nay, I may say near whole Crops of Corn. As a great Farmer at *Studham*, near me, suffered, he protested, the loss of half his Crop of Barley by the Clover's luxuriant Growth. And in *Northchurch* Parish, upon a gravelly Soil, the Farmer mowed his Trefoil for Seed, then ploughed it into broad Lands; after that, hack'd or comb'd it, then sowed it in Stitches. The Wheat thus sowed on a fine Tilth, flourished to admiration; but before the next Harvest, the Trefoil grew so fast, that it crippled the Wheat, and made it hardly worth reaping. And the very Person that ploughed the Ground on which the Wheat-crop was set that year, lives Ploughman at this time with the Duke of *Bridge-water*. And however some may succeed by letting Trefoil grow amongst their Wheat, I am sure they run a great risque of losing their Crop; and where they do succeed, it may be owing to the defectiveness of the Seed, a dry Summer, or that their Ground when sowed with Wheat was clotty and sourish, which impedes as much the growth of this Grass, as a fine Tilth facilitates it. Now, therefore, the surest way to be safe in obtaining this most serviceable Grass, is to sow and harrow it in with Barley in the Hull or Husk, which keeps it
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from taking root longer than if sown naked, by which means the Barley or Oats get the start; or if sown naked, then let it be a fortnight after the Barley is sown, as is before mentioned. But several sow it and harrow it in the Husk with Peas, as I did this year, and it took well: and I am of opinion, it is of such a hardy nature, as not so soon to be smothered by the Pea-haulm, as Clover is.

SAINT-FOIN,

IS an extraordinary Improver of dry, gravelly, sandy, chalky Grounds, even tho' they have been over-run with Heath, Ling, or Fern, or Brakes; for this takes deep root in the Ground, which being large, supports itself in the dryest, hottest Season, and will produce a great burden when there is little Grass to be had elsewhere. The most barren Land will produce this without much manuring, and that should be Soot, about fifteen Bushels on an Acre every third year; some put more, and seldomer; but that is wrong, as being an extreme: and when it has stood twenty or more years, the Ground will produce valuable Crops of Corn. In the sowing this Seed, as well as all other foreign Grasses, it must be observed, that the Ground be brought into a very fine

Tilth, else it will not answer. It is commonly sown amongst Oats or Barley, but the latter is best; and at the same time sow your Soot over the Corn and Grass-Seeds. The quantity of Saint-Foin Seed is at least four Bushels on an Acre, and the Barley three. But this sort of Grass-Seed must be harrowed in at the same time the Corn is harrowed; so that one harrowing will serve both, because the Seed is large, and requires to be well covered. The greatest care that is to be taken, is the not feeding it at all the first Summer, nor very early the next Spring, because it will be apt to bleed itself to death: for the sweetness is such, that it will provoke Cattle to bite into the knot in the Ground, and so spoil it.

LUCERN-GRASS, *otherwise called* MEDIC-CLOVER, SNAIL-TREFOIL, *or* BURGUNDY-FODDER.

THIS Plant is a most valuable Grass for its excellent quick growth and duration, and has raised some of the greatest Improvements in *England*. It is of a succulent or juicy nature; it makes Cows abound in Milk more than any other Fodder, whether they eat it green or dry: Oxen are very speedily fattened by it, and Horses are no less advantaged by feeding on it. Its Crop
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for the most part is double the quantity of Saint-Foin, and may, if it likes the Ground, be mowed three times in a Summer. But let it grow where it will, it may bear two cuttings, the one in *May*, and the other in *August*, and carry a strong Pasture for Winter.

The Soil most proper for it is light Ground, such as Sand, Gravel, or Hazle Mould; or if the Ground be very stiff, then burn the Surface, which is called Denshiring, and by that means the Soil will become fit for it; but it has been tried in stiff Soils and moist Land, and has succeeded very well; this has been done in my neighbourhood on a clayey bottom under the Mould on a cold Hill, and proved well; but on such sort of Ground it should be sown late, as in *April* or *May*.

When we make Hay of it, we must dry it well before we house it, and it should be given to Cows, with Barley or Oat-Straw, like Clover. But certain it is, that sandy, chalky, or gravelly Ground will best agree with this valuable Grass, when it is well till'd; and undoubtedly the richer the Earth, the less Seed will serve, and the more it will fill and increase. Eight or ten pounds will be sufficient on rich Land, but twelve or thirteen on Land which is poorer. On some poor sandy Land that would not bear

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common Grass, there has been prodigious Crops.

Stony Land indeed is without probability of Success, because the Seed being very small, is in course buried in such Ground. The Dressing, is the strewing by hand out of a Seedcot Wood or Coal-Ashes, Sea-sand, Malt-duft, Clay, Peat, Fern, or Brick-kiln Ashes, which will cause a new fermentation in the Ground, if sown with or immediately after the Seed, and cause it to spring up apace; tho', in my opinion, Soot exceeds them all. This Grass is somewhat tender, and may as well be sown in *February* and *March* in a warm dry Soil and Situation, as in *April* and *May* on a clay, wet, or cold Ground. And in case the *Lucern*, when old, should be cut off a little by the cold Weather in the Months before mentioned (which is the only misfortune of it) what can be better for it, than to mow off the dead Grass, and give it a sprinkling of Soot or Ashes? If the nature of the Ground will admit of it, it should be ploughed ten Inches deep, for the Root of this Grass runs like a Dock, a pretty way into the Earth. It should be sown amongst Oats or Barley, and after the very same method as Clover is sowed, not harrowed in, but rolled about a fortnight after the Corn is sowed; and if thick sown, will destroy Weeds to the purpose, and last twenty years. An Acre will
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keep three Horses a year, and fats them in ten or twelve days.

Object. They say it is dangerous turning in Cows to feed on this Grass, because it is apt to hove them.

To this I answer, It is so, for either Cow, Sheep, or Ox; but if the directions are observed, as mentioned in the account of Clover, there is not such great danger. *

PLOUGHING, SOILS, DRESSINGS.

IT is evident, that Earth often digged and skreen'd in a Garden, produces the best Tillage; so is it the principal reason, that ploughing and harrowing of Land makes it the more fruitful; and this by some is called as good as a sorry Dressing: for by this means, the Spirit of the Earth, or the *Sal terræ*, is collected, as also that of the Air and Rain; which several vegetable Salts being put into a condition to act, by the fineness and sweetness of the Earth, are the Life and Nourishment of all things that grow therein; and for the want of these two Qualifications, many Crops have been lost. So that upon the due Knowledge of Ploughing, and the right Practice thereof, depends chiefly the right benefit of Farming. Besides, a light Earth is capacitated to receive the nitrous Dews and celestial Influences, which coagulate and fix on the same; when a heavy, sour, Earth

* For a farther Account of Grass Seeds, see Mr. Switzer's Compendious Method, &c.

Earth misses, and goes without that benefit. And therefore I shall here endeavour to supply in some measure, I believe I may say, what most Authors have been hitherto chiefly wanting in; and the main reason for their omission, I presume, is, their not being acquainted with the practical part of Ploughing, although it is certainly the most necessary Branch of Farming.

Strong clay Grounds can't be too often ploughed and exposed to the Sun and Frost. Gravels, Chalks, Sands, and such light Grounds, are much sooner brought into a Tilth with less Ploughings; for frequent Ploughings in these sort of Grounds are of very ill consequence, because, as we say, they are soon worn out by it: *i. e.* the heavy Rains falling on the Gravels, wash the Mould away, and leave the stony part too naked; and so on the Sands and Chalks, it washes away the best, and leaves the grosser, worser part behind. And therefore 'tis the modern practice to sow these Lands with Clover, Trefoil, Lucern, or other Grasses, which by being laid down one Summer, will in that time obtain a grassy Crust, which the Gravel will feed on some time after; then about a month before *Michaelmas*, or later, give it one ploughing, and harrow in *Pirky* or *Dugdale* Wheat.

But 'tis the Expression of a great Farmer, That as sure as he ploughed such a Lay deep,

deep, so sure he was to lose the greatest part of his Crop. Therefore he ploughs such grassy Crufts in as small narrow Thoroughs as possible, and as shallow as he can, then sows his Wheat, and harrows it in; and if any Grass or Twitch appears, he and his Man used to rake it up, and carry it away.

Wet Grounds that have a clayey bottom are not so proper for this sort of Culture, because the Water, Frost and Winds are apt to chill and kill the Wheat; and this sort of Land being naturally sour, is very apt to run with Twitch-grass and other Weeds, and so choaks the Wheat as to make it a very thin Crop at Harvest. Yet where such wet flat Land can be drained, or well chalked or limed, there allowance must be given; and possibly there then may be good Crops of Wheat succeed, but it must be under such particular advantages: For I have known the Farmers in the Vale, that lie flat and wet, to forbear sowing Wheat, and prefer a Barley Crop, because the former lies and suffers by the Winter's extremities, when the latter only by the Summer.

For this reason, Stitches or Ridges are best to sow Wheat on, because it prevents in some measure the blasting of it: for Wheat is easily overcharged with Water either in Winter or Summer, and they defend it from the extremities of Weather, especially cold

cold Winds; for the more uneven any piece of Land is, the better it bears the violences of Winter: Therefore in the Champain Countries where they do not plough and sow in Ridges, they harrow not their Wheat in, but sow it under thorough, and leave it rough, because it breaks the fleeting Winds. And in imitation of this, the Gardeners now-a-days lay their Gardens shelving, not only the better to shelter their Seeds from the cold Winds, but also to give them the advantage of the Sun: and therefore it is a notion entertain'd here, that Wheat on the broad Land is more apt to strike or blight, than on the Ridge or Stitch.

I have been inform'd, the following Method is made use of in some places to drain Land: If on a flat piece of Ground, they dig down at discretion three or four feet wide at top, and so narrower till they come to the bottom; which Trench being cut to a fall or descent, they at small distances leave shelves on each side from the bottom upwards, perhaps two or three, according to the depth, which are cut on each side in the Earth, then fill the bottom with stones, or beech or bush Faggots, and lay on till within a foot or two of the top; when they throw on the Mould, and plough it, as if no digging had been.

Where such flat and wet Ground is sown with Wheat on one ploughing up of Clover

or Trefoil, a good way is to let a Crop of Turnips follow the next Summer, to sweeten the Ground and kill the twitch and four Grass: and in order to this, I plough the Wheat-fitch down presently after Harvest. This, with some more ploughings, prepares the Ground for any Grain or Grass the next Spring or Summer.

In all Grounds that are infested with Weeds, and where a Fin on the Share can be used; there it will do a great deal of service by cutting off the Heads of the Hog-weeds, bruising and crippling others, and wholly extirpating the smaller sort.

After a Crop of Turnips are eaten off, and you design to sow the Land with Barley, let the first ploughing be as shallow as possible, and the second more deep, then harrow and sow: by this means you have the benefit of the Sheep-dung; but if you plough too deep the first time, you lose part of it.

Plough all sorts of binding Ground, especially Gravels, very shallow, when you sow your Grain; otherwise a great deal of it will not come thorough.

Chalk that is yellow without side, and fat and moist within, is the right, and pays better than Soot or any other Dressing; but hurlocky, stony Chalk does a great deal of harm instead of good, and will lie six or seven years without shattering. And the best way

way to enjoy Chalk, is to put it on a Wheat-stubble or a Barley-stubble, and sow it with Peas on one ploughing for the first time; but before plough it in very shallow, because it naturally descends, and is often lost by indiscreet ploughings. Chalk does most service on wet clayey Grounds, and of late years they chalk their Gravels to keep them from binding. It is said, that Chalk is in its nature cold and dry, will sweeten the Earth, make it hollow, and keep it dry, and thereby fits it for improvement by other Dressings. Small Chalk-stones scratch'd up by the Sheep in Summer, will turn to Flint; therefore Chalk must not be dug in Summer against Winter, because 'twill harden by the Sun and Weather, and not be so good; so that the best time is between *Allhallontide* and *Candlemas* to lay it on.

Horse-Hoeing: This is a pretty, ingenious Contrivance to save the Expence of Men Hoeing, (which generally is 7 s. an Acre in all) if managed accordingly; which cannot be done, unless a right Plough is made use of. The Author of a late Book, I know describes the Invention of one; but a Person near me, committed a Mistake in using the common Wheel-plough of *Hertfordshire*: First, he made two Thoroughts close together, and drill'd in Horse Beans by the Hand; then at eight feet distance he did the same, and so on throughout the Field;

Field; but this did not answer to above half a Crop; for the Wheels kept the Share-Point from coming near enough the Rows of Beans to turn up the Mould on their Roots, and so kill the Weeds; so that they were in a great measure choaked at Harvest. I took a Neighbour with me, and view'd their proceedings more than once, and observed, that our Vale Foot-Plough is proper for this way, provided Wheels are fastned to it; which is a piece of Iron about twelve Inches long with notches: by this you may set the Plough nearer the Rows, or further from them, and so turn up the Earth close to the Stalks, and also all between the Rows. And it is also thought that the Rows of Beans at four feet distance, are better than at eight, because here then will be a double Crop, and the Ground altogether clean'd as well for the next Wheat-Crop, by two or more Horses drawing length-ways in the Foot-Plough. The design of this Practice is to employ the fallow Ground, and get a Crop off it, and at the same time prepare the Land for Wheat the *Michaelmas* following, as well as if no such Crop had been, (for Peas or Beans hurt not the Ground as other Grain does:) by which method you have the Earth every year under Crops, sometimes by this Cod-ware, and sometimes it may be done by foreign Grasses; so that the third Sum-

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mer is here got, which formerly used to be lost, to the great damage of the Farmer.

Lime being a calcined Chalk, abounds with alkalous Salts, and is a great Friend to Vegetation, used in the before-mentioned manner in the account of Wheat. Lime slack'd, and sow'd on a wettish Ground, did a great deal of service in a cold wet Spring, by keeping the Wheat growing, when others yellowed and died. Lime makes Wheat gather, and become more thick. Lime mix'd with Earth and Dung together, is a very excellent Compost for any Land, as likewise is Chalk mix'd with bottoms of Ponds, or parings of Commons, or balks of Fields, and let lie a year, two, or three, being several times well incorporated: This will be shatter'd by the Frost, and become fine Dressing, especially for Grass-Ground. Some will chalk Grass-Ground about *Michaelmas*, saying, it will soon devour and eat it up; that it thickens the Ground, keeps it dry and warm, and kills Moss. Others will chalk over Clover that has lain a year or two, and it will hold longer. A Person harrow'd in slack'd Lime with his Turnip-feed, on a wettish loamy Ground, about forty Bushels to an Acre; this kept the Fly off, when others were eaten up, and had a good Crop; the quantity was two Pounds of Seed on an Acre. The Lime having lain in the Field till the Weather slack'd it on
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an heap, then sowed and harrowed in twice in a place, then the Seed was sown and harrowed once in a place. The black Caterpillar had just taken a new-hoed piece of Turnips, and eaten a few yards square clean up, and would have quickly destroy'd the whole Field; but the Owner throwing some powder'd Lime over, kill'd them all: so that Lime kills Slug, Caterpillar, Fly and Worm, as does Soot, Ashes, Brine, or Chamber-lye.

Stale, or Chamber-lye, if kept a Week, two, or three, will be sufficient Dressing without any thing else, poured on the Wheat-Stitch through a Garden-pot Spout, the Man walking with it in his Hand all the time he sprinkles it on; a little nourishes, but too much kills. This may be done in Winter, even till the Wheat spires, or longer, and will soon recover the salt burning Heat by the Roots being shaded; but on Grass-Ground it should not be put on after *February*, because it's longer coming up before the Root is shaded. Its virtue sometimes may be seen in four or five days after it's put on. Used right, as one said, 'tis the best of Dressing for every thing that grows from the Tree to the Shrub. A Horse-keeper used to take the Stale out of the Hole in the Stable, and throw it on the Wheat-stitch, and it made it so rank, that tho' they cut it several times, yet it became

all Straw at Harvest, and no Corn. I knew a Vine at the back-door of a Publick-House that had a little Bank raised about the Root; in this the Guests frequently piss'd, and it produced more Grapes every Year than any one Vine in these parts. And the like success, in proportion, I find by throwing Stale on the distant Roots of my young Apple and Pear-Trees. I save it in two Kilderkins, which increases its strength by longer keeping.

Dungs. Cow-dung is the worst Dung to endure wet of any other, but kept in cover, and mix'd with short Horse-dung, Ashes and Chamber-lye, is excellent Manure, sowed out of the Seed-cot with the Hand, for any Grass or Grain. Others save this short, by itself, or put it under Fowls. If Dung is to be laid on Wheat or Barley after it is sowed, it is best done immediately, because then the Blade will easily make its way through; but if this is done any thing late, it burns up and yellows the Blade, and rots it. Dung was put on Wheat the 6th of *April* by a negligent Farmer, but did little service. Wheat on other Straw put every night into a Fold on Grass-Ground in Winter, will be trod in by the Sheep, and do service. Another sows Malt-dust on new-sown Barley, and is a good Dressing; and so are any sort of Ashes. But above most is Soot, about twenty Bushels, or more, on an Acre

Acre of Wheat or Barley; if on Wheat, it should not be sown before *Candlemas*, because the cold, long Rains and Snows are apt to wash it in too soon; nor is it safe to sow it much later, lest a Drought succeed, and instead of assisting the Wheat, will help to burn it up, as a great deal did this Summer, 1731. especially on the Gravels and Sands. I think him in the right, that won't put his Dung on the fallow Ground till a little before he sows, because it's apt to breed Weeds, and wasted by the Sun, Rain, and Air. Dungs ought to be well rotted, turn'd and mix'd, before they are laid on the Ground, that the Seeds of Weeds may be spoiled and hindered propagating. The Mud of a Pond not emptied before in thirty Years, was put on Sward, and it being of a greasy tenacious nature, was allowed by the Country-men to be Dressing for the same for seven Years to come; but a gravelly or clay Mud rather preys on than nourishes the Ground. A Person I knew dress'd his sharp Gravels with Coney-clippings, Horn-shavings, Hoofs, &c. which does not benefit the Ground presently. He left his Farm about two years after, when the succeeding Tenant had the chief advantage thereof. Besides, as an ingenious Farmer said, long Horse-litter will answer as well, either ploughed in, or immediately laid on the Wheat or Barley after it is sown. These Gravels being of a hungry nature, will

feed on it, or draw it all in by the next Harvest. This long Horse-litter preserves this sort of Ground from shoaling in frosty Weather; for it being a light loose Earth, is apt to shatter, and leave the Wheat uncovered, as will also the Chalks and Sands. I know a great Farmer that calls Gravels the *Land of Forgetfulness*, as being of a hawkish, voracious Nature, devouring a single Dressing too soon, and then the Crop dwindles and complains; so that where it can be done, the present practice is to fold, and cart-dung on this, as well as Chalk and Sands; and then, as they are kerning Grounds, will return often the best of Crops. Turnips footed about twenty-four hours after they are up, will be entirely secured from the Fly. Sheep-Dressing by the Fold is one of the best of Dungs, and agrees with all sorts of Earth. It's true, that Summer-folding is certainly the best; but when conveniency will allow, I am for Winter also: as they do in some parts of *Surrey* fold none in Summer, only in Winter; this is where they have a Crop on the Ground every year, and where the Earth will allow of it; for their greasy Wool, the Heat of their Bodies, their Dung and Stale will nourish the Ground at all times. And for this purpose I have Racks thatch'd or boarded in the Winter to keep their Straw or Hay dry, and moved daily with their Fold. I know two Farmers

ners have attempted the folding of Hogs with strong Hurdles, but were tired with the Mischiefs they otherways did. One had a Crop of Turnips bitten by Cattle that broke in; the Owner finding they were like to rot, ploughed them in, and had a great Crop of Barley on the same, which enriched the Ground. Some time after, another folded on his Turnips as soon as sown, and had an excellent Crop.

Burnt Clay: With three or four pecks of a Mattock, the whole Ant-hill will come out like a Core. A few Wheel-barrows full of this Earth may be easily fired with the help of a little Brush-wood or Sticks; but care must be taken that vent is not given to the fire, which is done by throwing Earth on where the Smoke comes through; so may you increase it into a round body in the Summer-time, till as big as you please. When you have fired about three Loads, you may put on your Clay, a little at a time with the Shovel, and the fire by degrees will bring a red or other Clay, or Flint-stones, into an Ash or Powder; which certainly is a most excellent Dressing for any Grain or Grass. About forty Bushels sows an Acre by the Hand out of a Seed-cot; and harrowed in with Barley and Grass-Seeds, does vast service. I had it burnt for a half-penny a heap'd single Bushel. Others get six or eight Loads of Clay cut into spits, about as thick as a Brick; let it be pretty

well dried in the Sun, and having made a heap of Furze-faggot, Billets, Coal, or other Combustibles, laid one upon another, about as big as a little Bonfire, in a pyramidal Form, bring the Spits of Clay, and lay them round the same, two or three Spits thick, leaving only room to put in the fire; and then light the same. The Clay by the innate heat of the Wood, &c. within, will soon take fire, and as it advances outwards, still lay on more spits of Clay, placing them in such an order, so that the fire may be pent up within the heap, and never suffered to go out; for if you do that, your labour will be lost, and you must begin again. After you have burnt up your six or eight Loads of Clay, which is a little dry, the heat which is within will be so great, as that it will fire any thing; and then you may lay on the Clay green as it is dug out of the Pit, being always watchful to keep a new addition of it, laying on one after another; but not too fast neither, lest you smother the fire, and put it out that way: this you may enlarge, and spread out at the feet as the heap swells; and if occasion be, there may be stages of Boards laid, on which the Men may stand who place the spits of Clay. This being done, and the fire kept continually in, and watch'd night and day, you will soon have as large a heap as you please for the Improvement of Land; for the larger the heap grows, the easier it is

to burn the Clay. This is a most cheap Dressing, and not only agrees with all sorts of Land and Situations; but also laid about the Roots of young or old Fruit-Trees pretty thick, enlarges, multiplies and accelerates their Fruit; and is proper to sow over all Kitchen-garden Ware.

Hog-Dung is reckoned the best to put on Barley-ground just before sowing, and ploughed in; it is most efficacious taken directly out of the Sty or Yard, and carry'd to the Field. This, as well as Cow-dung, is reckoned a cool Manure; and therefore best suits Gravels or Sands.

Pits are often made use of, to throw in Horse-litter and other Stuff, in order to rot; but this is a mistake, for these Pits rather prevent it. Laying on level Ground, and often turning, furthers it best.

Sand laid on, and mixed with Clay-ground, shortens it, and makes it more fertile, as does Clay with Sand.

Cover over Dungs and Ashes keeps in their Salts, which otherways would be wash'd out by the Rains, and exhausted by the Sun and Air. And under this Cover, crude Earth may be brought and trampled on by Sheep or other Cattle, in the Winter, and so enriched as to become good Manure.

All sorts of Salt Dressings from the Sea, which in some places abounds with plenty of them, as I have seen on the Coasts of *Devon*
and

and *Cornwall*, as their Sea-weed or Ore-weed, which grows at the bottom of the Sea, and is tore up by rough Weather and cast on the next Shore, wherewith they make a Compost for Barley-land; also their Snail-cod from deep Rivers, and Oyfter-shells; which last sort being only Salt congealed into such a form, will, after two or three Years, when the Weather has dissolv'd them, mix with the moist Land, and do a great deal of good for several Years after.

Fowl-Dung challenges the Priority of all other, whether Pidgeons or Hens, a Load of which is reckon'd worth ten of others, and is generally laid on Wheat or Barley, after they are sown, which we call Top-Dressing. But with Barley, I think it is better harrowed in. Others mix it with Sand-mould, Chaff, or Dust, to take off its fiery nature. This Dung laid on the Roots of Fruit-Trees, does wonders; and of no less value is it on Asparagus-Beds. Goose-Dung or any other Fowl-Dung is excellent; but more, if mix'd with cooling Earths, and let lie to rot and putrify under Cover. This Cover is most serviceable to feed Sheep or other Cattle under in Winter, whereby they make their Dungs go abundantly further, especially if mix'd with Straw or Earths. In *Holland* they say they save their Cow-Urine as their Dung; for Urine of Beasts as well as Man's, is a great fatner of the Earth.

Earth. Human Ordure is a rich Soil, if mix'd with Straw expos'd to the Weather, and let lie to rot. *Ashes* of Coal are esteem'd much beyond Wood-Ashes, and are sold for 4 *d.* per Bushel thirty miles from *London*. Wood-Ashes are next, and both produce Honeyfuckle Grass in Meadows in abundance, if laid on about *Christmas*, forty Bushels on an Acre. I have chiefly by their help cured several Fields of Moss, to which they are an utter Enemy; and the sure way to make them efficacious, is to put eighty Bushels on an Acre, as I have done. But Ground should not be dress'd twice together with them, but once with Dung, and the next with Ashes. Ashes made from Straw, is the worst sort of all. *Soap-Ashes* are of great worth on plough'd Ground or Meadow, laid on the beginning of Winter, that the Rains may wash them in. Of *Common Salt*, a Bushel was sowed on a patch of barren Ground, which remained a fresh and green Swarth a long time after. And now the Duty is taken off, I don't know but it may answer on Land either sown by the Hand alone, or mix'd with Sand-mould Ashes or Fowl-Dungs. *Rags*, for their warm nature, chopt small, and sowed and ploughed in warm light Ground, will do great service. Also Hair of Hogs, and from the Hides of other Beasts, does good, thinly laid on the Ground; as do Coney-clippings and Hoofs chopt

chopt small, benefit Gravels vastly, by their long duration in this hungry Soil. Grounds of Barrels, and Blood dug in at the Roots of Trees, are great enrichers, as is any sort of Carrion. All these Dungs are made more improvable by mixing and digesting together under cover, than if laid on directly new: for certainly one Load of rotten Dung is worth treble the quantity of new hollow and unrotted Dung. And our common way is to draw out the Yard Horse-litter and Dungs in the Spring after the Lent-Grain is sown, and put into a Clamp, which covered on the Top and Sides with parings of Earth, will prevent the Sun and Wind attracting and driving from it much of its virtue: for the better cured your Dung is, the better will be the Crop; and an increase in your Crop will make an increase of your Dung, and so *ad infinitum*. On the contrary, a decay in the Dung creates a decay in the Crop, from whence arises the Ruin of Farmers and Landlords.

White Sand is only fit for Fir, or Pine-Trees. *Yellow Sand* something better will bear Buck-Wheat; the Haulm whereof being ploughed in, will be a great Dressing for other Wheat, as before directed. It is also a great Preparation for Turnips, Peas, or Carrots; as also for Potatoes, if it is not too wet. Lucern does excellently well in this Soil. The wet Sands will do for Cow-Grass,
or

or white Clover and Rey-grafs mix'd together, will be a lasting Crop: fix pounds of Clover and one Bushel of Rey-grafs Seed sow an Acre. If too wet, Alders, Arbeles, or Sallows will soon pay well. These, as well as black Sands, are excellent Manure for clay Grounds.

Gravels, if fresh and in heart, will bear good Peas; also sweet Turnips, but small. This Ground is also good for Flax; then let Buck-wheat follow; and after, Oats: and where Dungs are scarce, an Author says, this method will supply. In *September*, mow Fern; or, if that can't be had, young Furze: lay it a foot thick on the Ridge you intend to plant Potatoes upon; cover them at the bottom of the Furrow, where the Plough doth not come, with Virgin-Earth half a foot thick all over, and so let it lie till the first or middle of *March*, then dibble in the Potatoes about nine Inches asunder, all in Rows over the bed; and when in the second Leaf, cover them with Mould an Inch thick, which will destroy the Weeds, and make them very productive. All these Ridges being made fat and mellow with the Stalks, the next Year will bring excellent Grain, and for two or three Years together.

The *Sandy Loam* is one of the best Soils for Corn in *England*, and indeed for any thing else, where it happens to be deep enough; as six or seven Inches, 'tis admir'd
for

for Carrots, Parsnips, or Turnips. If this Soil lies shallow, sow it with Lucern-grass or Trefoil. Loam is not of such a hard Texture of Parts as to resist the Roots of any Plant like Clay, or receive them too soon like Sand; both which are faults in Soil: for considering the divers sorts of Plants we must cultivate, as well the tender-rooted, as the hard-rooted, we must have light Soil for the first, and a strong is more proper for the last. But this being somewhat less free than the Sand, and less tenacious than the Clay, all Plants will agree well enough with it, and every sort live an easy life therein, or make their way like the middling People in a Nation, by slow and sure means; while the hot-headed, like Sand, are too speedily overthrown in their attempts; and the too grave, like Clay, are never of any use till they are stirred up. Where the Loam is too wet, and can't be drained, it will bear Hemp. In this Soil the everlasting Pea will grow: It affords excellent Fodder for Cattle, and may be cut three times a Summer. This Soil, with the help of the cleanings of Ponds or Ditches, will bear good Hops: And it requires the least Manure of any other.

Marl is accounted one of the best Improvers of Land, but not of itself to be good for any thing; yet, if People knew better what Marl was, they would find it upon the Surface, as well as in Pits, as it
may

may be seen in many places of several colours. When 'tis yellow, some call it Loam; when 'tis white, 'tis called Chalk; and when 'tis blue, 'tis a blue Marly Ground: but when we dig for it, 'tis all Marl; for there are Marl-Pits common of all these sorts. But if they are dug deep in the Ground, they must have time to lie above it, and imbibe the Air before they are made use of. After this, 'tis either broken again by flinging into the Cart, or by spreading or ploughing, so that the parts are more capable to receive the Air. For if we take Marl fresh out of the Pit, and sow the Seeds most familiar to it, they will not grow upon it; but let it remain some time in the Air to mellow, it will bring any Seed to perfection. With this notice, any one may know what I mean, *i. e.* Marl is a proper Soil for any Plant, when it has had Air enough to mellow it, and is deep enough to receive the Roots. According to this Notion is the Mud of Ditches or Ponds more or less better'd, which certainly is much improved when divested of its crude raw quality; therefore 'tis surely good Husbandry to mix it with Chalk, Lime, Sand, Litter, Horse-dung or Ashes, and being more than once turned and well mixed, will sooner incorporate with the Earth it is to dress, and thereby become much more fertile. Marl, as well as any other free or open Earth which is taken
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under the Turf, and below the Surface, as it is supposed not to have borne any Crop that has not in the least been divested of any natural power, is judged to be that which the Reverend Mr. *Lawrence* calls Virgin-Earth; which, if of the best sort, is full of Riches, and of the greatest Production of any Earth whatsoever. This is that which most plentifully abounds with *Sal Terræ* or the *Spiritus Mundi*, by reason of its being covered by the Turf, and so defended against the Exhalations of the Sun and Air; as are bottoms of Cellars, Stables, Barns, &c. and in some measure are Woods: which makes that sort of Earth so extraordinary prolifick when it is sowed with Grain, after the Wood is stocked up. And all Cover upon the Ground conduces to the conservation and increase of this Spirit; for which reason, Sheep-folding all the Winter under Cover, in my opinion, would be of great importance to the Ground, and little behind that of Summer. I will suppose it to be performed in this manner, to answer the purpose:

For forty Sheep place three Hurdles on every side, so that twenty-seven feet square should be so taken in; let there be a Ruser or Pole of that length, each end resting on another, (by a Swivel) of about eight feet high; which should likewise have a Brace at each end, to help the better supporting the

the long Pole, and a Foot to support that, and to make them thereby easier to remove each night. Across this long Pole a Tarpaulin or other thin Cloth may be laid on two or three Ropes to bear it, which should be tack'd to the Hurdles on the sides, and which should be drawn with Straw-bands to keep out the Weather. Under this, or some such Contrivance, the Sheep would feed their Meat dry out of the Rack, and which by one Man may be shifted each night they are folded; and by this Method the Sheeps Dung and Stale will become more fertile by the Cover of the Straw or Hay that they pull under their feet. So does Snow enrich the Earth, as is apparent to vulgar Observation, not only by covering the Earth to preserve its Spirits in itself, but by the nitrous Spirit it leaves in the Earth after its solution. And for this very Reason does stony Ground produce such good Crops of Corn, which has been prov'd by taking the stones away, and the Corn has not proved so well. That this Spirit of the Earth hath in it a sensible Heat as well as Fertility, we may perceive by Springs in great Frosts, when the Pores of the Earth are shut, the Body from whence these Springs flow is warm. On the contrary, when the Pores are open, and this Spirit wasted and transformed into Vegetables, Animals, &c. and exhausted by the Heat of the Sun; then is the Body in-

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ternally

ternally cold, as we sensibly perceive by the Waters in Wells in the Summer-time.

By the true Knowledge of this, a Gate is opened to propagate, mature, or advance the Growth or Worth of any Tree, Plant, Grain, Fruit, or Herb, to the highest pitch Nature admits of. And, as a learned Author observes, this Globe of the Earth that affords unto us the Substance, not only of ourselves, but of all other Creatures sublunary, is impregnated with a Spirit most subtile and ethereal; which the Original or Father of Nature has placed in this World, as the Instrument of Life and Motion of every thing. The Spirit is that which incessantly administers to every Animal its Generation, Life, Growth and Motion, to every Vegetable its Original and Vegetation: It is a Vehicle that carries with it the sulphureous and saline parts, whereof the Matter, Substance, or Body of all Vegetables and Animals are formed and composed. It is the Operator or Workman, that transmutes by its active Heat the sulphureous and saline Parts of the Earth or Water into that variety of Objects we daily behold or enjoy. It continually perspires through the Pores of the Earth, carrying with it the sulphureous and saline Part, the only Treasure the Farmer seeks for; as hath been by some ingenious Artists mechanically proved, by receiving the same between the Spring and Autumn in an Alembick or Still-Head, where

where it hath condensed and copiously distilled into a Receiver at that Season of the Year; the Earth then more liberally affording it, than in the Winter-Season. Which spirituous Liquor so received, is not a Treasure to be slighted or neglected, carrying with it the only Matter of Vegetation; as the same Artist affirmed, that having placed the same under a Melon-glass near some Vegetable, it was thereby wholly attracted externally, and converted into that Vegetable. It is easily obtained, and that in great quantities, by such who think not a little time and labour lost, to search into the Mysteries of Nature. But whether we obtain it singly, or simply, or not, this we know, it is to be received by placing the more natural Receptacles, the Seeds, Plants, and Trees, in the Earth; which gives it us transmuted into such Forms and Substances, as are most desired and necessary. Water contains in it the more spirituous or aqueous Part; Plants, Flowers, and Soils, more of the sulphureous; and Barks of Trees, Blood of Animals, and several Minerals, more of the saline: which three Qualities are more or less in all things. How soon will Horse-hairs receive life, lying in Rain-water but a few days in the heat of the Sun, in the Spring-time? whereof many may be seen in the High-ways after Rain in the Month of

May, very nimble and quick, that had not yet lost their Shape of a Horse-hair.

Neither is the more sulphureous Part capable of yielding Vegetables, being of too hot and pungent a nature, as the Dung of Animals that eject no Urine, *viz.* the Volatiles, unless commixed or allayed with some other Matter abounding with the other Principles, or that it loses its too fiery, destructive nature by being exposed to the Sun and Air until it be evaporated; then will it emit several Vegetables, the Growth of which will be accelerated and brought forward by the assistance of Rain or other Water, which has in it a portion of this Spirit of the World; and by the help of Water the Earth is qualified better for its perspiration. That this Subject is the very Essence of Vegetables, and that from it they receive their Substance, and not from Water only, is evident in such places where Vegetables are not permitted to grow, and where it cannot vapour away, nor is exhaled by the Sun or Air, as under Buildings, Barns, Stables, Pidgeon-houses, as I said before, where it condenses into Nitre or Salt-petre, the only fruitful Salt, (tho' improperly call'd so;) not generated, as some fondly conceive, from any casual Moisture, as Urine in Stables, &c. though 'tis augmented and increased thereby; but merely from the Spirit of the World. Lands therefore resting from the Plough or Spade are
much

much enriched only by the increase of this Subject, and this is become an ordinary way of Improvement; witness our several Lays of natural and sowed Grasses, which return such profitable Crops of Corn on the first sowing after they are broke up. This Essence is in all Ashes, which otherways may be called the fixed Salt, caused by calcination, as the Lye or Lee of Ashes may be boiled till a Salt is found at the bottom of the Kettle or Copper; which indeed is the true vegetable Salt, and is in all Lime, burnt Earth, or Clays, &c.

Common crude or single Salt, if strew'd on the Ground, is thought by some not to improve, but corrode and burn it; but they say, Lime betters it: yet they agree in this, that the coupling of these male and female Salts makes a high improvement. Indeed, they do not produce a long Grass for the Scythe, but for Pasture; and it will be so thick, short and sweet, as to grow all Winter; nor are their highest Grounds parched in the hottest Summer, by reason of the Honeyfuckle-head which shades its Roots. And if the Sea or common Salt is too lusty and active in itself, the Lime has a more balsamick and gentle Salt; which being directly joined and mix'd with the other, is thereby invigorated, and becomes more powerful.

CLAYS.

THE White Clay, as an Author observes, is call'd in many places soft Chalk; it will bring very good Corn, by being well ploughed and manured with Fold and Dung-cart, or with black Sand or heathy Ground, or Turf from low Grounds, or Fern mixed and rotted with drift Sand. It will bear, after the Crop is off, the *Flanders* Spurry, which is frequently sown to fatten Cattle, and cause good store of Milk; it is also a great fatner of Fowl, and will make them lay great store of Eggs early in the Year. This Soil, says he, will afterwards bring a good Crop of Lentils, and also good *Dutch* Clover.

But notwithstanding what he affirms, I know where they could never rightly obtain a full Crop of Clover in the Chalky Ground, which obliged them to sow Trefoil; this indeed succeeds to their great profit for Sheep and Cows, when no other Grass (as they know of) will grow to any purpose there. It frequently happens that the Chalky Grounds near *Ivinghoe*, about two miles from me, bear sometimes eight Loads of Wheat on an Acre, by their double Dressings; which of late has encouraged them to plough up the sides of great Hills to come at the dry chalky Ground. Barley,
Oats,

Oats, and Peas, by this means will be vast Crops, especially in a wet Summer, not inferior to their rich, black Vale-Soils. But this Soil is not without some Inconveniences attending it; as that in the Winter by the Frosts it is apt to shoal, and by the Air blown, and by the Rain wash'd away from the Roots of the Corn, so as to leave it naked, and thereby kills a great part of it. To prevent this, they roll it both forward and across the Stitches, or broad Lands; and likewise fold on it sometimes after sowing.

The reddish Clays, and indeed all others, are best for Wheat; but the red Clay in particular, will not answer in Lent-Grain, without the help of Chalk or Sand.

A Person ordered his Servant to plough up the Wheat-stitch of this sort of Ground, in order to get it into a Tilth for Barley the next Spring, and said he would dress it very well with Cart-dung. The Ploughman's Answer was, that if he did so, or double-dress it, the Ground would not recover it in ten years: for this Clay-ground will not admit of cross Cropping, without the help of Chalk, which sweetens it, and keeps it light; when otherways it will become sour and clotty, and bear nothing to the purpose. But Gravels, Sands, and dry Chalks, if they are dress'd well, and got into a fine Tilth, will bear cross Cropping, even every Year, without chalking, but better with.

Red or Yellow Clay. This Soil is commonly called the best Wheat-Land, and for Clover; but Lent-Grain and most other Grass-Seeds do not prosper to any great account, except the *Poland* Oat, which I have been forced to reap off such Soil. Woad, they say, will bring valuable Crops on this sort of Earth. Turnips will here grow to a great bigness. This sort of Ground is as much mended by gritty Sand, as Sand is by Clay. And where two Neighbours exchanged Soils with each other, their barren Grounds were made quickly fertile, even from 1 *l.* an Acre to 40 *s.* The first Year after thus mixing the Ground, they set Beans on two ploughings, and had a very good Crop; directly on that, they sow'd Turnips, and fed Sheep. In the next Spring following, they ploughed and sowed Bullamon, which is Peas and Oats, and brought a great Crop; since that, it has borne very good Wheat. Upon this sort of Clay, Ash, Oak, Beech, Pear-Tree, Apple-Tree, Cherry-Tree and Fir will grow prosperously, as will Walnuts and Beech on the Chalks.

This sort of Ground is very apt to be sour, and run with Twitch-Grass; therefore good Ploughings are best, especially by turning it up in sharp Bouts for the Frost to shoal, and the Sun to mellow. On the clayey Loams, the former practice of sowing naked Clover is much laid aside, because single
Clover

Clover is apt to give room to the Twitch-Grafs to grow among it; nor is it of itself so great a sweetner to the Earth, as when mix'd and sowed with Trefoil; then it is of more potency to kill Weeds, by means of their great spreading Cover. When the Dung is laid on in *March* or *April*, and the Weather will permit, plough it in not above three Inches deep; and when it begins to dry, give it another ploughing an Inch or two deeper, which will mix the Dung or Manure laid upon it before the first Ploughing, and so make an extraordinary reduction of the stiffness of the Clay: after this, it may produce a great Crop of Turnips. Some commend this Soil for the planting it with Pear-stocks, and so let them grow in the manner of Coppice-Wood; for that it will prosper so well, that at five or six Years end it may be cut for Fences, Stakes, Implements, and Fire-Wood.

BEASTS.

COWS are reckon'd to pay about 4 *l.* a year clear profit by the Vale Graziers, either by suckling Calves for the Butchers, or by making Butter and Cheese, or by fattening the Beast for the Butcher. 'Tis true, there have been some Cows that paid 5 *l.* or more; but one with another, this is the common computation: but certain it is, that

that no one knows what a Cow will pay, unless she has her constant bellyfull of requisite Meat. The Gentleman, in Mr. *Bradley's* monthly Book for *May*, says, that a Cow will give three Gallons of Milk a day throughout the Year, provided you keep her changed for a new milch'd one, when she begins to fail, and then will return about 10 *d.* a day, in all 15 *l.* 14 *s.* 2 *d.* a year. I agree with him, it may answer in some parts of *England*; but what must be the Discount in changing? I have often experienced, that if I give 5 *l.* 10 *s.* for a Cow and a Calf; when she is dry, 55 *s.* or 3 *l.* is a good price for her. So that if a Cow was to be changed every ninety days, there will be, I believe, a Draw-back proportionable to my Calculation of 4 or 5 *l.* a year. Therefore I rather agree with his Opponent's Account, which amounts to 5 *l.* a year; *viz.* a Cow for the first ninety days will yield three Gallons of Milk; for ninety more, one Gallon; for ninety more, scarce one quarter of a Gallon; and for ninety more, she is dry: Thus in a Year a Cow may yield 384 Gallons of Milk, which will make two Hundreds and a half of Raw-Milk Cheese and a Hundred of Whey-Butter, besides Whey for Swine; or else two Hundreds of Butter, and one Hundred of Skim-Milk Cheese, besides Whey as aforefaid for drink to the People, and food for Swine: by this

account, the profit of a Cow's Milk a year may be about 5 *l.* Then for making and selling Veal, I have suckled six Cows at a time, and been engaged in the Method several Years, and could never find a Cow pay above 4 or 5 *l.* a year this way; for I reckon she will suckle three Calves besides her own, and what overplus happens in a year will only supply what she borrow'd from other Cows to help her in fatning the four Calves. I have also try'd what I could get by suckling Calves at 2 *s.* 6 *d.* *per* Week in the Summer, and 3 *s.* *per* Week in the Winter, for the Butcher; he finding the Calf; but found myself no better off than the former way: for in this case he would buy in larger Calves than ordinary, on purpose to have his pennyworths of Milk. Nor will this pay and defray in the dead of Winter in any of the foregoing cases; for then a Cow will nearly, if not quite, eat 200 of Upland-Meadow Hay in a Week, which, twenty-seven Miles distant from *London*, we sell for 4 *s.* But the case is alter'd in the Vales and Marshes, where by the coarseness of their Hay, or the remoteness of their Market, they can't make so much any other way as by suckling; or where they come at plenty of Grains, which is a great breeder of Milk, but causes a swift rot in a Cow, without a plenty of Hay with them. Malt-Dust is a very good thing to promote Milk, and
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is beneficial where Grains can't be had; a double Bushel is generally sold for 12 *d.* and is used thus: To one Cow give a double handful in a tub, pouring boiling Water on it, and so three times a day; this will make the Water in a little time like a strong Wort, and will nourish much. Some Cows will take it directly, others must be fasted to it before they will touch it; but when once tasted, they will devour it greedily. Raw Turnips, chopt or whole, are given by some; others will boil them to mash, and give them with Bran mix'd.

Calves, the first Week, are allowed not their fill, but afterwards as much as they will suck, because in the beginning they are apt to scour, if they have too much plenty; and all the time we give them powder'd Chalk in a Trough, besides great pieces hung up by them to lick at pleasure, in order to whiten their Flesh, and make them suck, and keep them from being laxative; and if then they should scour (which hinders their fatting) we give them some Syrup of Sloes mix'd with Flour, and put down their Throat by way of Cram, with a little Milk to wash it down. Many cram them besides suckling, to make Milk go the further, by mixing Wheat or Barley-flour with Milk, and dipping the Crams in Milk when you put 'em down their Throat; others make use of ground Madder; others black Pepper

Pepper in Urine, to cause a drought, that they may suck the more; and keep them in the dark, except when they suck, that they may be induced to sleep more than ordinarily, which, with bleeding often, helps them to fat the sooner. The Butchers, at the end of the first fortnight, cut a piece off the Tail; at the next fortnight's end, they bleed them in the Neck; at six Weeks they do the same, and so on every fortnight; it whitens their Flesh, and makes them fatter with less Milk. We give them Wheat-straw twice a day on a Layer of Faggots to keep them dry; but in *Middlesex*, where it is not so plenty, they make holes in Planks that lie with a descent.

A Heifer will spring about three Months before she calves, but a seven Year-old Cow only three Weeks; so that to know if a Heifer is in Calf in that time, you may draw her Dugs, and if Milk or Corruption appears, she is in Calf. The Country-maids commonly observe to dry a Cow of a Sunday Morning, and then she will always calve in the day-time, as they say.

A Cow in middling case that is fed with Straw in the Winter, need not have Hay above a Month before she calves, for that she will give more Milk than if she had it longer; because the fatter the Cow, the less Milk; and yet if too poor, it is dangerous, lest,

left, as we call it, she falls in calving: and if the Season will permit, it is best to let a Cow calve in the Field or Yard, that she may have room; nor is it so proper to house her one night, if the Weather is good, because the Calf will be apt to butt the Bag, and so cause it to be snarl'd and hard: and therefore we commonly hold the Calf in a Collar and string.

When a Cow is bulled, as soon as it can be done when she comes home, throw a pail of Water on her Udder behind, and keep her up that night from any other, because she will be apt to ride them, and so miss her bulling.

If you would fat a Cow that calved in the Spring-time, dry her about the 10th of *August*, and then she will go near to fat with the After-pasture. You may let her take Bull, or not, it is of no great consequence; but suckling fatigues Cows more than suckling and milking, and is apt to hinder their bulling; but both impede their fattening. And if when a Cow is dried, her Udder gangrenes, as it often happens, the only quick cure is to cut off her Dugs, and immediately drive her about; then, after she has bled heartily, anoint them with Hog's Lard, and she will do well: but this must only be done where the Cow is to be fatted directly on the same.

Some Cows will continue in a good milking state till ten years old; but after that, decline.

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The Hertfordshire Husbandman. III

As soon as she has calved, throw a handful of Salt on each side of the Calf, which the Cow will swallow by licking it; this will cause her to glean very speedily. I know a Farmer that gives a cleansing Drink to the Cow presently after calving, as believing the Milk will not be right wholesome without it. Others, for cheapness sake, give a horn of Stale to her, and a day or two after, another; this, they say, will keep the Garget out of her Bag.

For a Cow that pisses Blood.

Take Oak, shave off the outer Bark, and boil it in Spring-water till it be red; also Comfrey, Shepherd's-purse, Plantain, Sage, green Hemp or Nettles, of each a good Handfull; and boil them with the Bark, strain it, and put a good Handfull of Salt in the Water, also some Allum, Bole-Armoniac, Chalk, or the Powder of Sea-Coal. If your Beast is weak, give only a Quart, or scarce so much; but if strong, more: once often serves, but twice will surely cure the Beast. Give it lukewarm.

Another. Toast a piece of Bread, and cover it well with Tar, and give it. It's occasion'd, some say, by their brouzing on Oak-leaves, &c. A Frog put down a Cow's Throat, and she immediately drove into
Water,

Water, will directly piss clear. It's a present Cure.

For the Blain in Cows.

When first taken, they will stare and foam, with their Tongues out of their Mouths; then immediately prick her in the Nose, or blood her in the Neck, which will keep her alive twenty-four Hours: then take a Handfull of Salt in about a pint of Water, and give it her, then directly ram a whole Egg down her Throat. Sometimes they have it behind under their Tail, when a Blister will appear; this is cured by running a Hand down her Fundament close-finger'd, and brought wide out, which breaks the Blain within. If not discovered presently, it kills them in half an hour sometimes.

For the black or red Water in Cows, a Distemper next to the pissing of Blood.

Take a piece of Iron, heat it hot in the Fire, and put it into two Quarts of Milk; after let the Milk cool, and give it the Beast blood-warm, and it will bind up the Bloody Issue after two or three times giving.

For

For a Cow that strains in Calving—when their Calf-haulm, Udder, or Bag will come down and swell, as much as a blown Bladder.

Take new Milk, and strew thereon Linseed bruised to Powder, or Chalk, or Pepper, but Linseed is best; put it up with your Hand, and let her hinder parts stand higher for two or three days, than her fore-part.

For a Cow, who by lying on the Earth, and too soon drinking cold Water after Calving, her Calf-haulm swells and lies over the Neck of the Bladder, stopping the Urine that she cannot stale, or stand on her feet.

Take two Sacks or a Window-cloth, put it under her Body, fasten a Rope to it, and put it over the Beam of the Barn, and draw her up that she cannot touch the Ground with her Feet; then let a Woman anoint her Hand, and work the Calf's-haulm from the Bladder, that the Water may have a passage. Give her warm bedding, warm rinks, and warm cloths.

For a Cow that cannot glean.

Take Germander and Pennyroyal, boil them in a quart of Ale, then strain it, and
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put therein a little Saffron, and give it her to drink, and it will bring it away in two or three days. Others will give two Ounces of Flower of Brimstone in a quart of new Milk warm'd.

To feed Calves whilst they suck.

Put into a Trough Barley-meal, and it will whiten and fat. Some give them Oats in Troughs all the time of their suckling; and the night before they have them to Market, cut off a piece of the Tail, and tie it up with a Shoemaker's End, and when at Market will give them a Cram or two of Flower mix'd with Claret, to keep them from scouring.

To cure Swellings, or Snarl'd Bags of Cows.

Take Rue and Adder's-Tongue, stamp them together, and squeeze out the Juice; this mix with a pound of fresh Butter from the Churn without Salt, and make into an Ointment.—This is a most excellent Receipt, as I have often experienced.

Another Receipt to make a Cow glean.

Take a large Handfull of Pennyroyal, and boil it in three pints of Ale, then strain it,

The Hertfordshire Husbandman. 115

it, and put one pound of Treacle into it, and let it just boil; take it off, and put an halfpenny-worth of Flower of Brimstone to it, and so give it in a Horn to the Cow. Some, instead of Pennyroyal, put in Southern-wood.

Horses. Our Farmers hereabouts commonly go to *Tame-Fair* on *Michaelmas-day*, and buy the yearling Colts for about two Guineas a-piece, which they turn into their *Latter-Math* for that Winter; and give them some Hay; two are best, for their Company's sake: and the next Spring about the beginning of *May*, put them into the Vale about *Aylesbury*, for a Shilling or Eighteenpence a Week, and so raise fine Horses at a cheap Rate. And as to their Management and Cure of Diseases, I think *Gibson's Dispensatory*, and his other Books, are the best that ever came out on that Subject. I shall therefore only take notice, that for the *Farcy*, what I mention also for Sheep, is a most excellent Receipt.

Steep the *Regulus of Antimony* in Ale, with a little of the Spice called Grains of Paradise, and a little Sugar; of which give a Horse about half a pint at a time, two or three times, with a day or two's intermission between each time.

Swine are generally of two sorts, the small wild Black, *China*, or *West-India* Breed, and the great *Leicestershire*. Between these are also several sorts and mixtures. The first indeed makes delicate sweet Pork or Bacon, also pickled is most dainty Food: they fatten for Pork in about three Weeks, and for Bacon in proportion; and I have known them to weigh near twenty Stone when killed for Bacon. The great Sort will sometimes weigh fifty Stone. I give mine Antimony in Powder, as much to each as will lie on a Shilling, two or three times a Week, in their Wash or among Peas, which gives them a Stomach, and preserves them from the Garget and Measling.

Sheep are the most necessary and beneficial of all other Beasts upon a Farm, and where they are not kept, a Tenant's Destiny may easily be read. The Rot in Sheep is the greatest Misfortune belonging to them. It is caused by too much Moisture, by Water and Snows, which by their weight and dissolution mix and wash the Grass in with the Earth, and so cause a Froth or Scum, which the Sheep thro' hunger and novelty greedily devour to their destruction; it is also occasion'd in the Spring or Summer by a Putrefaction in the Air and Grass, especially in the Vales and Marshes, and is known oftentimes by the Cobwebs on the Ground and Hedges, which hold a wet or moisture,
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and is of a poisonous nature; therefore the Farmers, particularly in the Vale, don't unfold them till nine in the Morning, that the Sun may dry them and the Grafs. They are also killed by means of a Red Water or Serum that is occasioned by too much Moisture, and sometimes die by eating the Glow-worm, or Canker-worm, as some call them.

To prevent then the Rot or Red Water, some even at Midsummer will give them Straw or Hay; which has saved many a one, when others about them have died, that did not eat dry Meat. A Gentleman near me bought a parcel of the large *Oxfordshire* Pole-Sheep; several of them dying of the Red Water, the Shepherd gave the rest Hay in the Fold, and saved them. Rotten Sheep will, in the beginning of the Rot, fatten sooner than sound ones; and the way to know them in the Market, (which they are generally brought to, so soon as discovered) is to feel the Cod of the Wether, and if there is on it a dry Wax or Scurf, he is rotten; but if moist and wet, he is sound. And so the Ewe will be between her Legs. Also if the innermost part of the White of the Eye has streaks of red, it is a sign of Soundness; but this is often forced, by putting before-hand Pepper into the Eye, which will fret it into a redness. Also the Gums and Mouth of a rotten Sheep will be white.

To prevent and cure a rotten Sheep that is not too far gone.

Take Bay-Salt and stamp it well, and after the Sheep has fed a day or two on clean dry Oats, put some of it amongst them, and after that a greater quantity, till such time as they begin to distaste it; then give them clean Oats a day or two, and after that serve them with Salt as before. This course being followed until their Eyes have recover'd their natural colour, they will be perfectly cured. This meat should be given them in wooden Troughs in Barns, and their Dung and Stale will answer the greatest part of your expence; but if you have not that convenience, it may be given them in the open Air.

For the Skit or Looseness in Sheep.

Take Salt, Allum or Chalk, and give it in small Drink or Water, and it will knit and help them presently.

Another Receipt to cure and prevent the Rot in Sheep.

Take the Regulus of Antimony, sold at the Chymists or Apothecarys, and steep it in Ale, with a little of the Spice called Grains
of

of Paradise, and a little Sugar; give it two or three times with a day or two's intermission between each time. To a Sheep give about two or three Ounces at a time. This must be done in time, before the Liver is too much knotted, and that may be partly known by killing one or two, by which a judgement may be made of the rest.

But as the Proverb says, *The obstinate man seldom wants woe*; so I have known several lost their Flocks by their *Indolence*, and kept them on in hopes of their knitting, and recovering by the alteration of Weather, when they might have disposed of them early, and lost but little by them: Therefore I doubt not but these Receipts will be of singular use when publickly known, in being a means to prevent this loss and trouble. For this Regulus of Antimony is a universal Remedy for most Diseases in Men and Beasts. It is a Chymical Preparation made with crude Antimony, Nitre and Tartar, and corrected by the Spice and Sugar. It also cures the Farcy in Horses, as aforesaid. Every Apothecary can give further information of these most excellent Ingredients. The larger the Sheep, the less power the Rot has; for the smaller ones are sooner overcome by it. In our Chiltern Hilly Country, the Western white-faced Sheep prove the best of any, because they come off a sound Lay of Ground, from the

great Commons or Downs of *Wiltshire*, &c. But I knew a Gentleman by me, that sent down to the remotest parts of *Wales* for a Flock of hardy found Sheep, as indeed generally the *Welch* are; and the consequence was this: they being kept on Mountains, and at their full range in open places; when they were brought into Enclosures, (notwithstanding they had a careful Shepherd) ran some one way and some another, till a pretty many were lost. The Gentleman on this told the Shepherd, he should pay for them all, which so affrighted him, that he ran away too. The long loose-wool'd Sheep are not so good as the Western close curl'd-wool ones are, because the first after they are wetted, are sometimes a Week before they dry, to their great prejudice; nor are they of so hardy a nature. It is a common way for the Vale-men, when they find the Rot has begun in their Flocks, to pay the Chiltern-men for letting them feed on their Commons a few Months, in order to knit and recover them, which indeed often happens by the change of the Air and Ground; but even where the Commons are not stinted or limited to a certainty, the rest have brought their Action (or at least threaten'd it) against the culpable, for their invading their Right of Common, by surcharging the Common with these sort of Sheep; so that their Cure by these Means

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is now generally hinder'd all over the Nation; which, I presume, will make these Receipts the more acceptable. My good Friend and Neighbour, Mr. *Timothy Garret*, bought some Western Lambs, about *Alballontide*, and turned them into his Orchard, where they grazed till the Snow fell, when they lay scratching after the Grass, and would not eat Hay; by this he lost the biggest part of them: And since, he takes them into his Yard, and gives them Hay or Straw, so that they cannot come at any Grass, they live and do very well.

A Rotten Sheep, he says, he has several times seen die with Plaïses in their Liver and Head; this Plaïse is a live Worm about the breadth of one's Finger-nail, and feeds and preys on these parts. Another Remark is this; at *Hudnal*, a Farmer had a Wether Sheep took with a giddiness, which increased so, that it could not stand; on this, the Farmer sold it for Eighteen-pence to a poor Man, who immediately knock'd off that Horn that lay next the Ground, and there appeared a small Bladder like that of a Fish, which he took out, and put a little Wool in the place dip'd in Tar, and sew'd it up. This Sheep did well, and was sold afterwards for nine Shillings.

This, as well as the first case, undoubtedly was occasion'd by the corruption of the Blood in the Animal, which my Remedies before
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mention'd directly strike at, by warming, drying, and altering the whole Mass of Blood; and therefore if given in time, by consequence will prevent and cure these and the like disasters.

Another Receipt to prevent the Rot in Sheep.

Take a Peck or better of Malt, and mash it as though you would brew it into Beer or Ale, and make eleven or twelve Gallons of Liquor; then boil in this Liquor a good quantity of Herbs called Shepherd's-Purse, and Comfrey, Sage, Plantain, Pennyroyal, Wormwood and Bloodwort, of each a good quantity, and boil them in the said Liquor very well, then strain them forth, and put a little Yeast therein; after that, put a Peck of Salt, and tun and put it up in a Vessel. Then give it your Sheep in wet Weather after *April* comes in, seven or eight Spoonfuls a-piece, once every Week, if the Weather be wet; if it be dry, you need not so often: and thus continue till *May* and after, as you see cause, according to the dryness or wetness of the Weather. Give them now and then a lick of Tar mix'd with Herb *de Grace* chopped, and it will cleanse the Bowels of much Corruption, and be healthful to the Blood.

Objection.

Objection. It is said, that such Cover for Sheep in the Fold, as is before mentioned, will be too hot for them, as they are naturally a Beast the best arm'd against Cold, and that it has been fatal to several, on account of the severe Weather that they are exposed to, out of the Fold, and when the Folding is over for the Winter in *February* and *March*.

To this I answer, That too much Cover may be as bad or worse than too little; but as the Vale Farmers in some places lay some long furzen Faggots just within the Fold, and against the windy quarter, I think it may do well. A great Farmer by me is going to draw half his Fold-Hurdles with Straw-bands, to break off the Winds this Winter from the Sheep in Fold.

TAME RABBITS.

TAME Rabbits are great Improvers of a Farm by their Dung, which is sold here for Sixpence a single Bushel trod in, and is chiefly used to harrow in with Barley and Grass-Seeds. They are more profit by far in Hutches than in Pits. Their Season is from *Christmas* to *Whitsuntide*, and when their Skins are clear without Spots, a single one is worth 4 *d.* or 6 *d.* The main Art of keeping these Creatures, is to preserve them from Tunning, or being Pot-belly'd; and therefore when fed with raw Grains,

Grains, Hay must be always given with them in the little Apartment of the Hutch, to dry up the moisture of the Grains; and when fed with Bran, or other dry Meat, Greens must be given to answer their drowth. Commonly we keep the young ones with the Doe two Months, and at five Weeks end let her take Buck, that the former Brood may go off before she kits about a Week. Pollard mix'd with Grains, or made into Paste with Water, and given three times a day, is very excellent Food for them. Ground Malt helps to recover the young ones when tunned; Barley also just broke, is very good. If a convenient place can be had to let young ones run in cover, or out at pleasure, they will thrive with less meat. They mightily love to brouze on Pea-straw or green Furze. If Bran is given alone, it should be long Bran; but to mix with Grains, it should be short Bran or Pollard. I never try'd it yet, but am of opinion, that *French* Wheat must be fatning Food for the young ones: and when they are so, they sell best to the Higler at six or eight Weeks old. A Doe goes thirty-one days; and generally one time with another, brings six, which indeed is enough for any one Doe to bring up and fat. The best time to save young ones for Breeders, is in *March*; and then with good meat, clean usage, and close attendance, they will take Buck about *Alhallontide*,
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and so enter the Season with the sale of their first Litter. A Doe is reckon'd to pay 10 s. a year clear, and that her Dung will pay for Grains. Some there are that have gelt the Bucks, in order to make them larger and sweeter; but as I yet never experienc'd the success, I can write no further of it. The sweetness and good relish of their Flesh, undoubtedly is a very desirable thing, and then they are certainly more wholesome; and this, in my opinion, is to be obtained, first, by such Food as will occasion it; as good Oats, Barley, Pollard, and fresh hearty Grains, Greens, and Hay. Secondly, By keeping their Hutches thorough clean, and carrying away their Dung to some distance. And, thirdly, by keeping them in a wholesome sweet Air. For all living Creatures must subsist by Air, and be better or worse affected by it, as it is good or bad; according to the Observation of a Gentleman, who said, he never eat so sweet a one in *London*, as he did here; because, as he said, the Hutches there standing in close places, and in a gross Air, is apt to taint their Flesh.

The common way of killing them by striking them behind the Ears only, is not so well, by reason of the great quantity of Blood that settles in the Neck, which by the new practice is mostly prevented. As soon as they are struck with the Hand under the Ears, then immediately jobb a penknife
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into the Throat, and give it a launce towards the Jaws; this will let out the Blood till they become white.

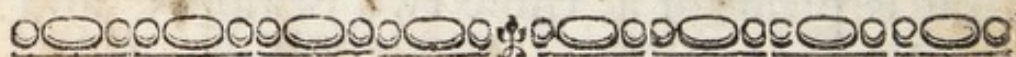
Another way is to kill them as they do a Turkey, by flitting with a penknife the Palate of the Mouth: this is reckon'd the most cleanly way of all.

PIGEONS.

PIGEONS have several Natures and Names. The Tame or House-Pigeons are called Barbels, Jacks, Crappers, Carriers, Runts, Horsemen, Tumblers, and Great Reds. The Barbel has a red Eye, a short Tail, and a Bill like a Bullfinch. The small Jack-Pigeon is a good Breeder, and hardy; has a turn'd Crown. The Crappers are valuable for their swell. The Carriers for their swift return home, if carried to a distance. The Horseman-Pigeon is something of the Carrier's nature. The Tumblers for their pleasant agility in the Air. The Runts for their good breeding and bringing up their young ones. The Great Red for their largeness. The Turn-Tails, for their turning them up almost to their Back. And the Black-Head is a white Pigeon with a black Head. Several of these are often preferred for their Beauty, but the most common are the Runts. Generally in about half a year's time the young ones may be paired, by putting a Cock
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and a Hen into a small Coop-hutch, where sometimes in an hour or two, and sometimes not under a day, two or three, they will pair, which is known by their billing and cooing; the Cock's calling the Hen, and the Hen spreading herself before him. They breed almost all the year, except Moulting-time. It's common to cross-match them, and they'll breed the better; and should be fed all the Year, except Seed-time and Harvest. The former holds about a Month, and the latter three, even to *Alballontide*. Some always give them meat throughout the Year, because, say they, before they'll be forced out to get their living abroad, they'll starve some of their young ones. Others, as Farmers, will give them no meat all the Year. These Calculations are for the Country, where meat is plentiful at those two Seasons; and at others, at the Barn-doors. Forty Pair is reckon'd to make about twenty single Bushels of Dung a year, and is here sold for 10 *d.* the single Bushel heaped. It is said, this number well look'd after, will maintain a single Man. A Garret or Room about twelve by twenty feet will contain that number; too much room hinders their increase, as well as too little. They commonly hatch within the three Weeks, lay generally two Eggs, and about three Weeks after hatching, they are fit for Market. This number will eat a Bushel of Peas or Tares

Tares in a Week, besides half a Peck of Hempseed, which fattens the young ones very much, and is made use of by the Higglers to cram them on the Road in their way to *London*; where, at the Seed-shops, it is often sold for half a Crown the Bushel. They should have constantly several little Bins by them, to let out their meat gradually into a lower Trough, as they consume it, which is a means to keep them from straying; this with fresh Water and Gravel, will keep them at home, without the Salt-cat and other contrivances. Indeed some Cummin-Seed is esteem'd very good for its Scent to be kept constantly in the Pigeon-house. An old Pair of Pigeons may be brought from another place, and will seldom return, if they are kept in till they breed.



HEDGING.

IN wet Grounds, the Aquaticks are best to plant for Hedges, either by Roots or Truncheons, as the Alders, Arbeles, Willows, Sollars, Black Poplar, and others; but in dry Grounds, the White-Thorn and Sallow make the best of Hedges; the Sallow to be planted just within side, and the White-Thorn without: by this means when it is at its maturity, you may cut the Sallow twice to the White-Thorn's once. And here we commonly make our Hedges once
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in nine Years, when Wheat or Barley is sown in the same Field. Sallow will grow from the very Stakes: but Setts planted with good Roots will come quickest. In case you make an intire new Hedge, throw up a Bank by making a Ditch; let this Bank be somewhat hollow in the middle, then in the Spring-time, cover the Roots of the White-Thorn well with Mould, and make holes with a Crow or other thing, and stick in Truncheons or pieces of Sollar about two foot long slopewise, with a sloping cut on the top, that the Rain may the better descend to the bottom; and put some Horse-litter in the middle of the Bank, to keep the Sun and Air from drying the Setts. The Sheep and other Cattle are apt to damage the Sollar, be it old or young; the one by debarking, and the other by cropping the Tops. To prevent this, take Cow-dung, mix it with Water in a Pail, and with a new Broom throw it on thick. Or take Lime, and serve it so; or take Dirt and rub the Sollars well with it; and if wash'd off by the Rains, renew it. Others will make an Hedge with all Beechen Setts, especially on the chalky Grounds, which they pull out of the Woods, about two feet long; but then the Heads must not be cut off, as the White-Thorn or Sollar is: for then they won't grow. There is one Objection against this latter; *viz.* That it will
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quickly after making, rise and become hollow; but this with care may be supply'd: and indeed, there is encouragement from this Plant so to do; because it will return much Wood, as being of the Tree-kind. I planted one about fourteen years ago, with Cherry-Trees in the same Hedge, at considerable distance, several of which I have since budded; and both Them and the Hedge, for forty Pole, thrive to admiration. Nor will Cattle eat this sort of Hedge so soon as they will Sollar or Ash. I am this Winter, 1731, going to do the like on the same length of Ground, by taking in a piece of common Field-Land; in order to which, I run along the Plough, and throw'd up three or four Thoroughs, by which the Ditch and Bank is half made at a very small expence. The Horn-Beam or Horn-Beech, is said to make the finest Hedge; but about us, we chiefly make use of the White-Thorn, Sollar, and Beech, and reject the Ash, Hazle, and some other sorts.

PLANTING.

TO Plant a Fruit-Tree, as a Standard, or against a Wall or Espalier, there are diversity of ways prescribed by several Authors: But as I am very sensible there are some gross Errors inserted in some of their Books, as well as some very useful Rules

Rules in others, I therefore shall be very wary in writing on this Subject. And as my talent lies chiefly in Field-Planting, I will be the more particular in writing of this most useful Science; because a Mistake in the beginning, proves often fatal, and is not so easily rectify'd afterwards, without great and too dangerous violences. From hence proceeded that grand Discouragement that has so much prevailed over this Nation in general, and is chiefly the Cause of the great Scarcity we are at this time under for want of more Plantations of Fruit-Trees, and especially Apples and Pears. And as Examples are beyond Precepts, and the greatest encouragers or discouragers of Arts and Sciences; so in this of Planting, it has its peculiar tendency for the better or worse: but I think at present most of the latter. And here I have made many observations in my Travels with a concern'd view of whole Plantations set too deep, which by consequence not only disappointed its Owner of his hopes and profit, but also proved a forbidding Article to the Neighbourhood not to plant, lest it should be as fatal as it was to Mr. Such-a-one. And, indeed, to say the truth, there is no mistake more common than this of Planting Fruit-Trees too deep; and yet nothing is more destructive to them, especially in some Grounds too much subject to wet and moisture, nor tends more to keep

Trees in a sickly, unthriving condition, and consequently from bearing either much or good Fruit. A Gentleman near me, by purchase came to a large Apple-Orchard that had been planted some years. The Trees were great ones, but return'd little Fruit; this provok'd him to enquire the Cause, and found it to be deep Planting at the first; for the Man dug sometimes Breast-deep before he could discover a Root, and the Soil, after a Spit-deep, was red Clay on a high Ground. In the room of these Trees, he has planted young ones, but after a different Mode. I must own, where the Soil is naturally exceeding dry, and lies on a declivity, that will quickly carry off the Winter wets, the fault may be less dangerous: but except there be a sufficient depth of natural good Earth above the Rock, Gravel, or Clay, the Evil complain'd of, will there quickly discover itself, after four or five Years; when the Roots of the Tree will be starved by a hungry Gravel, Sand, Chalk, Rock, Clay, or whatsoever the bottom be, that lies too near the Surface. On all accounts therefore, it is much the better and safer way to plant high, provided care be but taken the first and second Year to keep the Roots tolerably cool and moist, yet not to subject them to too much Wet in Winter; for Summer Wet never hurts them.

Of Planting Standard-Trees.

Various are the ways used both by Gardeners, and my neighbouring Farmers, in Planting Standard Fruit-Trees. And that the Reader may judge which is the best, I shall here set down some, I think, of the worst Methods, as well as the best, I know of. There are some that directly dig up the Mould, and make a hole; in the bottom of which they plant the Tree, and so cover it up, by throwing just the same Mould in again, and leaving it. Others, thinking themselves more careful, will drive in one Stake, and wythe it about the Tree. This is a sad way indeed, and must end in the Tree's destruction; for altho' it may live, and grow in Wood and Fruit some Years, yet it can never answer to advantage either in the one or the other. And a case something of this nature was acted by a Lord of a Mannor, in which lay a fine high Common; he being desirous to improve it, transplanted a considerable number of young Timber-Trees out of the Woods: The Soil was a hurlock chalky Rock, about four or six Inches below the Surface, between which and the Top, he planted his Trees; nor could I perceive any Mould about them above the common level: and, notwithstanding he was at a great expence, for a Cart,

Horse and Man to water them during the first Summer, yet afterwards they dwindled, and did not answer. Now, by this Mistake he lost his Trees, the great charges of watering them for a long time, and so much precious time, which would (if rightly made use of) have gone a considerable way in their Growth. Therefore, happy is he who by others harms learns to beware. The true case then of this matter, as I take it, stands thus: Instead of Planting tall, large-body'd Trees on so high and naked a Situation and shallow Soil, I would have put a more young, slender and shorter Tree, in the following manner; *viz.* Pare as thin a Turf off as possible, then take up all the Mould, even to the Chalk or Hurlock; this done, put the Turf upon the same, the Grass downwards, spread a little Mould on the same, on which plant the Tree, and cover it with the rest of the Mould. Upon this again spread a good parcel of Fern-litter, or other such stuff; then put two, three, or more Wheelbarrows of Virgin or other Mould, about six or eight Inches thick, in the form of a Basen, about three or four feet over, as your Root is more or less large. The next thing is to secure the Tree against the furious Winds, the Bite of Sheep, and the Rub of them or larger Cattle; and that is done by driving two large Stakes opposite to each other, so that each may be about three or four foot
above

above the Ground, and about four or six Inches from the Body of the Tree on each side. Then nail four Cross-Bars to the Stakes against one another, two at top, and two towards the bottom, stuffing Grass, Hay, Straw or Fern between the Body of the Tree and the Cross-Bars, to keep it from galling; then take black or white Thorn-Bushes, and draw them thick between the Cross-Bars, from the top of them and higher, down to the bottom; always remembering to make use of those Stakes that are thicker than the Body of the Tree, that there may be a sufficient hollow, between the Tree and the Cross-Bars; and to keep the Tree more firm, wythe it to them. When this is done, there remains but one thing more to compleat the Planting of a Tree, and this is so perfectly necessary, as not to be omitted: With a Spade first give a circular cut about the Basen-heap of Mould; then six or eight Inches back from that, give another circular cut, and turn up all the Turf, letting it lie with the Grass-part downwards, slopewise and joining the said Basen-heap: by this, there will be a round Gutter, which at all times is ready to receive and make a lodgement of all Rains that shall fall, and will sufficiently supply the fibrous Shoots with Moisture, as they gradually proceed from the Master-root. And here ends the Plantation of a Tree for the first time; but then it is not

wholly done with: For either in the third, fourth, or fifth Year afterwards, as the young Shoots push more or less forward through the said Gutter, which is best known by the Growth of the Head of the Tree, you are to make such another Gutter as is before mention'd, to meet and water the succeeding fibrous Roots; and so renew the same, as time and judgement will best inform you. Now, let us consider here the Benefits which accrue by this Method of Common or Field-Planting: First, then, by the Turf and Mould which is placed under the Tree, the Roots are hinder'd, for a considerable time, having to do with the Hurlock or Chalk Soil. Secondly, They are hereby encouraged to grow spreading and quick, by means of the toughness of the Turf, and the fertile Salts which are in the same. Thirdly, The Fern or Straw, by being placed between the two Moulds, becomes a Watering-pot to the Root, and by the help of the upper Mould, laid in a Basinform, shelters and shades the same both from the Sun's and Air's too violent Influences. Lastly, The great Charge of Man, Horse, and Cart is prevented, and the Tree secured with a trifling Cost from all sorts of Cattle.

Another

Another way,

As practised by a Nobleman's Gardener, on a pretty deep Loam, under which was a red Clay, is this: First, he cuts a Circle with the Spade, of about three feet diameter, more or less, according to the largeness of the Root; then he cuts and takes off the Turf in several pieces, and lays it by itself; then he takes up all the next Mould for about a Spit deep, and lays that by itself, and so the next Mould which is worser, he serves the same; in the place of which last, he puts the Turf-Grass downwards, then about half of the best Mould he spreads over it, on which he plants his Tree, and covers its Roots with the rest. This again he lays all over with Wheat-straw, and with the rest of the Mould, and two or three Barrows of some other in a Basin-like manner, makes a Trench round the same, flaking and bushing it up, as before mentioned.

Another way,

Is what I have done amongst others; and that is, Planting a Tree upon the common Grass Surface or Level, without any manner of breaking the Ground, especially where it is of a wet nature; and upon the Roots put two, three or four Barrows of Virgin-Mould, and

and Fern and Straw between the same, in a hollow fashion, with a Trench round it, and so stake and bush up. This way I have found to answer extreme well, as to transplanted large Cherry, Pear and Walnut-Trees. But here, I must confess, that the hardness of the Turf does not give the Roots leave to run so fast at first, as others do that are planted in loose Mould, so that they will be longer before they get hold of the Ground; but when they have, they generally run faster than others, and, indeed, make the largest Trees of all others: for to say the truth, upon a due Observation, the biggest and best Trees are found to be those that lie highest with their Roots in the Ground, as is their Fruit; as I shall hereafter explain. The Reasons of this, I presume, may be owing to the Grass-Ground, that naturally attracts and draws the Roots into it; which top Earth being full of the best nitrous and saline Qualities, and more exposed to the Sun, Air and Rain, give an extraordinary advantage to the quick Growth of Trees, in time, even beyond those which are more hid and covered in their Roots from those benefits. But I don't find that an Apple-Tree, and some other sorts, will quite so well answer, because their Roots being of a more tender, soft nature, are not of that strength, to enter and penetrate the hard Crust of the Earth; altho' I have now grow-

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ing several fine Apple-Trees on this sort of Plantation. However, I am sensible there are Objections made against this Method: For it is said, That a Tree in this case is more liable to be blown down by the Winds, because the Roots are not envelop'd enough in the Earth, to have sufficient hold: And, again, that they can't be so well water'd for want of a Trench. But to obviate this, I think the due staking up a Tree for a few Years, and keeping a sufficient quantity of Horse-litter on the top of the Border about the Tree, both Summer and Winter, is sufficient to indemnify it against Wind, Sun and Air. I am sure I have found it to be so, in several instances of this nature. But I have heard, that a Gentleman, passing by a Plantation, should say, The best way was to put a thin Layer of Virgin-Mould on the Grass-Ground, and plant your Tree upon that, directly after the before mention'd manner. Now here is a requisite Observation to be regarded in the performance of any of these ways, and that is, That the upper Bed or Layer of Mould that is thus put upon the common Surface or Level of the Ground, must not be too thick; for this, as I have found to my cost, will rather hinder, than forward the Tree's Growth; because, as I suppose, too much Mould keeps the Sun, Air and Water at too great distance from the Roots, whereby they become dry, mouldy
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and rotten; or, if they should chance to surmount these disasters, they grow but at a poor rate: So that a thin Coat of Earth, about six or eight Inches thick, is often sufficient. But this piece of Management must be according to the Proportion of the Root. Which leads me to another Remark of this nature; *viz.*

Planting of Fruit-Trees in Fields and Closes.

Field-Planting in this, as well as in several other Counties of this Kingdom, will, I suppose, be thought something strange at first, by reason of the common Objections.

Who would expose fine Fruits in the open distant Fields to rapacious Hands, and the devouring Beaks of Birds? &c.

Therefore, as I now engage myself in an Introduction chiefly new to the major part of this Nation, I shall endeavour to answer these common and discouraging Obstacles, which have hitherto hinder'd, to a very great degree, the Propagation of Fruit-Trees, by laying down such Reasons, as I hope will be as prevalent with others, as they have been successful with me. First then, suppose a square Field or Close of forty Poles long every way, the middle part of which is ploughed Ground; on the four sides of that are Baulks of Grass-Ground of forty feet broad;

broad. Along the middle of these Baulks, I plant my Fruit-Trees at thirty three feet or two Poles asunder, which will contain at that rate twenty Trees on a side, or eighty in all, be they Apples, Pears or Cherries, &c. Indeed Walnuts, as they generally have the largest sort of spreading Heads, should be planted further off one another: but Trees at this distance, I think, may answer very well, considering there are none on the two sides of them, and therefore have room allowed them for the Sun, Air and Rain to come at the Ground about them, and the Grass not sour'd by their too close Cover. But this is left to the discretion of the Planter, who may perhaps think forty, fifty or sixty feet distance much better; and, indeed, I must so far join in his Sentiments, as to think him most in the right, where he can easily spare his Ground: For certainly the Fruit has thereby a greater opportunity of ripening on all sides more gradually, and at nearer a time, and the Grass rather better under their drip. But my Dimensions here are calculated for the medium way, and where a Man is to make the most of a little Ground; for I have often known the Grass to be a greater burden in scorching Summers under the shade of Trees, than otherways. And by sowing Soot, Ashes, or Lime, &c. in the Winter-time on the Ground in the distance of their shade, prevents the common complaint,

plaint, of the drips souring the Grass. The Rows of Trees being thus planted in the middle of the Grass-Baulks, according to the Plan here laid down, is for these Reasons: First, The Cart has room on either side of them to pass and repass. Secondly, They are at such a distance from the Hedge, and plough'd Ground, that neither the Heads nor Roots of the one or the other are capable of receiving prejudice by too close Planting, but has a sufficient Plat of Ground allotted each Tree for its due Nourishment. Thirdly, The Plough-Team has room to turn on the outer-part of the Baulk, without damaging the Trees or themselves. Fourthly, The Hay may be made much better than in an Orchard, where the promiscuous Shades of their great Numbers proves often very fatal to their Owners. Fifthly, A Fruit-Tree so planted in a Field, has much more the benefit of the best of Dressing; which is the Dung and Stale of Cattle, who are fed in the same Field by Turnips, or sow'd Grasses, &c. An Instance of this has been obvious to many, in the Largeness, hasty Growth, and good Bearing of a Cherry-Tree in my Home-Close, which is a plough'd Field; under this Tree the Cattle used to lie and shade themselves, when it was fallow, sow'd with Turnips or Grass-Seeds, and was one of the largest Trees in these parts; and tho' a wild Cherry,

I have sold the Fruit for a Guinea on the Tree, clear of all Charges. How much then must a Field-Tree have the advantage of a pent-up Orchard-Tree? So likewise are those Trees planted next a Road-way, whose Roots are dressed by the Sullage of the passant Cattle; and which, if observed, may easily be perceived to excel those by far that are planted more in the in-ground. But here I would be understood not to be a Votary for planting Fruit-Trees in Hedges, except for the Road sake, because the Roots of the Hedge are so many Thieves about its Root, and impede its Growth: and if by length of time it grows large, then another Evil ensues, which is, that its Head by the drip often kills or damages what grows under it, besides the Misfortune that accrues to the Hedge by People's getting the Fruit. This Standard Field-Planting is vastly preferable to Half-Standard, Dwarf and Wall-Planting, because of late Years several sorts of rich Fruits which have been shelter'd by Mats, and other contrivances, have been discover'd to prosper as well or better in the Field on whole Standards, and bore much greater quantities of Fruit at less expence, and better tasted, than those on Walls or Espaliers; because part of their Fruit by the Shade is hid and kept from the Sun's Influence, which makes them generally ripe on one side, and unripe on the other:

other: witness the incomparable *May Duke-Cherry*, several sorts of Pears, *Orleans-Plumbs*, &c. And even in the Vale of *Aylesbury*, where they reckon no Cherry-Tree will rightly prosper in that naked Country; there, I say, this *May-Duke* will grow and bear constantly, as in other places. Here also is the great Expence saved of pruning, nailing and tying, which in Half-Standards, Wall-Trees, and Espaliers amounts to considerable Charges, and which not only takes up much precious time, but shortens the Life of the Tree; whereas a Standard is rather hinder'd than furthered by the elaborate practice of the Knife. What a charming sight is a large Tree in blossom, and after that, when loaden with Fruit enough perhaps to make a Hogshead of Cyder or Perry! A Scene of Beauty, Hopes, and Profit, and all! It may be on less than two feet diameter of Ground. And above all, what matter of Contemplation does this afford, when we let our Thoughts descend to a single Kernel of an Apple or Pear? And again, how heighten'd, on the beholding so great a Bulk raised and preserved by omnipotent Power, from so small a Body?

There is also another lamentable Objection belongs to this Field-Planting, by the Vulgar and Ignorant; whose Argument against it is, That the distance of the Fields from the House exposes them to loss. But
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when I write of Planting abroad, I mean such to answer Delight and Profit, as are something numerous, which I think a hundred or two of Trees will; and then I am of opinion, by the care of a Looker-after during their ripening Season, the Fruit is safer than in a contiguous Orchard: For in a Town or Village, the Boys are most plenty, and their Escape is at hand, when by the remoteness of the Fields, they can't so easily clear themselves. Besides, this perhaps may not be an extra-charge, if the Overseer can occupy himself in other business near the place. This is annually done in and about the *Kentish* Cherry-Orchards and Plantations. In the year 1728, his Grace the Duke of *Bridgewater* was so good as to give me leave to take up a score of wild Cherry-Trees, out of one of his adjacent Woods, about twelve Years old; these, with their large Roots, I transplanted on the Grass-Baulks of a five-acre square ploughed Field, in Rows, with no other Earth than what I found in the place: Thus, I made a circular hole, and put the Turf first down, with a little loose Mould on the same, on which I planted my Tree, then I put some Fern, and cover'd it with the rest of the Mould; by this Method there became a hollow place all about the Roots: and notwithstanding the succeeding Summer was very dry, they grew and flourish'd very

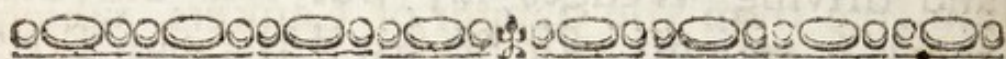
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well,

well, and on the 13th day of *July*, 1730, I budded them with a *May-Duke*, on the new young Shoots that followed 'after cutting off the old natural Head when I planted them. Here the Roots were intirely envelop'd and cover'd in Virgin-Mould, the greatest promoter of *Végetation*; and by putting no additional Mould, the hollow about them received the Wets in a more ample manner; the Sun and Air had free access, and even the very sulphureous and nitrous Dews, I believe, were not a little serviceable: which plainly discovers the excellency of this sort of Planting; for had there been put another Coat of Mould more than the place naturally afforded, then I don't suppose these benefits would have been so propitious; because they, especially the latter, would not have had an opportunity of coming so free and quick at the Roots, which by only having a thin covering of the natural Mould, are exposed more immediately to the vivifying nutritious Particles of Heat, Water and Air. But indeed, to be more secure, I generally put some loose Horse-litter only, upon and about the whole Border, by way of safeguard against extraordinary Droughts and Frosts, that may happen in the Summer and Winter next after planting any Trees. But I dare not use the Cherry-Tree as I do the Apple and Pear; for upon these I put absolute
rotted

rotted Horfe-dung, Fowl-dung, or Rabbit-dung, to wash down on their Roots, and so let it lie all the Year on the Border. This makes their Head run at a great rate, and as it is an outward application, the Trees are free from the danger of Cankers, which Dungs will certainly produce, if laid to the naked Roots of any Tree when planted; on the contrary, this Virgin-Earth is a direct security against the Canker. Even an Apricot, which is most subject to it, will live sound and free in this Mould. However, as a Cherry of all others hates both Dung and Knife, I only venture Horfe-litter or Fern on or about it. And this Fern, as I have experienc'd, is beyond Straw, when laid on the Roots at the time of planting; for as it is of a cold, spungy, wet nature, it does its office better, by keeping the Roots moist, and will also prevent the Mice making their lodgements in the hollow Mould of a new-planted Tree, which they often do, sometimes to the killing of a Tree; when Straw, that is of a dry hollow nature, invites and shelters them and the Pismires, who likewise are often fatal Enemies. These Shelters then are of exquisite service, when applied above and below the top Mould: And this last long, dry Summer, proved the truth of this, and another Invention a Gentleman near me made use of to defend the Bodies of new-planted Trees, as well as their

Roots: he got furzen Faggots, and laid at the bottom, and so piled them almost up to their Head, which answer'd extreme well.



Of the Circulation of the SAP in TREES.

To help barren Trees, and to make others more prolifick.

THE Knowledge of this is certainly necessary for all Planters; for by it, a Man is render'd capable of making his Estimations in Budding, Grafting, Planting and Transplanting, Pruning and Lopping. This Circulation of Sap in Trees, as well as Blood in the Bodies of Animals, is now past contradiction, from that famous instance of transfusing young vigorous Sap into an old dwarf Pear-Tree, which was done with success by the great Dr. *Bradley*; who planted some young Pear-Stocks in reach of the Head of the old Tree, two Stocks within an easy reach of the best Branches of the old Tree to which they were inarched or grafted, by being inlay'd in the Spring-time of the Year, and were perfectly joined with the young Stocks in less than three Months.

By this, the old Tree, whose Fruit through Age had dwindled to but little bigger than a Hazle-nut, bore larger Fruit than ever, and afterwards became so firm, that he was obliged to check it, by sawing it half thro', and driving Wedges in; but this did not check it enough, for he saw'd the old Tree intirely from its Roots, and then it bore Fruit for several Years. A Pear-Tree, as I hinted before, will endure planting on the very Crust or Turf of Grass-Ground, and is of such force in its Roots, as to make its way thro' the Crevises of a soft Rock, and therefore will do in any Soil; and if I was to plant Fruit-Trees on a Gravel, I would there plant the Pear sooner than an Apple or Cherry, because the former will grow and flourish, when the other will languish and complain. And for want of a due Knowledge of this, many Persons have suffered very much in their Plantations; and certainly, 'tis of great consequence to plant a right Tree on a right Soil, and to a right Aspect. A Pear-Tree is one of the most luxuriant Trees that grows, and where the Soil is *à propos*, it will grow to a prodigious Magnitude, and return Fruit answerable; as the Relation is of one in *Herefordshire*, whose Fruit in one Season made seven Hog-heads of Perry; a fine vinous Liquor indeed, if made of Pears accordingly. I have made near a Barrel of thirty-six Gallons, from one I

have now growing, which is an Orange-Pear; which, mixed with a red Catherine, is said to make excellent Perry. This large Pear-Tree of mine was somewhat hollow thirty years ago; and about twenty Years since, his old Head was intirely cut off, in order to make him more prolifick. It then began to throw out great numbers of Shoots at bottom; but by grazing of Cattle about it all the Summer, they check'd it by their bite, and the new young Head prospered, grew, and bears brave large Fruit to admiration. And where a tall Standard Pear-Tree has got too much great Wood on it, and that canker'd, or full of Mofs, I am of opinion, that this Method is the best to renew and renovate it.

The way to alter the Fruit of any old gummy Standard-Tree.

As Cherries, Plumbs, &c. are Trees that are attended with a Refin or Gum, which, in many, issues and runs so fast as to cripple and kill them, therefore these sorts must be treated in a different manner from Pears and Apples. If you have such a Tree, which does not bear well, through Age, want of Sap, or by too much Mofs or Canker, then cut off all the Head, except a few of the lowest, spreading Branches; for these will employ, draw up and give the Sap room
to

to circulate, that the Tree will presently get a new upright Head; then the very next Summer, or the Summer after, you may bud the several new Shoots with what sort of Cherry, Plumb, Peach, &c. you like best. A Year or two after that, the old Branches may be cut off, and the new Head have the whole supply of the Root; but if these Branches were not left at the time of Lopping, these gummy Trees often die, as I conceive, for want of room to employ their Sap, and the too sudden total decollation of them, whose Ducts and Vessels have for many Years before enjoy'd a free Circulation. And from hence, often, is caused that issuing forth of Gum at the Top and Sides of these intire lopped Trees, which so often proves fatal to them. Now, if it be a hollow or blighted one, the above Method is the best way to recover it, and to renew its natural or improved Fruit; as one in our Neighbourhood did: and the hollow Trees bore afterwards as well as ever. And I have now six sound Cherry-Trees growing, that were near fifty Years old when I cut off their old Heads, (as not liking the small wild Fruit that they bore) and put above ten Buds on the new Shoots of each Tree when they were two Years old, and now they have got large Heads in about six Years, and bear the white Heart and black Cherroons in my Upland Meadow, through which is a Path-

way to *Dunstable*. And the best time to lop them, in my opinion, is about *Christmas* or *Candlemas*, the latter rather best; because the longer the Frost has power of the Cut-part, the more it endangers it: but it must be sure to be done before the Sap stirs. So the Hedger that wants Work often says, it is best to make a Hedge early; but it's found by experience, the latter Season is best, especially an old Hedge. And for want of knowing the way of managing a gummy Tree, I have formerly suffer'd the loss of several fine Cherry-Trees.

To help other sorts of decay'd or barren Trees.

Many are the ways prescribed and practised, as so many Catholicons, for helping and restoring these sorts of Trees; so that if a Tree wants Sap, or has too much of it, one and the same Remedy is to be made use of in both the cases; and therefore as the true cause is first to be found out, the following Applications may be made use of. In case then a Tree is too deep planted, got mossy, or cankered, after cutting the Cankers out, dig up as much Mould as can be got from about the Roots of the Tree, (and some let them lie thus uncover'd most part of the Winter, for the Sun and Frosts to benefit them by their healthful Influences,

and

and in the Spring,) then take up as much Grafs-Turf as will fill up the Hole or Fofs, cut it into pieces, and put it Grafs downwards upon all the Roots. This being full of riches, and lying hollow on them, will in time, by the subsequent Rains, wash down and impregnate the old Roots with new fertile Salts, and cause a renovation of the whole Tree. But this is not all, the Head must be managed as well as the Roots, and that by making use of the back of a Knife, and rubbing and scraping the Tree when it is wet, therewith; or, when the Tree is dry, to rub it and the Arms of it with a Hair-Cloth: this Method is absolutely necessary not only to mossy Trees, but on the most healthful, in order to keep them so, and prevent Moss, and is, in proportion, as requisite as currying to a Horse: for the Bark to the Tree is as the Hide to the Horse, and both require dilating and cleansing by frequent rubbings and scrapings with proper Instruments. This usage I have known to recover and bring into an advantageous state of plentiful bearing, several old large Apple and Cherry Trees, even without digging or breaking any Ground: the Trees were over-run with Moss, and turn'd to little account, till a poor Day's-man took the Orchard, who, for the sake of obtaining Fruit to pay his Rent, was tempted to
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use his diligence in this manner, of clearing the Trees of their Mofs.

Others again, will dig up the Mould about the twentieth day of *June*, when they make their new Shoots, and apply dead Dogs, Sheep, or other Carrion in its room, to the great amendment of the Tree; also the Blood of Hogs, or other Cattle, and likewise the Excrement of their Paunches is of great importance. And this last Spring I apply'd to the Roots of a young Vine that grew against my House, the Blood of a Hog; but at the first coming of the hot Weather, the Blood began to be offensive: I therefore took a Pail of Wood-Ashes, and covered the Border all over, which being wash'd in by the Rains, the fix'd Salt of the Ashes soon overcame the ill stench of the Blood; and both these by emitting their several Salts to the Roots, made the Vine shoot more in one Summer than it had done, I think, in three before. From whence I conclude, that Ashes in particular, moderately made use of, are of an excellent nature in promoting the Growth of the Vine, or any other sort of Fruit-Tree whatsoever; and so is the Salt of Urine, if prudently used. An Example of its great Efficacy I saw at *Dagnal*, about a Mile from me, where, against the Back-door of an Ale-house, there was one grew, and bore more Grapes, they said, than any one Vine in ten Miles round, against a South-East Aspect;

Aspect; and this great fertility, they own'd, was owing to the People's pissing upon and about the Bank that cover'd the Roots of the Vine. Yet here I would remark, that altho' the two ways above mentioned are very good, I should think the laying all Turf about the Roots is rather too solid, and will become too hard, so as to hinder the Rain and Air coming easily at the Roots; and all Furze will be too hollow: therefore I am of opinion, that a Layer of Furze and a Layer of Turf will do best. Some will take Chalk and put next upon the Roots of a mossy or too deep-planted Tree, and cover with Turf.

Of checking the Sap in Trees, to make them more prolifick.

The Extreme of too much Sap is a grievous fault, and is always an Enemy to Fruit-bearing; and therefore sometimes a Tree will by this means run into Wood, and not into Fruit. Again, it will sometimes be overpower'd with Fruit, but then it is small, and will not bear again perhaps in three Years. In this case, lay open its Roots in *February*, and cut off close by the Stem, some of the largest Roots, with a sharp Chizzel, then throw in the Earth presently; this will hinder an overflux of raw Sap, and help it to digest its Juices regularly.

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Where the Sap is too firm in a Pear-Tree, either Wall, Dwarf, or not too big a Standard, then cut his outer and inner Bark quite round four Inches broad to the naked Body, and it will grow and bear Fruit the better; but no other Tree will bear this usage: because the Pear-Tree having the largest Pith, the Sap has sufficient passage that way: And this I have seen done to a Wall-Pear at *Penly*, which bore Fruit the better for it afterwards. Another way: Suppose your Tree in an Espalier is too strong in its growth, that most or all its Wood is over-luxuriant to bear the next Year; then from the middle of the Tree let a strong Shoot grow up, to carry up the most watry Juices, and the young Wood in the lower part will bear, while the other may be trained to make a Head above the Espalier, and will also bear plentifully, whilst the bottom part will also produce abundance of Fruit. Another way is, to mark the Bark of a Tree round and round, in a screw-like manner, and cut the Bark in those Marks to the Wood, about the tenth part of an Inch wide. There is another nearer way than this, of making Trees bear Fruit; and that is, by budding, or grafting them with Buds or Scions of good bearing Trees, which having a good-digested Sap in them, will communicate it to the several parts of the Tree, and make it fruitful.

All transplanted Trees are certainly very much check'd at their removal; but the Art is to find out a Method best to preserve them from deficiency. For my part, I think the very best natural Season to remove a Tree in, is *October*, and in a moist time, when the Ground is thorough wet, and to replant it as soon as possible with as much Mould on it as can be brought away. As to planting at Midsummer in Mud, and keep watering the Plant after, it is right, and only so, when necessity obliges.

*Of the Aspect, and the Exposition of
Trees, and their Shelters.*

There are old traditional Directions repeated in Books, That a Tree in removing or transplanting, should be first marked in the Bark, that it may stand just in the same manner to the South as formerly; and also that they should be set in such an Age of the Moon. But both these, and many more, are justly confuted by the more sagacious modern Authors, and more substantial Truths and Methods instituted in their room. Yet it is of great consequence to plant a Tree in a right Situation and Aspect, both against a Wall or a Standard. In a Field, where a Row of Trees are planted on a Baulk, they generally are not far from a Hedge, which if thick and tall, may shelter them whilst young,

young, and after, if they run not very high, from the North and East Winds, &c. This so much defends the Fruit-Trees, as many times to hinder their Blights, when others suffer. And likewise in planting an Orchard, the tallest sort of Trees ought to be set next the North, North-East, or North-West, to defend the more short from the violences of those quarters in particular. And not only so, but the very particular sort of Fruit should be consulted, that they may be such as are most hardy. Indeed, Mr. *Bradley* carries this intimation farther, and lays a great stress on chusing and adapting Rows of one intire sort of Fruit, or wholly a Plantation of one sort of Pears, Apples, &c. because when they are planted promiscuously, the *Farina* or Seeds are carry'd in the Blossom-time by the Winds from one sort to another; which occasions a kind of adulteration in the Fruit, and alters the genuine taste in those Fruits, that otherways would have them. According then to this Doctrine of his, how valuable must this Field-Planting be? For here, the Trees in their great distance of Rows are cut off of that sort of prejudicial communication, and the Fruit enjoy'd in their original and true pristine State. And this reminds me of the complaint I have of late Years heard, that the true and great *Kentish* Pippin is so degenerated, that now there is none to be had as formerly for good-

goodness and bigness. It seems therefore, according to my conjecture, that the want of this Knowledge and Practice, may probably be the occasion of it.

Of the Choice of Fruit-Trees.

Trees are certainly like Animals, as to Youth and Age: And here I must own my mistake, which some Years since I was guilty of, in preferring old large Apple and Pear-Trees before young smaller ones. And being in a Nursery at *Redburn*, I thought myself in the right of chusing these large Trees about twelve Years old, to transplant in my Fields; when the same Season I had some from *Brentford* about four Years old, that grew at least three times faster in one and the same Field. The former I had off a poor Ground, which, according to the shallow and utterly wrong Notion of some, is esteem'd a valuable opportunity, when from thence they are transplanted into a more rich Soil: but this I have found to be a very gross mistake. To explain which, I refer, as I said before, to the Animal Kingdom, where 'tis obvious, that if a Beast in his Youth is stunted for want of sufficient Food, &c. he will never thrive, nor arrive to that Bulk of Body and Tallness, as his Fellow that was brought up under the most plenary Advantages; even so it is with a Fruit-Tree,

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as they may surely prove that try the difference. In a Nursery, particular Care ought to be had in the inspection of Trees, that none may be made choice of that has a Canker, or any tendency thereto; for this is a malignant Disease, and is seldom cured but by cutting out: so no less Care is to be had in buying those that are well rooted; for without that our hopes are vain. And notwithstanding the common Cant of the Nursery-Gardeners, who often impose on the Ignorant, by telling them this or that Tree will grow, altho' but half or a quarter rooted, give them not credit. It is true, they may grow and languish for a little time; but the former Reasons I have laid down, of the loss of our Hopes and Profit, the precious Time and Ground, is enough, I hope, to prevent this Imposition. A great Fruiterer in *Thames-street*, told me, that great part of our Apple-Plantations ought to be extirpated, or their Heads cut off, and better Fruit put on; for that in the room of others, the Golden Rennets, Pippins, and Pearmains should be planted; for their great use, I suppose, in making Cyder of that sort, as at this time of day is reckon'd most wholesome to the Body, and agreeable to the Palate, and also for their great Use in the Kitchen, and at Table, above others. And here I add my Sentiments of another sort, which is now very much in vogue, namely, the

the Non-pareils; I mean such as are grafted on the free Stock, in order to become tall Standards, as some are by me on high Ground, and a cold loamy wet Soil. This Apple is a Bearer on such a Tree, and has a great many good Properties belonging to it; it is an Apple that will make very good Cyder, and now generally preferred at Table. It keeps a great while, provided due Care is used in its Conservation: Not as soon as gathered put in heaps on Wheat Straw, as the common way is, for that generally terminates in their Rottenness, because the Fruit will in a little time sweat, and naturally expel their Phlegmatick and crude Juice, which will not fail of wetting the Straw they lie on; and this, after the Sweat is over, will consequently rot the Fruit: for all keeping Fruit has several Arch-Enemies attending it; the one is Moisture, the other Frost, and the third the ill Savour of the Place, or Boards on which they lie. The first is prevented by letting them lie in heaps in large tall loose Baskets, such as the *Thames-Street* Fruiterers use; or on Oak, and not Deal-Boards (unless they are very old) else the Turpentine Scent will affect the Fruit; and lastly, by keeping 'em in such warm dry Places, where neither Frost, or Moisture can do them damage. I have drank such Pippin Cyder, as I never met with any where but at *Ivinghoe Arson*, just under our *Chiltern*

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Hills,

Hills, where their Soil is partly a Chalky Loam: it was made by its Owner, a Farmer, and on my recommendation our Minister went with me to prove it, and gave it his Probation. This was made from the *Holland* Pippin: and of such a wholesome Nature is the Pippin of any sort above all others, that as I remember there is a Relation of its wonderful Influences, I think it was in *Germany*: A Mother and two or three of her Sons having a Tryal at Law, were ask'd what they eat and drank to obtain such an Age, which was 4 or 500 Years that they all made up amongst them; they answered, chiefly by eating the Apple, and drinking its Juice. And I knew an eminent rich Lawyer, almost eighty Years old, who was very much debilitated thro' a tedious Sicknefs, on the telling him this Story, got Pippins directly, sliced them to the number of a Dozen at a time, and infused them in Spring-Water, and made it his common Drink, till Cyder-time came on; also he fell on planting a Number of Pippin-Trees in order to his enjoying their salubrious Quality, and a fine Plantation there is at this day in his Gardens a few Miles from me. This Practice of his drinking the Pippin Liquor and Cyder, answered extraordinary well, for he lived several Years after, in a pretty good State of Health.

To make a Stronger Cyder than the common way:

Not in the Screw-Prefs, so well as the Lever-Prefs, because the first confines the Bag too much, and so the middle part of the Bag escapes the regular Pressure that the two Outfides enjoy. But the latter has the greater opportunity of forcing most part of all the Apples in the Bag. Now to have the best part, is to squeeze the Apples in the Bag very softly, and but little: this first running of the Apples is as the first Wort of Malt.

Of Planting the Sides of Barns and Out-houses, &c.

And here I must take notice of a general Misfortune, that I frequently see in my Travels, of many brave Sides of Barns and Out-houses, Pails, and sometimes Partition-Walls, lost (as I may say) by being not improved with Trees answerable to several Aspects and Bearings; and the rather, for that the Thatched Eves hanging more over, and being more thick than those of Tiles, are so much the more valuable, for their great security in preventing Blights. For most of our Blights in Spring and Autumn fall perpendicularly; that is to say, the condensed

Vapours, falling from the upper Region, do form themselves at Night, when the Sun has withdrawn his hot Influences, toward the Surface of the Earth, in Dews and watry Drops, subject to be frozen by the coldness of the Air. And therefore the more any thing lies open and expos'd to the perpendicular descent of Vapours, the more will it be subject to be frozen and blasted; the truth of which is confirmed to us both by Reason and Experience: for the Observation of this is plain, when the Leaves and tender Shoots of a tall Ash-Tree, in one of those blighting Nights, may be seen to be frozen and as it were findged at the bottom and middle parts of the Tree; whilst the upper part, that is exalted above the Influence of the Mist, shall be left free and untouch'd. But as to the black Wind-Frosts which come more Horizontally, altho' these Eve-Shelters are of singular advantage, yet I am forced every Spring to make use of our common five-floted Hurdles of eight or nine Foot long, and about four wide; these I have drawn with Straw-bands and woven thro' the same, which I put against my Wall-Fruit slopewise; and these are in my Opinion far better than Mats, because they are of less Cost, and admit more Air to the Trees, when at the same time they keep off the Wets and Frosts in a great measure, are easily put up and down when the Weather encourages, and do not break the Blossom

nor

nor Fruit, which Mats often do. And such Advantages have been found in defending the blossoming Trees from the Wets, that some have put large Frames of Glass over, or before some of the best Sorts, when they are in Flower, and hardly a Blossom misses setting for Fruit. I suppose the Rain in this Case prevents the flying about of the *Farina fecundans*, or impregnating Dust, without which, Generation in Plants becomes abortive; so that it cannot perform its office of setting the Fruit, or in other Terms to light upon, or enter the *Uterus* of the Blossoms. This Dust, Mr. *Bradley* says, is the Male-Seed, and must be received into the *Uterus* of the Female, in such a manner as to reach the *Ovum*, and even to lodge itself in that Egg, before the Female can become pregnant. And again it is no less certain, that the Seed of all Animals in Health abound with living *Animalcula*, some one of which, when received into the Egg as its proper *Nidus*, becomes in due time a perfect Animal according to its kind. These *Animalcula* are easily discovered by good Microscopes; and that some of the *Semen*, which abounds with these *Animalcula*, does pass into the Egg itself, is evident from the Observations one makes every day of the Cock's-tread, in the Eggs of Fowls and Birds, without which it is known that the Egg will be unproductive. So it is plain, that if the Male-Seed

does not pass into the *Ovum* of the Female, the Female cannot become pregnant, nor be productive of its own Species. The Proof of this is plain also in Vegetables; for if a Hazel-tree stood in a place distant from any other, and the Catkins were timely in the Spring cut off, there surely would be no Nuts that Year on the same, because this is a Gelding or Castration; for the Catkins retain the Male part, and the small reddish Blossoms the Female; which at a due maturity opens, and by the Wind receives the Male Dust that is so blown from the Catkins, and becomes impregnated. Again, there is a terrible Misfortune that sometimes happens by Vale or Dale Mists, especially when they are accompanied with a Frost, and when at the same time, the hilly Grounds about them entirely escape; and even on *May-Day* it has totally destroyed the young Mulberries, Cherries, Plumbs and Walnuts, &c. Which proves that Hoar Frosts in *Spring* and *Autumn* are most dangerous Enemies; but dry Frosts are not so bad as wet ones. To prevent then in some measure these disorders, some of late have planted most kind of Fruits to a right Exposition of the Sun against Espaliers, which they guard both before and behind as they see occasion, with portable Reed Hedges in Frames; so that the Trees cannot easily receive any harm, either from the blighting Winds or Rain: for these

Frames

Frames may be set so close to the Espaliers, that the Rain cannot get at the Blossoms to wet them; for Rain, when the Air is in motion, cannot fall exactly downright.

Transplanting of Trees.

Transplanting of large Trees I think is done in the best manner, when they dig a large Trench or Gutter about them, in *October* or *November*, that the Frost may come more immediately round the Tree, Root and Mould, and will keep all three so firm together, that they may be taken up by the help of Pulleys and Levers, or by Levers and Mattocks, and carried on a Sledge to any other Place.

But young Trees may be easier done, by drawing them leisurely out of the Earth, or dug up with all the Roots that can be got, and with as much Mould as can be brought away with them, and set in Virgin Mould; always endeavouring to spread and lay the Roots severally in their new Place, and plant as is before directed.

If necessity obliges any Person to transplant in the *Summer*, then Mr. *Bradley's* way is best; that is, to plant the Roots in a Pap, or Mud, and keep watering throughout the *Summer*. This indeed will make them strike, and make new Roots directly, altho' transplanted with the Head and Fruit on.

As I remember, it was about the Month of *April*, when that generous Gentleman, *Richard Screen Esq*; whose Seat is near *Bath*, gave me leave to present him with some Cuttings of White-Elder, of about two Foot long, which I did, and sent them to him at *London*; where I desired he would let his Servant soap the ends of them very well, as I did here before I sent them: he was pleased afterwards to return me his Thanks for the same.

Also, as an Author says, if a Tree be carried a great way, even in the open Air, it may be safely done by washing the Roots, and anointing them with Soap all over.

Currants and Goosberries may be made to grow as Standards, the former twenty Foot high, and the latter twelve. The Goosberry at first, as well as the Currant, must be staked up: The Currant will also cover an Arbour well. The great white and red *Dutch* Currant is a fine Fruit. But for the latest Experiments and Methods to improve them, I refer my Reader to Mr. *Cowell's* Curious and Profitable Gardener.

EXPLA-



EXPLANATION of some WORDS in this BOOK.

A*SPECT*, is such a Position or Bearing of the Side of a Wall, Barn, House, or Garden, to the *South, East, North, or West.*

Back-bouting, is done by drawing the Plough once forward and backward, thorough that which has been boughted.

Baulks of Grass, are those which some call Hedge-Greens; they lie next to the Hedges in ploughed Fields, and serve to turn the Plough-Horses on.

Boughting, is made by two Thoroughts, that the Plough by going backward and forward, throws up against each other.

Broad-land Ploughing, is just turning an even Piece of Ground topsy-turvey, and is the neatest, cleanest Ploughing of any other.

Combing, or *Hacking of Land*, is made by the Plough's being drawn forward and backward closer than Boughting in smaller Thoroughts,

Thorroughs; and tho' a little sharp Ridge, or Sleeving be left, yet in a manner, this is near clean Ploughing.

Four-thoroughing of Land, is not clean Ploughing, but running up four Thorroughs close together with the Plough; is best done off Wheat-Stubble Stitches in the *Winter*, to sweeten for Pease or other Grain: or Broad-Lands may be ploughed into four Thorroughs, a good Method.

Horse-houghing, is so called by reason it saves Man's Houghing; not that a Hough is used by Horses, but their drawing a Plough in a particular manner supplies the use of a Hough.

Hove in Cheese, is a Hollowness with Eyes, caused by being made from Clover.

The Hoving of a Cow, is otherways a Swelling caused by the Wind, in Clover or Lucern Grass.

Kerning Ground, is that which, dressed well, will produce a great quantity of Corn, as Gravel does, when others will run more into Straw and less Corn.

Loamy Ground, is that between Sand and Clay, of a Hazel Colour, and is of all others the best Sort.

Nitrous Dews, are Salts in the Dews, which are beneficial to all Roots they come at.

Smutty-Wheat, is that, which is discovered by its Black Ear, and may be seen in standing

standing Corn, from that which is found. Upon rubbing it on the Palm of the Hand, it will leave a Black Powder like Soot.

Tilth, or *Tilt*, is Ground reduced by the Plough and Harrow to a Fineness or Powder.

Thoroughing down, is drawing the Plough once thorough the Bout, to lay it plain, for Wheat or Barley.

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