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A
COLLECTION
OF
LETTERS

For the Improvement of

Husbandry & Trade,

By JOHN HOUGHTON,
Fellow of the *Royal Society.*

LONDON,

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A

COLLECTION OF LETTERS

For the Improvement of

Husbandry & Trade.

THURSDAY, Sept. 8. 1681.

The Contents.

A Preface. A Catalogue of the Books in the Library of the Royal Society relating to Agriculture. Enquiries concerning Agriculture. Some advantages we might receive by Inclosure. An account of a great advantage made by Clover Grass. An account of the way they cure Neats Tongues in London. A particular of a great Gain made by the means of Cole-Seed. Some Considerations about Trade.

A Preface by way of Letter to the Reverend J. B. D. D. and S. R. S.

Reverend Sir,

THE Royal Society of London hath already procur'd, as you well know, a great number of Books, Natural and Artificial Rarities, Experiments, Collections of Letters, and other ingenious Dis-

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courses of a very great many Subjects, as may be seen in their Library, Repository, Letter-Books, Journals, and Registers; but notwithstanding this, the delight they take in knowledge, and love they have for the improvement of their Country, hath encouraged them to revive their Committee for *Agriculture*, whereto they bring (as into a common Treasury) their Experiments and Observations, and raise such new *Queries* as they think may prove to be the Seeds of good effects.

Of this Society and Committee I have the honour to be a Member, and by consequence the advantage of hearing there Discourse, and perusing their Library, and not only so, but some of them (I thank 'em) have help'd me to such Correspondence, as will, by the help of my own Friends and Industry, furnish me, I question not, sufficiently to make good my Title.

And to you Sir, being one whom I particularly know to be a great favourer of any thing that tends to the improvement of your Country, and to whom I am oblig'd for very many favours, I make bold to dedicate this, advising you, that my design is often to publish such Papers, as shall cause this Kingdom to be so well husbandry'd, as to exceed not only the United Provinces, but also what on another occasion, you were pleas'd to stile the Garden of the World, *Barbadoes*.

And seeing that what the Husbandman is concern'd for, is the *Materia prima* of all Trade; and that the finding a vent for his Commodities, is as necessary to his end, as it is to know the ways of Tilling, Planting, Sowing, Manuring, ordering, and improving of all sorts of Gardens, Orchards, Meadows, Pastures, Corn-Lands, Woods, and Coppices; as also of Fruits,
Corn,

and TRADE. 3

Corn, Grain, Pulse, new Hays, Cattel, Fowl, Beasts, Bees, Silk-worms, &c. (as Mr. *Worlidge*, who hath given an ingenious account of them, hath it) therefore I design not only to give Instructions for that end, but also the best accounts I can meet with, how they may be advantageously parted with; which will necessitate me often to treat of such things as more strictly come under the second Head of my Title, *viz.* Trade: In handling of which, I shall not, for fear of censure, swim down the Current of the Times, or swallow the vulgar Errors; no Authority shall prevail with me, though it comes from them that are esteem'd the most sagacious, unless I can apprehend it to agree with sense and reason; for you know our *Motto* is *Nullius in Verba*, and 'tis possible I may sometimes take upon me the Office of being an *Observer*: But seeing *Humanum est errare*, and I may be mistaken as well as others, if any body in a kind manner will do the like for me, I shall esteem of him as one of my best Friends; nay, if through an ill humour he shall slander me with a matter of truth, I am resolv'd such Balms shall not break my Head: I'll still rejoyce.

Sir, the reason why I shall publish these in small parcels often, shall be to the end, that they may do the greatest good in the least time, and that not only the Theoretical Gentleman, but also the Practical Rustic may enjoy their benefits; and it is also possible, that if this way causes a greater Consumption, as I reasonably think it will, the *Bookseller* and I may have the better understanding.

The reason of this my Miscellaneous method hath been the Examples of Mr. *Oldenburgh*, Dr. *Grew*, and Mr. *Hook*, in their *Philosophical Transactions*, and *Collections*, considering also that Variety hath its beauty

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as well as Order, and this *Libertine* way of handling this Matter, may perhaps prove more useful, than had I bound up my self to the severest Rules.

I design to stick to this manner of Print and Paper, that they may easily be bound up in Volumes; and though at present I am not fully resolv'd, yet 'tis possible I may in due time make for each Volume an *Index*.

Thus far I thought fit to say, expecting from good Men Commendation, from ill, Censure; which was the fate of our Blessed Master, and shall be of all them who are any ways active in doing the World good services; which I shall always be ready to do, unless it shall interfere with my employment, and prejudice the honest care of my Family, which is a Topic I shall never part with. I know you'll think ne're the worse for my plain dealing, and send up your Prayers for, Reverend Sir,

St. Bartholomew Lane behind the Royal Exchange, London.

Your most humble Servant,

JOHN HOUGHTON.

A Catalogue of the Books in the Library of the Royal Society relating to Agriculture.

Worthy Sir,

It will I think by all be granted, that the Art of Agriculture hath not been a little improved by the use of Books, and more it may, were it well known what are written of the Subject: At present I'll give you a List of what I find in the Catalogue of our Library, and hereafter of what I can meet with elsewhere.

Adri-

Adriani (Presbyter) Carmina de Veneratione.
 Apitius Caelius de re Coquinaria. lib. X.
 Aristotelis Historia Animalium.
 Baptista Jo. Ferrarii de florum Cultura.
 Di Bonardo Richezze del' Agricoltura.
 Cato (M.) de re Rustica.
 Columella (L.) de Cultu Hortorum Carmine script.
 Di Crescentio (Pietro) Agricoltura.
 Forrest Laws, by Jo. Manwood.
 Herbarium Ling. Germ.
 Hortorum Cultura, per Lucium (Jun.) Columellam.
 Macer (Philosoph.) de natur. & virtut. Herbar.
 More (Sir Tho.) Utopia.
 Oppiani de Venatione piscium.
 De Ro. Piscibus.
 De Animal. Industria (per Sym. Grynæum).
 Di Tatti (Giov.) Agricoltura.
 Terentius M. Varro Agricoltura.
 Tobie Aldini descriptio Plantar. in Horto Farnesiano.
 Herbarium (Antiq.) Anglice scriptum. M.S.
 Junii Mod. Columel. rei Rustic. M.S.
 Herbarum nomina & Vires (Carm. Hexametro) M.S.
 Johannis de loco frumentario pars secunda. M.S.
 Evelyn (Jo.) Sylva.
 Bacon (Sir Fr.) Sylva Sylvarum.
 Evelyn (Jo.) of Gardens.
 Cotton (Ch.) Planters Manual.
 Evelyn (Jo.) Philosophical Discourse of Earth.
 Hughes (Will.) Compleat Vineyard.
 Icones & descriptiones Plantarum } Sicilia }
 } Melita } per Paul. Boccon.
 } Gallia & }
 } Italia }

M. Malpighius de Bombice.
 Johnson de Animalibus.

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Christoph. Merret Pinax rerum Nat. Britannicar.
Anatomy of Vegetables, by N. Grew M. D.
Two Herbals.

These are what I have chiefly taken notice of; it's possible among so many Books (upwards of 3000) I may have over-look'd some, but I think none that are material.

Sir, if your leisure will permit you to afford me some of your curious Observations, I'll make the best use of them I can, and you will much oblige

Your most humble Servant,

Enquiries concerning Agriculture.

Honoured Sir,

I know your Designs are good, and seldom better pleas'd than when studying the advancement of your Country; wherefore I make bold to desire you, as your leisure will permit, to send me Answers to these following Enquiries concerning Agriculture, which I find excellently prepar'd to my hand in Mr. Oldenburgh's Philosophical Transactions, Numb. 5. p. 79. as followeth.

I. For Arable.

1. The several kinds of the Soils of England being suppos'd to be either Sandy, Gravelly, Stony, Claiey, Chalky, light Mould, Heathy, Marsh, Boggy, Fenny, or cold weeping Ground; information is desired what kind of Soyls your Country doth most abound with, and how each of them is prepared, when imploy'd for Arable?

2. What

and TRADE

2. What peculiar preparations are made use of to these Soils for each kind of Grain? With what kind of Manure they are prepar'd? When, how, and in what quantity the Manure is laid on?

3. At what Seasons, and how oft they are plough'd? What kind of Ploughs are used for several sorts of Ground?

4. How long the several Grounds are let lie fallow?

5. How, and for what productions heathy Grounds may be improved? And who they are, if there be any in the Country, that have reduced Heaths into profitable Lands?

9. What Ground Marl hath oven head? How deep generally it lieth from the surface? What is the depth of the Marl it self? What the Colour of it? Upon what Grounds it is used? What time of the year it is to be laid on? How many Loads to an Acre? What Grains marled Land will bear, and how many years together? How such marled Land is to be used afterwards? &c.

7. The kinds of Grain or Seed usual in England, being supposed to be either Wheat, Miscelane, Rye, Barley, Oats, Pease, Beans, Fitches, Buck-Wheat, Hemp, Flax, Rape; I desire to know what sorts of Grains are sown in your Country, and how each of these is prepared for sowing? Whether by steeping, and in what kind of Liquor? Or by mixing it, and with what?

8. There being many sorts of Wheat, as the white or red Lammas, the bearded Kentish Wheat, the grey Wheat, the red or grey Pollard, the Ducks-Bill Wheat, the red-ear'd bearded Wheat, &c. and so of Oats, as the common black, blew, naked, bearded in North-Wales; and the like of Barley, Pease, Beans, &c. The Enquiry is, which of these grow in your Country,

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of England

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and in what Soil? And which of them thrive best there? And whether each of them require a peculiar Tillage, and how they differ in goodness?

9. What are the chief particulars observable in the choice of Seed Corn, and all kinds of Grain? And what kinds of Grain are most proper to succeed one another?

10. What quantity of each kind is sown upon the Statute Acre, and in what season of the Moon and Year it is sow'd?

11. With what Instruments they do Harrow, Clod, and Roul, and at what Seasons?

12. How much an Acre of good Corn well order'd generally useth to yield in very good Ground, in less good, and in the worst years?

13. Some of the common Accidents and Diseases befalling Corn in the growth of it, being Mildew, Blasting, Smut? What are conceived to be the causes thereof, and what the remedies?

14. There being other Annoyances the growing Corn is exposed unto, as Weeds, Worms, Flies, Birds, Mice, Moles, &c. How they are remedied?

15. Upon what occasions they use to cut the young Corn in the Blade, or to feed it, and what are the benefits thereof?

16. What are the seasons and ways of Reaping and ordering each sort of Grain, before it be carried off the ground?

17. What are the several ways of preserving Grain in the Straw, within and without Doors, from all kind of Annoyance, as Mice, Heating, Rats? &c.

18. What are the ways of separating the several sorts of Grain from the Straw, and of dressing them?

19. What are the ways of preserving any stores of separated Grain from the Annoyances they are obnoxious to?

II. For

and TRADE.

II. For Meadows.

1. How the above-mentioned sorts of Soil are prepared, when they are used for Pasture or Meadow?

2. The common Annoyances of these Meadow or Pasture Grounds being supposed to be either Weeds, Moss, four Grass, Heath, Fearn, Bushes, Bryars, Brambles, Broom, Rushes, Sedges, Gorse or Furzes, what are the remedies thereof?

3. What are the best ways of draining Marshes, Bogs, Fens? &c.

4. What are the several kinds of Grass, and which are counted the best?

5. What are the chief Circumstances observable in the cutting of Grass, and what in the making and preserving of Hay?

6. What kind of Grass is fittest to be preserved for Winter feeding, and what Grass is best for Sheep, Cows, Oxen, Horses, Goats? &c.

Sir, in convenient time I may trouble you with such other *Queries* as may be pertinent towards the obtaining the end proposed, and question not the assistance of you and your Friends, whereby I may teach every part of the good Husbandry of the Kingdom to every part of the Kingdom, which if I can do, and persuade them also to put it into practice, it will be a very great delight to

Your most humble Servant.

Some Advantages we might receive by Inclosure.

Honest Harry,

I Remember as you and I were riding over the open Fields from Cambridge, you were wondering at the peoples stupidity in not agreeing to have them inclosed, whereby you thought might be made far greater advantages; I have since been ruminating the matter, and what follows is some effect of it.

I take Inclosure to be of so great advantage to this Kingdom, that I am apt to think there is hardly any improvement that hath been thought on this 20 years will parallel it, no not the Fishery; for it would be a means not only to imploy our selves, but also in a great probability to increase us in a few years to at least two Millions more than we are, and that these numbers may not seem to you monstrous, as if I were willing much to magnifie the thing that takes my humour, I'll give you some reasons for this my conjecture.

Captain Graunt, in his Observations upon the Bills of Mortality, pag. 41. supposeth England and Wales to contain 25 Millions of Acres of Land, although I am told by one who is a great observer and inquirer into things of this nature, and also that is able to calculate as well as most folk, that there are 28 Millions of Acres, Gerard Malines in his Lex Mercatoria, saith 29 Millions, and of these 'tis thought that 12 Millions lie waste.

Now whether there be so much waste I am not able to determine, but that there is a very great deal I suppose very few will deny: But because 'tis possible that by reason of our late great inclosure, there may be some over Reckonings, and it may be very convenient for His Majesty, and some others, to have Parks, I'll

I'll suppose only the half part, and that's 6 Millions of Acres. The Law would have no Cottage built without four Acres of Land be laid to it, and 'tis not often that this Cottager's Family is composed of less than four persons, 'tis probable one with another 'tis nothing less (for they generally know better how to get Children than Estates.) at this rate there would be Livelihoods for 6 Millions of people more than now: Moreover the common Fields that bear plenty of Grain two years in three; by inclosure, and a Liberty for Men to manage it for their best advantage as their necessity, ingenuity, and friends, should teach them, I am apt to think would imploy more than now half that number, besides the Seamen, Citizens, Shopkeepers, and Carriers, that must necessarily attend this great people, in all they would be a prodigious quantity; but lest, as I said before, I should be thought to misreckon (altho I would be glad to see more reasonable conjectures) I'll modestly suppose but 2 Millions.

If it be objected that this quantity of Land will be too small for maintenance, 'tis answered, That our former Parliaments did not think it so, and I have allow'd four times the quantity; I question whether the United Provinces allow so great a share, but however I'll tell you a short passage I met in a Book written by Mr. Robert Dalington, Entituled, A Survey of the Great Duke's State of Tuscany, Anno Dom. 1596. and printed at London for Edw. Blount, 1605: where giving an account of the Country, he in pag. 30. says thus:

I can avow, that going up with another English Gentleman to the top of a steep Hill some two Miles high, right over Prato, to give our Eye the view of that pleasant Valley, we could not discern any one piece

piece of Ground above one Acre and an half in our opinions, (except the Great Duke's Pastures about his Palace of Poggio) all which Ground being bare, and the Hedges green with the Vines, gave a very pleasant and delightful Prospect, resembling very fitly a Chequer Table: Now if the good Stars raise one of them to the fortune to be possessed of one of these Garden Plots, and a *Cappanuccia* (a silly shelter covered with Reeds) thereupon, you shall never get him from the discourse of his *Villa*, his *Podore*, and his *Entrata*, his Farms, his Lands, and his Rents, that one would think him Lord of some goodly Palace, and as much Land at the least as a Nag might well pace about in a day; when if you come to see it, it proves not, God knows; above the *Giornata* (a days Journey) of a Snail, and she, poor Worm, if taken, *domage faifant*, in danger to be seized upon to the Lord's use of the Soil; for Snails, Frogs, Hedghogs, and such-like, are accounted among the *Delicatezze*, the Delicates of *Italy*. Thus far he.

My Author also farther tells me, That the Landlord hath one Third of the whole Product, the Tenant another, and the Great Duke the rest, if not a better share.

Now methinks if they can do all this, and live as they call splendidly, a whole Family in effect on half an Acre, surely we might live very well on 32 times so much; but a great many Farms would be much larger, because many would leave their shares for Manufactures, and to live in Towns and Cities.

But to this 'tis likely will be said, 1. 'Tis true that *Solomon* saith, *A multitude of People is the Glory of a Prince*: But how is it possible for these to be gotten hither, is it likely that so many people will run from their own Country to another that they never yet had experience of?

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2. We have a great deal of barren Land, and some of it so bad, that 100 Acres will hardly keep two Cows; how then shall 16 Acres keep a Family of four people?

3. Suppose all you have said were very reasonable, and really true, yet if you cannot get those to whom it belongs in the humour of doing it, what will all you have said signifie?

To the first Objection I answer, What *Solomon* saith is really true, and therefore I do much wonder that any who believes him should hinder the thing. And I will shew you by several Instances, that Profits (tho sometime with hazards) draw much people; witness *Spain* with its Inquisition, for how many *English* and *Dutch* Protestant Factors flock there daily, and quietly submit to that Government, so they may have their Trade free? Do they not also run among *Heathens*, and those that are most barbarous? Do they not run to the *Indies*, *China*, *Japan*, the *West-Indies*, *Guinney*, *Arabia*, *Algiers*, and other Nests of Pirates, *Turkey* and *Russia*? Do not the *French* flock yearly by thousands to *Madrid* to be their Porters and under Servants? Hath not the Wealth of *Holland* drawn Millions? And at home do not the Country folk run to *London*, and other Towns? And from *London* do they not send their Factors to every place of Trade in the Kingdom, and hunt up and down daily to get a Customer?

If these things be true, as few I suppose will dispute, and if inclosing and improving our Land will employ more people, what then should hinder but ourselves should fall to work, and Foreigners should come hither to us as well as they, or we have done to other places?

To the second Objection, I grant we have a great deal of Ground that's called *Barren*, but whether much that

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that is truly so I question, for I have seen Ground whose surface was deeply cover'd with white Sand, as if it were pour'd from a Sand-box, and there grew Turneps; upon rocky Mountains, and gravelly Hills, grow mighty Oaks; since Clover and Sansfoil came in fashion, there's Examples enough, that Acres that were not worth 2 s. a year, are made worth 30. I am told, that in *Norfolk* as I take it, or near there, the Sands are carried about almost as Tides carry Water, and would make for ought I know a good place for Mummy, yet here they esteem it not altogether barren, but have sown some with Hay or other Seeds, and cover'd it with Bushes or Furze, and stak'd them down 'till after a year or two, in which time grows a green Soard, and so the Sand is conquer'd. Were all this good Husband's Neighbours of his own mind, I am apt to think they might quickly make this barren Wilderness a fruitful Spring; and if *Hampstead* Heath, and many such-like, will yield Gorse and Furze, Fearn, Wild-Time, and such-like, methinks 'tis hard if 'twill bear nothing else that's profitable. I know an ingenious Gentleman that has offer'd 30 years purchase for a small part of the aforesaid Heath as the Townsmen should value it, and to give the Lord's Steward a considerable drinking Penny for procuration.

'Tis these and many other considerations that makes me think the Objection insignificant. Oh that I had influence enough to put it to a Tryal, if it did not succeed, I'd be content ne're to be drunk this seven years; if it were to be kept with Bread and Cheese and Sixes for a twelve Month, I'd run the hazard.

To the third Objection I can say only this: That if people will be humourfom, they must be so. Altho I hope the *English* to be Men of the greatest *Courage*, yet this I dare say for a great many of them, That they are

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are very willing to be conquer'd by truth, and scorn an Equivocation, when they plainly see that Reason deserves the Victory; witness the many Inclosures have of late been made, and that people daily are on gog on making, and more I dare say would quickly follow, would they that are concern'd and understand it daily persuade their Neighbours.

Would Lords of Wafts enquire who alone it is have right of Common? Would Tenants be content with a double value of what they can pretend to? Would the Poor be content with a mighty Plenty, a great deal of Work, and larger Wages? Inclosure would quickly follow.

Would they who plough in Champain Grounds but change their little parcels? Would they who have 6 or 8 Acres together, make a Ditch of 6 or 7 foot wide and deep, and fill it if they could with water, and carry away the Bank that it might not be thrown in again, Hedges might chance to thrive, and in two years (tho they to please the people might at certain times lay it open) they'd raise more Money than they use to do in six. Would the Reverend Clergy not oppose, but encourage, considering that richest Parishes can yield most profit? Would all these things happen, or what is more than all, would our Honourable High Court of Parliament prepare a Bill to this purpose for the Royal Assent, I question not, but that I might live to see the two Millions, and many that are now living, as many of their Children born among us.

And why should I doubt of this, when most of our Nobility and Gentry are daily conversant about Improvements; I do not doubt it, if two or three generous Souls would but promote a Bill.

This! this! 'Tis Inclosure will make *our Toaks easie, our Burdens light*; 'tis this will improve our Lands

and Mines, and bring in the Linnen Manufacture ; 'tis this will fill our Cities and Country Towns, and increase and vend our Woollen Products ; 'tis this will bring us our Neighbours Arts, and get us abroad a mighty Correspondency ; 'tis this will employ all our Poor, and shift them from their Shelter and Dens of Laziness ; 'tis this may find out some new Discoveries, and encrease and encourage our old Plantations ; 'tis this will, by reason of more Consumers, encrease our Fishery, and make us want (instead of complain of) many Ships ; and 'tis this will strengthen our selves, and frighten or annoy our Enemies ; and why an increase of people 20 or 25 per Cent. will not encrease His Majesty's Revenue to almost the same proportion, I want another *Oedipus*.

In the sweat of our Brows we are to eat our Bread, and that's our happiness, none eats sweeter Morfels than the labouring Man : If we get this Inclosure, 'twill increase our pains, and to get Employments is most Men's strife, and that Land is best husbandry'd that procures most Money, the best way to encrease Labourers.

If this pleases you, persuade your Neighbourhood ; and if you meet with any material Objections, pray let me have them, and you'll much oblige

Yours,

An account of a great Advantage made by Clover-Grass.

SIR,

I Am very glad you have undertaken this Task, and question not but that in a little time the Kingdom will have reason to give you thanks, for my part I do, as very well foreseeing its advantages ; if any thing I do or can may be assisting, you may command me, and in answer to the Enquiry about Meadow, *Num. 4.*

viz.

viz. which are the kinds of Grass, and which the best ? I'll tell you what success I have had by *Clover*.

I have a piece of Land that used to be reckoned 8 Acres, it was a common Field, and usually by my Predecessor let for 3 *l.* the year : This I enclosed two sides of (the other two sides lying to other inclosure, being done to my hand) making a Ditch 5 foot deep, and 6 or 7 foot broad ; and the Earth thrown out, I carried off, and laid it on the Land, which did me two kindnesses, *viz.* improv'd my Land, and took away the opportunity the Rabble might take of filling up my Ditch again ; then I prepared my Land as usually 'tis done for Oats and Clover Grass, both which I sowed, and all my Charge amounted to about 17 *l.* and that year I made about 20 *l.* of it, and the next year without any great matter of fresh Charge it made me 40 *l.* and it hath given me very good content since : I must confess I never mowed it, or let it run to Seed, but it was eaten up by Cattel at so much a Head, which I did for this reason, thinking that if so great a Burden should have been carried off, it must have impoverish'd my Land ; but if spent there, it could not much prejudice, if it did not amend it by the Water they drank, and spent on't, and the warmth they gave it by their lying on't : Besides this, I think all the Hogs in the Town smelt it, and all the Art I could use did not keep the Fences good enough to keep them out.

I question not but I could do the same over again to great advantage, but it lies near me, and hath a pretty good green Soard, and I design to keep it for Grazing.

Several of my Neighbours have found good advantage by it, and other new Husbandries, of which hereafter I may give you some farther account, *Interim* subscribe, &c.

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An Account of the way they cure NEATS TONGUES in LONDON

SIR, I Give you many thanks for your Letter about Clover Grass, and particularly for your account of the great Ditch, and carrying away the Mould; seeing Reason among the Rabble seldom doth good, I think this one of the best Contrivances that ever was found out; but yet if we do encrease in Pasture, and do not find a vent for what it feeds, 'twill avail us but little: Wherefore Ie put you in mind of a saleable Commodity, viz. Neats Tongues, and tell you how at London they are rarely cured.

Take Peter Salt, and common White Salt, of each a like quantity, and a little Bay Salt, with this rub the Tongues very well, and pack them as close into the thing you salt them in as ever you can, letting them lie in Brine 12 or 14 days, or until they are pretty hard, and salt them 3 or 4 times with fresh Salt in that time, putting them into the same Brine again (for the Brine will last a good while) be sure when you salt them, that you wipe off the slimy stuff at the Root of the Tongue clean away, and when they have lain the 12 or 14 days, wash them in the Brine, and put Strings at the tips of them, and hang them in a Stove for that purpose, and with Deal Saw-dust make a Fire under them, and dry them.

The manner of the Stove is thus. They use a Garret Chimney, and let there be at top no great hole, and they make close shutters below, then they throw Sawdust enough to last three or four Days; they hang the Tongues on a Pole, that they may hang about a yard from the Fire, then they kindle the Sawdust just at the edges, and when the Shutters are closed it gently burns till they be dry.

The

The Peter Salt may be had in London at most places where they sell Salt, in small quantities, and in greater at the Houses where they refine Salt Peter. I humbly conceive that if this were minded as it might be, it is not a little trade we might make of them, and in London there are some already that make it their whole business. Be pleas'd to accept this from, Sir, Yours

A Particular of a great gain made by the means of Cole-seed.

S I R,

Since I have been acquainted with the excellent design of promoting the Husbandry of England, as much as in you lies, I have been inquisitive after such as I think may tend that way, and Ie tell you what I met with in a late Journey I took to Theobalds.

There's a considerable Gentleman who hath inclosed a piece of ground containing six Acres, this he Ploughed and ordered as for Wheat, and about Mid-Summer he Sowed it with Cole-seed, he had also a hundred Welch Ewes which he would have sold to the Butchers, but they would give no more than half a Crown the piece for them; upon this, about the beginning of November, he put them into his Cole-worts, they happen'd all to cast their Lambs before Christmas, some of them a Month before, these Cole-worts fed the Ewes so well, that the Lambs were sold off from 8 to 14 Shillings a piece; when the growth was eaten up close, he sold the hundred Ewes for a hundred Crowns, and then prepar'd his Land for Oates, which he Sowed there, and receiv'd from each Acre eight Quarters, and all this losing no more time than he would have done for a Crop of Wheat.

This is no Romance, I had it from the Gentlemans own

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own Mouth more than once, his Neighbours own it as much as could come within the Virge of their knowledge, for they did not stand by to see it thresh't, (altho his Credit is Authority sufficient) the ground was no new broken up ground, and for my part I do not think the matter unreasonable (as to the keeping the Sheep and the quantity of Oats, 'tis possible others may not have Lambs so soon, and in some places not so good price, this being but 12 Miles from London) for like Pease so great a burden (especially being broad leav'd) must needs keep upon the ground most of the Dews and Rain, and not suffer the Sun so soon to exhale them, which did certainly mellow the ground, and for Dung and warmth from the Sheep it could not want.

I hope this Example will encourage others to do the like, which if I hear, 'twill encourage me to make farther Inquiries of the like nature, *interim* I take leave, &c.

Some Considerations about Trade.

S I R,

These Salute you, I am very well satisfied of the good Wishes for the Prosperity of this Kingdom, and agree with you (if Wealth be Prosperity) that Trade is a cause of it, and therefore with 'twere better known than 'tis; But should I go about to teach it, I must expect to be told that I talk like an Apothecary (*id est*, with more Sence than the generality of People can Comprehend, which I am willing to believe is the meaning of the Proverb) but however altho in this Trading Age I do as it were, hold a Candle to a great many Suns, yet I am sure there are some who follow the Practice altogether without, or at least

least with a very false Theory; there are others also who do not practice, but for want of a true Theory very much prejudice them that do.

Trade is a Subject that hath not only taken up the Thoughts and Time of Private Men, but also of late Years especially hath been one of the main concerns of the greatest Princes; were it thoroughly inquired into, it's probable it would be found to be the Source from whence most of the Distractions have had their Original, that *Europe* of late Years hath groan'd under, and the means also by which it hath enjoyed its Glory, Splendour, and Plenty, and no small part of its useful Learning. Particularly this our Country of *England* hath been none of the least Reapers of her Benefits: And I think we have not yet attain'd the tenth part of what we might, did we but rightly understand it, and throwing away all private interest, strive to lead and perswade each other to do in this Affair our utmost.

In order whereto, hoping to have a Charitable acceptance for my good meaning, and to stir up some better *Genius* to improve so good a work, I'll consider Trade in general, and particular.

And first in general, and therein I'll consider,

1. What Trade is?
2. What is the End we aim at in Trading?
3. VVhat is the Matter of Trade?

Trade (as Mr. *Lewis Roberts* in his Map of Commerce, *cap.2.* faith well) is nothing else but a Comutation, Bargaining, Contracting, or Exchanging of one Man with an other, and by giving by one, so much of one thing or Commodity, to have of the other so much and the like of some one other different Commodity else; for God, tho he hath made Man of an excellent Nature, and but a little lower than the Angels, and indued him with an extraordinary VVit and Understanding,

derstanding, and a Body of such apt parts, as will enable him to make for himself any needful, or delightful thing, yet for the Love he hath for his beloved Charity, he hath not given to any one Abilities to make for himself every thing, but as Dr. *Jeremy Taylor* saith, he provides the good things of the World to serve the needs of Nature, by the Labours of the Plough-Man, the skill and pains of the *Artizan*, and the dangers and Traffick of the Merchant, &c. Wherefore if we will live plentifully we must by our selves or Friends be Traders.

The End we aim at in Trading, is to procure such things as will satisfie our Needs and Delights, and as much as may be secure us both from fear and danger. If we have this, I think Temporalities we need no more.

The Matter of Trade is Money, Bills, and VVares. *Sir*, If these my thoughts shall gain your Approbation, I shall hereafter at some convenient opportunity give you my Thoughts in particular, till when I humbly take leave, &c.

Wm. Dummer

FINIS

A
COLLECTION
OF
LETTERS

For the Improvement of
Husbandry & Trade.

THURSDAY, Octob. 27. 1681.

The Contents.
The Matter and Use of Money. An Account of a great Gain, and other Advantages, by French Furzes. An Account of a Book written by Mr. Thomas Firmin, Entituled, Some Proposals for the Employment of the Poor, and for the prevention of Poverty, and the consequence thereof Begging.

The Matter and use of Money.
SIR,
IN my last I gave you an account of *Trade* in general, and promised my Thoughts in particular, which that I may make good, I pray accept of this about *Money*.
In the beginning of the World, before the use of Coyn, I suppose the Inhabitants thereof drove comparatively

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paratively to these times) but a small Trade, or they did it with far less advantages than we (in Europe especially) now do, and the first Inventor thereof deserved highly to be honoured: For it makes Traffic to be managed with much ease, and gives us liberty to buy the just quantities for the most part our needs or designs require, which could not be so well done by swapping of an Oxe or Sheep for Pins or Needles, Paper or Packthread. And it is Metal, or any thing else, that the Government of each Dominion sets a mark and value on, and makes the Standard of their Wealth. But yet actually (as Coyn) is good for nothing; but potentially is good for every thing; and thus it is that *Solomon* saith, *Money answers all things.*

It is not here my purpose to give an account of the variety of things used for Money, the Tables of Coyns, the Mystery of the Mint, or the Par between one Country and another: But the use of Money, as far as I can understand, is no other than as a Pawn, whereby I may procure any other Commodity that I shall desire, in lieu of some Commodity I formerly parted with.

For Instance: Suppose a Country Gentleman sends up to *London* a score of fat Oxen, and with them design to buy a Coach, and all other necessaries as are wont, when such Personages come to Town; it's possible the *Coachmaker* and he may quickly agree, a Coach for Oxen; but when he goes to the *Drapers*, *Mercers*, *Lacemans*, various Shops on the *Exchange*; or perhaps when his Lady is abroad in the Coach, and he wants a Hackney, 'twill then be difficult for him, to divide the Bullock, as to give every one of these content, and do himself no prejudice; he then wishes that

and *TRADE.*

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that one sold every thing, but what then shall the rest of the People do? It cannot be done. Then comes an able *Butcher* or *Twenty*, and they cry, We have no such Goods you lack; but however, for your Beasts we'll give you such a Pawn, and so devisable, and of easie portage, (the best qualifications of Money) that with it you may purchase your desire; and we'll warrant you as readily, as if we our selves had had their Stores: And thus they drive their Bargain.

If this be so, then surely Money was never made to be an Idol; it will neither fill the Belly, warm the Back, nor make a Fan to keep a Ladies Face from being over-heated; and if we had as much Gold and Silver Coyn as *Yorkshire* could hold, it would do us no greater kindness, than the Lead Oar in *Darbyshire* before it be found doth, unless we would exchange it, and give it for a Pledge for some other things that would gratifie our needs, and delight us: And it is profitable to swap away some of this heap, and prudent too, and that not only to one another in our Nation, but also all the World over; especially if we will be so industrious, as to make the best advantage of Imported Goods, that a little Diligence and Industry will direct us to.

If we buy a Ton of Pepper more than we spend, we must let it lye to rot, or send it out again. The *Indians* will not currantly wear our Cloth, nor consume so much of our Goods, as we for our use or Trade abroad want of theirs; therefore will not sell a great part of them for any thing but Money, which the *Dutch* and *French* will give them if we do't: If we do not give it, we have not that Trade, and so make no profit; if we do give Money, 'twill not cost above 3 pence the Pound, but we sell it to *Spain*, or

the *Streights*, for 7 pence the Pound or more; and if we will, we may bring that 7 pence home in Money, therefore we get 4 pence the Pound by carrying out our 3 Pence. And I am sure, when we are once so stock'd with a Commodity, as to be fully stor'd our selves, and to spare a supply to our Neighbours, whatsoever we bring in more must be all Exported, and upon such terms, if we should yearly carry out Millions Sterling more, it would be so far from a damage, that 'twould yearly very much Enrich us.

This Exportation of Money, that it is a great Gain I think plainly appears; but I have farther to add, That our hasty Importations thereof, if other Goods can be had, are none of our least disadvantages; for if I have in *Spain* three pieces of Eight, and bring them hither, they'll hardly yield me 13 s. 6 d. if I carry them to *Hamburgh*, or *Holland*, and turn them into *English* Coyn, and bring it over, 'twill not be much more; but if from *Spain*, instead of my Money, I shall bring to its value in Wool, and Manufacture it here, and carry it over; or only carry it simply in Wool, and turn it into *English* Coyn, and bring it over, 'twill be a far deal more, and so much more as it is, so much surely will it be more advantageous to bring in Goods than Money.

Neither can I apprehend, that the raising the Domination of Money could any ways advantage us so much as one Farthing; and the greatest good 'twould do, would be to increase our Animosities, Feuds, and Troubles: For supposing *England* in the singular Number, and as a Joynt Stock, the King the Head, and all the rest as Members of the same Body, there can be no addition to the whole, by trucking one with another, no more than the natural Body can grow

grow richer, by shifting of Money out of the right Hand into the left: And the *Merchant*, whether Native or Stranger, considers not, when he carries it out, what Name we give it, but what Profit he can make, where he designs it; and if an Ounce of Silver will yield him more than 8 s. he will much rather carry it in Bullion: And if the Nation would immediately call every Shilling a Crown, I very much question whether they would in *France*, or any other Country, buy more Goods with it, than if they should call it but a Groat. And I don't see, that the *Scotch* Pound will go for any thing more than our 20 Pence. If this be so, 'twould have done as well to have kept our Crown still at 20 Pence, as it would do, if we should now raise it to 120, and call every Penny Two-pence. And you see our Gold will come to its real worth and agreableness to Silver, let the Mint set on it what Stamp it pleases; and if the Law should force the contrary, our Gold would soon be gone, because in other places 'twould yield more profit.

If any body can reasonably oppose what I have here said, and will do it either publicly in Print, or privately by Letter, I shall take it very kindly, and be as ready to confess my fault; but if it cannot be done, and what I have said shall appear reasonable and true, then I hope my kind Country-men, and fellow Citizens, especially those who would be esteem'd as Men that do consider, will not for the future oppose, and Clamour against those Men, that by these ways bring to us no small part of our Wealth and Happiness.

An account of a great Gain, and other advantages, by French Furzes.

SIR,

I Have read over your Collection, *Numb. 1.* and have taken notice of the Enquiries, but more particularly about Meadows, where, among several Annoyances of Meadow or Pasture, you reckon Furzes or Gorse, which, I must confess, are to a great many Lands a very great Annoyance; but every thing hath two handles, or we have two hands, to take it by, and God made every thing good, if we can but get the right knack of using it: An Instance whereof I'll give you in this Plant.

A Friend of mine had a very good Meadow, of about 6 Acres; but on one side of it was a Hill that was very Sandy, and every time it rain'd hard, some of this Sand ran upon the Meadow, and would in time, in all probability, have over-run it: For this he was much concern'd; and when I was there, he ask'd my Advice, and I did advise him to sow it with the Seeds of *French Furzes*, which he accordingly did, and the Effect was this: It fix'd the Sand, and not only so, but once in four years it was cut down, and yielded for to burn 3*l.* an Acre. I must confess, it was in a place where Wood was scarce and dear; but I am forward to believe, it would have been of good advantage in many other places, and it's possible, in the Sandy Lands in *Norfolk*, mentioned in your Letter, Entituled, *Some Advantages we might receive by Enclosure*, in *Numb. 1. p. 14.*

What

What I have here related, is a Story I know to be true; but I'll also make bold to put you in mind of what is said in *Systema Agricultura* about this Subject, and because 'tis short, I'll transcribe it.

Furzes, Brambles, &c. are very necessary for the planting of dry Banks, where it is difficult to raise a better Fence, and in those places they will maintain the Bank against any Cattel. Furzes are also sown on barren Land, and esteemed a considerable Improvement; the green Tops are good for Horses, the prickles thereof being taken away by chopping. Thus far he, in *p. 89. 2 Edit.*

Moreover I have a very good Friend in *Glocestershire*, who, in such Land that his Neighbours (by reason of a Stony Ground, with a shallow Surface, and a want of shelter from raging Winds) can get no Hedges to grow in, hath brave ones, by sowing on the outside of them these *French Furzes*, which shelters them both from Cattel and Winds.

An account of a Book written by Mr. *Thomas Firmin*, Entituled, *Some Proposals for the Employment of the Poor, and for the prevention of Idleness, and the consequence thereof Begging.*

THIS charitable and industrious Author, after some Proposals for relieving the Poor, tells you the manner how they take care of the poor Children in *Holland*, and that he, for 5*s.* the Week, hath a Woman that teacheth between 20 and 30 poor Boys and Girls

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Girls to Spin, some on the single, and some on the double Wheel, (a Description of which, well cut by that curious Engraver Mr. Logan, he gives you before his Title page) and some of these earns 6 d. the day, besides the time allowed for learning to Read, and other necessaries: He also gives Directions for spinning with these double Wheels.

The Children being thus provided for, his next care is for grown Persons, whom he will trust with Materials at their own Houses, (and prefers it before your Common Workhouses) and fears no loss, answering Objections to the contrary.

After this, he shews you the manner of keeping his Books, and sorting his Yarn, which are very easie.

Then he gives you an account of the price he pays for Flax and Hemp, Spinning, Weaving, &c.

He also shews you the effect of his Workhouse, in the Parish of St. Botolph Aldersgate.

And last of all, with persuasions to Charity, he gives Advice for the Release of Prisoners, and concludes.

Printed for JOHN LAWRENCE, at the Angel in Cornhill near the Royal Exchange, 1681.

A COLLECTION OF LETTERS

For the Improvement of Husbandry & Trade.

THURSDAY, Novemb. 24. 1681.

The Contents.

A Letter from Dr. Robert Plott, wherein are proposed Remedies against the uncertainty and loss of Crops, Smuts, Meldews, Lodgings of Corn, and its being Eaten up by Birds. An Essay to shew, That the Plantations do not Depopulate but rather Increase or Improve our People.

A Letter from Dr. Robert Plott, wherein are proposed Remedies against the uncertainty and loss of Crops, Smuts, Meldews, Lodgings of Corn, and its being Eaten up of Birds.

SIR, I have perused your Printed Collection of Letters, (which you tell us (in your Preface to Dr. B.) shall be frequently Publish'd, whereof I must Confess

fes I am not a little glad, and it is my Opinion, That the maintaining a Georgical and Trading Correspondence, the publication of Letters Domestick and Foreign, and the breviates of Books agreeable to such matters, will be a means to make *England* not only the most Delightful, but also the Wealthiest Kingdom the World is Acquainted with.

Therefore I cannot but applaud your Design, as tending to the improvement of *Husbandry* and *Trade*; though I must tell you as a Friend (because you have given me Encouragement so to do, *Pag. 3.*) That you have indeed made some very few slips in this *Specimen*, which a Critical Enemy perhaps may magnifie into Errors; yet in my Opinion they are by no means so valuable as to cause you to withdraw your hand from the *Plough*, especially since the Advancement of *Husbandry* and *Trade*, though of the highest Concern to the Nation, yet requires the least Learning of any of our Concerns: Proceed therefore (as the Countrey-man says) in the Name of God and Prosper, and to satisfie you that my good wishes towards you herein are cordial, I do hereby promise you my utmost Assistance (as Opportunity shall offer it self, and Leisure permit) for the Publick Good, this of *Agriculture* (I think) being the least improved of all the Arts in the Kingdom, though it best deserve it as the most Universal Beneficial.

For whatever Husbandmen are apt to conceive of their Abilities, most of them believing they have brought it to the highest pitch in their respective Counties, and howsoever froward they be in entertaining any thing new (though never so advantagious) beside what they have received from their Ancestors: Yet I must be bold to Advertise them, That were

were they really so knowing as they pretend, or would admit of such Notices as might be communicated, and put them in Practice, we should have no such Complaints of uncertain Crops, Smuts, Meldeus, Lodging of Corn, its being Eaten up by Birds, and the Loss of whole Crops, as we frequently meet with.

But so unskillful indeed is the Husbandman generally in his own Affairs, so ignorant in appropriating the Grain to the Soyl to prevent these inconveniencies, That he knows not so much as the Grains themselves fit for these purposes, though near Neighbours to him, it having been sometimes found that the very Grain sown in one part of the same County, hath not been so much as heard of in another, though preferable to all others of its kind, beyond exception: Witness a sort of Wheat plentifully sown in the *Vale* between *Thame* and *Watlington*, in the County of *Oxford*, called *Mixt Lammas*, it being a white-ear'd red Wheat, which though bringing a more certain Crop, and yielding considerably better than most other Wheats, yet not long since was altogether unknown about *Banbury* and *Burford*, and perhaps remains so to this day.

Much less are the Grains of one County known in another, witness the sort of Wheat called *Red-Stalk'd* Wheat, sown plentifully about *Oxford*, which though endued with the excellent quality of seldom or never Smutting, a conveniency that best pleases the Chapman of any, yet either hath not been heard of, or is wholly neglected in most other Counties. Nor less Ignorant is the Husbandman of *Long-Cone* Wheat, notwithstanding its not being subject to Lodging, or being Eaten by Birds, and its constant

freedom from that Epidemical (I had almost said also Incurable) Disease of Corn, commonly called the Meldew, three inconveniencies sometimes so fatal to him, that by one, two, or all of them, he loses his Crop: Whereas had he known these Grains, and would have taken the pains to procure and have used them; how free might he have been from all these inconveniencies, where ever his Grounds had been lyable to them.

And as it is in Wheat so 'tis likewise in Barley, for I cannot hear that *Patney* or *Ratheripe* Barley is sown any where but in *Wiltshire*, *Berkshire*, and *Oxfordshire*, and the most *Western* Parts of *Cornwall*, notwithstanding the Advantage of its early Ripening, it having many times been sown and returned to the Barn again in two Months time, always in nine or ten Weeks at farthest, which is very considerable, as well in wet and backward Springs, and moist Autumns; as in great drought, when other Counties that sow Common Barley, lose their Seasons and Crops, as they did this very Year: For not being able to sow their Barley (by reason of the great drought) till after Mid-summer, it was green at Michaelmas (as I saw in *Kent* and some other Counties) and as I have reason to believe, never came to be ripe at all: Whereas had they but known and used this *Patney* Barley, though they sowed it not till *July*, they might have had it in their Sacks again before Michaelmas, it always coming to be Ripe in the worst of Summers.

Whence it plainly appears, that could you make your self the happy Instrument of Communicating such Notices as these to all the Parishes in *England*, and so effectually as to get them put in practice, for that

that is the greatest work (tho one would think indeed men should make but weak oppositions against their own Emoluments) you would (for ought I know) deserve as much of the Publick as the Founder of *Christ's-Hospital*, and all its Benefactors, and receive the acclamations and applauses of all good men, as the just reward of so great an Achievement. Which is all at present; but that if this Paper prove acceptable, you may be confident of another of the like nature in a little time, from

S I R,

Your faithful Friend, and humble Servant,

R. P.

The Plantations do not depopulate, but rather increase or improve our People.

S I R,

IN Pag. 3. of these Collections, I told you that I might sometimes take upon me the Office of being an Observator, and I'll make bold to be so upon Mr. *Roger Coke's* Reasons of the Decay of the English Trade, presuming him to be a Gentleman that hath honestly Studied the Welfare of the English Nation: and believing also, that he is so little in love with his own thoughts, that he will readily change them whenever it shall appear that they were mistaken.

In Pag. 7. he saith, That the Trade of *England*, and the Fishing-Trade, are so much *Diminished*, by how much they might have been supplied by those men, who are diverted in our *American*-Plantations.

Observation. Had this Worthy Gentleman writ *Impeded*, instead of *Diminished*, I should better have understood it; for I cannot apprehend how that can be *Diminished*, that never was, but only might have been.

In

In his Annotations upon this Proposition (and two Corrolaries following, which I may consider some other time) he saith, Before we had our *American* Plantations, the Coasts of *England* were in a convenient manner Planted; and the Multitudes of Inhabitants in *England* such, that in the 2 and 3 *Phil.* and *Mary* the Parliament taking notice, that a great number of Persons within the Realm, had laid their Lands, Farms, and Pastures to feeding of Sheep, Oxen, Runts, Scrubbs, Steers, and Heifers, and such-like Beasts and Cattel, whereby was grown great scarcity of Cattel, and necessary sort of Victuals for sustenance of divers sort of People within this Realm, and more like to be if speedy remedy were not provided; therefore several Provisions were made for breeding and rearing of Cattel, &c. but now 'tis otherwise, we want People to eat up our Product, as in Page 10.

Obs. This Gentlemans drift is to shew, that our Plantations depopulate us, which I take to be a great mistake, and I'll shew my Reasons for it.

But, first, I beg this to be granted, That if an English-man be brought to Earn and Consume 10*l.* a year more than he was wont, and to add to the Nation as much strength as a Foreigner would have done, it is as good as the Coming in of a Foreigner so qualified. If this shall be granted, then I say, if Interest wont lye, and profitable Employments will draw people o' ur Plantations in *America* have not prejudiced our Coasts, that were in a convenient manner Planted; for they have increast the profitable Employments, not only by building of Ships, carrying out our Manufactures and Products thither, but also by returning theirs hither to supply our selves, and also a great part of the rest of the World: And if it should be said

said that they might have consumed as much if they had staid here; yet it cannot be said that we should have employed so many men in building Ships, and carrying and re-carrying, as now we do: I am apt to think it might be made out, that it is a Wheel to set most of our other Trades a going. Sir *Walter Raleigh* in his Observations about *Shipping*, saith, That in the 12 year of *Queen Elizabeth*, the Men of War of *England* were but 13, and the Trading-Vessels 136; and if since our Plantations these have been diminished, I leave the World to judge; although I will not deny, but that when the whole Nation were obliged to keep Fish-days, there might be upon the Coast a great many Fisher-men; yet I believe, that if there be any decrease of them, 'tis the disuse of those Fish-days, and the Acts in the 2 and 3 of *Ph.* and *Mary* 3. 13 *Eliz.* 25. 7 *Jac.* 18. by him mentioned, (which may have caus'd a great increase of Flesh) that may have done it, rather than the increase of our Plantations.

And I must confess, although I have a high esteem for Acts of Parliaments, yet my eyes are not good enough to see how the laying of Lands, Farms, and Pastures, for the feeding of Sheep, Oxen, and other Cattel, could possibly cause a neglect of rearing up young Cattel, unless they knew how to have them from another Country, or were willing when their Fat Cattel were destroy'd, to have no supply.

I am very sensible of the great advantages that accrue by a Popularity, and I wish *England* as full again as 'tis; and one way to do it, I think may be as follows.

I would advise, that One hundred thousand English should quickly be sent to *Jamaica*, foreseeing that others would supply them with *Negro's*, and other Servants and Slaves, as long as ever they could give an encouraging price.

Now

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Now I will suppose that the People of *England*, one with another, may Earn 10 *l.* per ann. (altho others won't grant so much) if so, then if the going away of one man causes *England* to get 20 *l.* per annum, more than before; it must either improve, or increase two in his room: They say, that for every White in *Jamaica*, or *Barbado's*, there are 10 Blacks, I'll suppose but three; and 'tis also said, That if these Blacks do not produce what sells for their first Cost the first year, 'tis not worth their Masters while to buy them; if so, these three Blacks Costing 16 *l.* per Head, must procure to the value of 48 *l.* which when brought into *England*, and sent into *Holland*, or other places, seldom or never yields so little as 60 *l.* which (if there were no abatements for our own consumption) must by the aforesaid rule increase, or improve us six people, I don't forget the *English* that dye, nor the Blacks that I have under reckoned, nor the *Scots*, *Irish*, and other Whites that go thither, and may look after three Blacks apiece as well as the *English*.

More than this, 'tis almost the constant practice of those that go for the Plantations, to return again as soon as they have got Estates; and by the same rule we must send no Factors to *Spain*, *India*, or any where else; nor Soldiers to *Tangier*, or the help of our Neighbours; neither must we Sow any Corn at Seed-time, because the more we throw away, the less we have. A great many that are gone abroad would have been hang'd, were it not for the Plantations; others that fled upon the account of Religion, Debt, or any other Misdemeanor, would have gone to *Holland*, and other places, as a great many actually have done; and the *German* Princes, that have no Plantations, cannot keep their Subjects from running the same way. But above all, famous are the *Scots*, who, tho they have no Plantation, yet run about, and disperse themselves, to take possession of every corner of the known World.

I should be very glad if I could be an instrument, to detect any Vulgar Errors, especially such as tend to hinder the Improvement and Populacy of this Renowned Kingdom; and on the other side, to hint any thing that may tend to its welfare and satisfaction; which if I have, pray incourage, if not shew.

Mr. *Coke* hath brought Instances from the *Dutch* and *Spaniard*, to back his Assertion; of which you may hear more some other time.

Printed for John Lawrence, at the Angel in Cornhill, near the Royal Exchange. 1681.

A
COLLECTION
OF
LETTERS

For the Improvement of
Husbandry & Trade,

THURSDAY, March 16. 1682.

The Contents.

The Manner and Advantage of Planting Liquorice. An Essay to prove that 'tis better for England to have Ireland Rich and Populous, than Poor and Thin.

The Manner and Advantage of Planting Liquorice.

SIR,

ALTHOUGH I am no Enemy to our Merchants, and wish that this *Island* were the Store-house for all the Goods that Forreigners can bring; yet I would also have as many things Produc't at home, as can profitably, or without hindring better Employments, possibly be effected. And I think *Liquorice* is one Commodity that might very much (for the Kingdoms Advantage) be increased. The Method of ordering it, is after this following manner.

Having

Having a piece of Ground fit for the purpose (suppose it new Ground) that is at least two foot and a half good Mould, if it be three or four foot deep, 'tis so much the better: at one side of this, about *Michaels Tyde*, they dig a Trench, if the Ground will bear it, four foot deep, and wide enough for a Man to work conveniently in it; throwing the Mould on that side that must not be dug further. Then they dig another Trench to fill up this, laying the Mould as light and fine as they can; and so successively one after another, till they have workt out their designed Plat: then to fill up their last Trench, they fetch with Barrows what they threw out of the first.

This being done, they procure their *Setts*, which are taken from that part of the *Licorice* they call *Runners*; which are Sprouts running from the Crown or thick end of the Root, streight forward, just under the surface of the Ground; from these *Runners* they cut off pieces, having each three Joynts, which they call *Setts*.

These *Setts*, if kept in good Mould, may be kept three or four Months, and by consequence be sent to our *American* Plantations, or any where else that can be reach't to within that time: but they must be kept but very little while out of the Earth, before they are Planted.

The manner of Planting is in *Rows*, at least eight Inches distance, making holes with a Stick, and putting them in, and covering them; and the *Rows* must be a foot one from the other, that there may be room to hoe them.

The first year there may be *Lettuce*, or several other Garden stuff set among them: and some will have the *Rows* a foot and half, or two foot asunder; that they may

may sow *Leeks* or other matters two years together. The ground must be kept well hoe'd and clean, that the Weeds spoil it not, and when the leaves fall off, they cut off the tops which serve for little, except to burn or mend Hedges.

At the end of three, or sometimes, of four years, according as the Markets direct them, they take it up after this manner.

At one end they dig a Trench as before, and so dig on, till the Roots being bare from the Mould, a Child may take them out, and this digging with the help of some good *Horse-dung* mixt with it, serves for a new Plantation.

When they have got up the *Roots*, they trim it (that is, cut off the *Runners* and *Suckers*) and tye it up in round Bundles of divers weights, according as they think best to please their Customers, always putting the smaller in the middle, and the handsom large streight sticks on the out-side.

From the *Crown Runners*, they make *Setts*, which they sell for 5 *shillings* a hundred, more or less, according to the demand for them; of the rest and the small Roots they make *Juice of Licorice* and *Powder*.

'Tis very seldom they plant the same Ground with *Liquorice* thrice together, neither is there a necessity for New Ground, but any good Garden Ground, that is deep enough, and dry, may do at any time.

Liquorice is sold according to its plenty or scarcity, from twenty shillings to six pound a hundred, and where it proves any thing well, you may expect half a hundred from a *Rod*, one hundred and sixty *Rod* make an *Acre*, therefore eighty hundred from thence.

At *London* they give four, six, or eight pounds an *Acre* to Plant it on; from *Pomfret* in *Yorkshire*, and

some other Places, they send a great deal to *London*: and whether other Places in *England* might not make as good Profits by this, as they do with some other of their *Husbandries*; I must leave them to judge that will make the Tryal.

The sooner it is sold, the more it will weigh, and the better it pleases, every one being for green *Liquorice*: but it may be kept indifferent well in a Cellar, or Boxes covered over with Earth or Sand.

We never yet, that I could hear of, were so much clog'd with it, as to keep out *Spanisb Roots* and *Juice*.

The uses of it are innumerable, and for them Ple refer you to the *London*, and all sorts of *Dispensatories*.

Sir, If this may be any ways serviceable, you may further Command, &c.

An Essay to prove that 'tis better for England to have Ireland Rich and Populous, than Poor and Thin.

Sir,

In Number 3. p. 36. of these Tracts, I partly promised some Considerations upon Mr. Cook's two Corollaries mentioned in p. 7. of his Discourse of Trade; Entituled *The Reason of the Decay of the Strength, Wealth, and Trade of England*. Where he saith, By the same Reason (*viz.* as they are diminished by our *American Plantations*) the Trade of *England* and the *Fishing Trade* are so much more diminished, by how many are diverted from supplying them, in re-peopling *Ireland*, since the late *Massacre* and *War* there. And in the second *Corollary*, by so many as extraordinarily dyed in the great *Plague*, 1665.

I make no question but that the *Massacre in Ireland*, was

was a most Barbarous Action, and to have 300000 killed, was at that time a very great loss to that Kingdom: but the Consequences of it was, that the *English* went over apace, and there by beating the rest, and occupying their Lands; have made *Ireland* so well to thrive, both in People and Wealth, as to raise the King a considerable Revenue, and to be look't on as one of the great *Trading Countries* of *Europe*; and 'tis growing greater and greater daily, and I wish it may; altho it were help't on by a *Million* more of our People; and for my Reasons, I refer you to N^o 3. of these Papers, p. 35, 36, 37, 38. Where I have shewn that the *Plantations* do not depopulate, but rather increase, or improve our People.

'Tis my Opinion, that 'tis better for *England* to have *Ireland* Rich and Populous, than Poor and Thin. For so 'twill be for the Safety and Honour of the Crown, and Wealth and Improvement of the *English* Nation.

First, for the Safety of the Crown. If *Ireland* grows more Rich, 'twill be among the *Industrious*, or *Lazy*; and I think the *Industrious* and they will be *Strangers*, *English* or *Irish*. If *Strangers*, they come from Places of worse Living, to live there better, and their Interest will be lock't up in the Welfare and Prosperity of the *Island*; nothing but hopes of getting the whole to themselves, or helping another Prince to it, that shall be a better *Landlord* than the *King of England*, can encourage them to endanger it: and what reason (they being of divers Countries, and disperst into several parts) there is to fear it, I can't see. Their Children being born among, and living with the *English*, will be such.

If *English*, they'll be the better able to curb the rest; and remembering the Happiness they enjoy under

der the *English Monarch*, they'll hardly be tempted to wish for any of his Neighbours; 'tis by his favour they enjoy their Lands, Religion, and Trade.

If *Irish*, they'll grow like *English*, and will make mixt Marriages, and will have the same Dependencies on *England*, and *Trade*, as *English* have.

Let it be what sort of People 'twill, their *Expence* will be agreeable to their *Wealth*, and so will encrease the Kings Revenue; if what he already hath will bear his charge; the Overplus must come to his *Exchequer*, or else he may with it add to his nine thousand Men, and thereby encrease his *Force* or *Dependants*.

The Encrease of *Ireland* will encrease its *Shipping*, and consequentially *Seamen*, which will be always in time of *War* at hand, as an additional Strength to our *English Fleet*; as will likewise be their *Landmen* for an *Army*. Their *Harbours* will be more secure for us, and will be able to annoy a near or passing *Enemy*, and secure an *Allye*.

'Twill be easier for them to cross the Proverb, *He that will England win,*

Must with Ireland first begin.

And, *Vis unita fortior.* Neither is there danger from their *Increase* of *Shipping*, or *Wealth*, because the more they have to loose, the more obedient they'll be to them that can take it from them, which at any time may easily be done, if his *Majesty* by their *Rebellions* should be justly provoked.

Secondly, For the Honour of the *Crown*. 'Tis much more honourable for a *King* to Rule a *Rich* than a *Poor* People. If *Riches* encrease, *Nobility* and *Gentry* will; and greater and more honourable will be the Kings *Retinue*. According to his *Wealth* and *Strength* is his *Reputation* in the Courts of all the *Princes* he hath

to

to do withal. I think here is enough said for these two.

Thirdly, For the *Wealth* of our Nation. I seldom know *Honour* and *Safety* without *Wealth* and *Improvements*. But particularly, the *Richer Ireland* grows, the more *Wealth* will the *Landlords* have, and the more will they that live here spend. I am told by an Inquisitive and understanding *Knight* that hath a great *Estate* there, and very well understands the *Irish Affairs*; that what their *Gentry* spends here, with the *Pensions*, and the *Rent* that's paid from thence, to the *City of London*, amounts to about three hundred thousand pounds per annum now, and I see no reason why this *Expence* should not encrease according to their thriving. Will not the more expect *Preferments* from, and love the *Delights* of Court? And will they not flock from *Ireland* as well as they do from *Yorkshire*, or any of our remote Countries? They will consume more of our peculiar *Products*, and all *Forreign Merchandizes*, that we can sell them as cheap as others, which will be very great, for we do serve all *Europe* with abundance. They'll never share with us in our *Plantations*, except it be to afford People to increase them; if any of their Ships do go thither, they ought to touch at *England*, and pay their *Customs*.

But 'twill be objected. Tho the *Rich* and *Curious* will flock hither, yet the *Laborious* would go thither, and they'd be much the greater number, and would carry away our *Trade*; and if Mr. *Thompson*, *Nethrop* and their Partners had held, you'd quickly have seen the ill Effects.

To which I answer; I believe it a new thing for the *Poor* and *Industrious* to lessen (except by growing rich) from those Places that dayly increase in People that are *Rich* and *Curious*, especially if no *Oppression* be the Cause,

Cause,

Cause; but if they should, I question not but others for gain might be invited, tho' twere from *India*, and seeing in likelihood we shall still keep the *East* and *West-India*, *Guinny*, and *Turkey* Trades, and lye more conveniently for *Flanders*, and all that's East of it, and also have the great Stocks and repute; Why must we think (having these advantages) that *Irelands Thriving* must make us *Poor*? And if Mr. *Thompsons* design had set up the *Woollen* Manufacture, I question whether they could in *Cloth* do more than the *Dutch*, for want of *Fullers* Earth? And for other *Manufactures*, Why might it not put both Nations at strife, to find out some New Consumptions? and so encrease the Trades of both; it doth we see in other places; for the *Dutch Fine Clothes* have only served for *Patterns*, for us to build a great Trade upon, and the encrease of *Traders* in all our Country Towns, have not at all made them dwindle at *London*, and the going of *Citizens* to the *Court* end of the Town, have not at all lessened our *Markets*, *Taverns*, or many other *Tradesmen*. If there must be but a set quantity consumed; seeing *England* bears up against, and in Clothing outdoth the *Terra Firma*; why may we not, if *Ireland* be joyned to us, spoil the *Trade* on the other side, and so be both enriched? 'Tis thought by some, the *Woollen Trade* here is capable of a double Improvement; but if we should part with a little of that, and get a threefold profit and Employment by other *Trades*, I know not where's the damage.

Fourthly, For the *Improvement*. If what I have already said shall be granted; then I think you'l easily believe, that *Safety*, *Honour*, and *Wealth* will cause *Improvement* of our Land and Arts.

If any body can answer what I have here said I shall be very ready to change my Mind; but if they cannot, let us every one, as much as may be, encourage *Ireland*, till it grows so rich, that by being twisted into a Cord, with *England* and *Scotland*, it may be too strong for all *Forreign Powers* either to break or weaken, which is the hearty wish of yours, &c.

Printed for *John Laurance*, at the *Angel* in *Cornhil*; near the *Royal-Exchange*, 1682.

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COLLECTION
OF
LETTERS

For the Improvement of
Husbandry & Trade,

THURSDAY, April 27. 1682.

The Contents.

A Letter from Mr. John Smith, for a new way of Curing Smuttiness in Corn. Some Account of the Plague, 1665. Spain not prejudic't by its Plantations. Prodigiousity, or Mens spending their Estates, doth not prejudice the Nation.

A Letter from Mr. John Smith, for a new way of curing Smuttiness in Corn.

Worthy Sir,

IT being an undoubted Truth, that Experiments are the best Materials for advancing, or building a Solid Body of *Philosophy* withal; I shall by these Lines give you an account of one, that, I think, not improper for that purpose, *Viz.* That discoursing on day with a Person of good Integrity and Credit, concerning *Husbandry* Affairs, I shewed him the Letter of Dr. *Plot*, published by your self; where some

Remedies are proposed, for preventing *Smuttines* in Corn; and the way of *Brining* and *Liming*, being of good Credit for that purpose; he told me, that he had an Experiment that would much contradict the reason of that Practice: for being *Bayley* to one *Sir Thomas Draper* of *Suning-hill*, who having Lands in his own Hands at a Place called *Cilchester* in *Hampshire*: this Person by Name, *Barnaby Denton*, was employed to manage the same, and having some of it fit for *Sowing*, he bought the best *Wheat* for Seed that could be got, which he did *Brine* and *Lime*: but in the *Brining*, he observed much of the Corn to swim on the top of the *Brine*, this he scum'd off, and kept by its self; he told me, that much of this light Corn was fair, as any of the rest, though some of it was small and lean, but all of it, if broke, or cut, seemed as white and full of *Flower* as that which sunk; the Seed so *Brined* and *Limed*, he sowed in the Field, & the light Corn that swam at the top of the *Brine*, he sowed on a *Head-land* in the same Field, it was *Brined* and *Limed* as the other was: when Reaping time came, there was not a *Smutty* Ear to be found in the whole Field, that was Sowed with the *weighty* Corn: but on the *Head-land*, where the *light* Corn was Sowed, there was scarce one Ear in ten, that was not *Smutty*; yet this was *Limed* as well as the other: therefore he thinks, if *Seed* had the lighter part seperated from it, it would prove a better prevention of *Smut* than any other way yet found out. *Sir*, If this may be any way serviceable to your Design of Collections for *Husbandry* and *Trade*, I shall be much satisfied, and further encouraged to communicate some other *Curiosities* I have by me, who am,

Yours, desirous of Knowledge,
John Smith.

S I R,

Some Account of the Plague 1665. Spain not prejudic'd by its Plantations. Prodigality or Mens Spending their Estates, doth not prejudice the Nation.

S I R,

IN No. 3. p. 36. I partly promised some Remark on Mr. *Cok's* Thoughts, in his second *Corollary*, pag. 7. *Viz.* 'The Trade of *England*, and the *Fishing* Trade are so much more diminished, by so many as extraordinarily dyed in the great *Plague*, 1665..

I must confess, that was a sad time, especially for the City of *London*, and few of my Years were more sensible of it than I; for I was then an *Apprentice* with Mr. *Upton*, that is Master of the *Pest-house*, and upon that score, had more opportunity to hear Complaints, and see Miseries, than most other Folk had: for altho my Master, and some other that related to the *Sick* and *Dead*, had very great *Trades*, yet *London* was so thin, that I saw before *Drapers-Hall* behind the *Exchange*, Grass growing of a considerable length. But what was the Effect of all this, but that our *Citizens* being forc't into the Country, there fell to Trading; and there by their Example and Converse, taught the People so much the knack of it, that they have been very eager upon it ever since: and this to me appears plain, for altho we were then in a War with the *Dutch*, and the next Year, a great part of our City burnt to *Asbes*, yet we have increas't more in Trade since that Time, than it is probable any Nation hath done in the like Space; but God send us other Causes for such Effects.

My *Author* is further pleased to think, 'That our *Plantations* have greatly prejudic't us, and the contrary, advanc't the *Dutch*.

'That *Spain* is exceedingly lessened by its Acquisition of the *West-Indies*.

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50 HUSBANDRY, &c.

That we are prejudic'd by the Laws for the *Poor*, and their living upon *Wastes, Commons, Chases, and Forrests*, the Laws for *Hanging and Imprisonment*, for *Debt*.

Some of which, I can in a great measure comply with, altho' tis probable, the main fault in the *Laws*, is the want of due Execution. But *Holland* hath been as eager to carry Men to the *East*, as we to the *West-Indies*, which *Colonies*, with some other Necessities, have caus'd them to encrease their other *Trades*, and not their want of *Plantations*. For parallel, should we destroy most of our other *Food*, I question not, but we should quickly out-do them in *Fishing*.

As for *Spain*, 'tis strange, that what makes us, should spoil it; and most of the considerable *Europeans* are eager for *Plantations* as well as we; 'tis the great Support of the *French Fleets*: and the *Dutch* are loth to part with *Surinam* and *Currisan*. No, no, 'twas eight, and some other times since, that their *Fleets* have been worsted, their not encouraging *Traders* in their own Country, and as this worthy Gentleman (in p. 11.) hath rightly hinted, the *Inquisition*, with some other Matters, hath been the Cause that *Spain* is now at so low an *Ebb*.

In pag. 18. of the abovesaid *Author*, the seventh *Corollary*, saith thus; 'By the same reason, the *Trade* of *England*, and the *Fishing Trade* are so much diminished, by how much Money, and so many Men as are diverted from supplying them, in buying and mortgaging Land.

P. 5. For Mony is a convenient mean to improve *Trade*.

And in his *Annotations* on this *Corollary*, like a worthy Gentleman, he laments that *Estates* in *Tail* should not remain to the *Donee* and his *Heirs*, according to the form

and TRADE.

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form of the Gift of the *Donor*, and for want of Issue of the *Donee*, to revert to the *Donor* and his *Heirs*, according as by the Statute of *Westminster*, 2. made the 13. *Edw. 1. C. 4.* it was provided.

By which this Kindom might be enrich'd, and the *Trade* thereof increased nine ways.

1. The Will of the *Donor* would not be violated.

2. The vast and wild *Prodigality* of vain *Men* and *Women*, would be restrained within the bounds of their *Estates*, and the *Impoverishment* which they bring upon the *Kingdom* by their *Pride, Vanity*, and *Luxury*, in a very great measure, would be abated.

3. The *Families* of the *Nobility* and *Gentry* would hereby be preserved and continued.

4. The multitudes of *Solicitors, Bankers, Scriveners, and Usurers*, who now swarm more than ever, & devour all the good of the Nation, but no ways do any good to it, would diminish, and these very Men be necessitated to seek some better means of Subsistency, whereby the *Kingdom* might receive benefit, now we so much want Hands to advance the *Trade* of the Nation.

5. The *Supernumerary Pages, Lacquies, and Waiting-Women*, who are *Moths* to fret and consume their *Masters* and *Ladies* *Estates*, might be employed in ways beneficial to the *Kingdom*.

6. The *Stock* of the Nation to be employ'd in beneficial *Trades*, would be tenfold more employ'd in them.

7. The *Riches* acquired by *Trade* would continually be employ'd in't, as well as in the *United Netherland*.

8. The *Interest* of Money without a Law, would fall to be as low as in the *United Netherlands*.

9. Men would be more intent to improve their *Estates*, when they know what they must betake themselves to; and may more securely follow their *Business*.

Business, than when they are engaged in *Law-Suits* about *Mortgages* and *Titles of Land*.

To which I answer, that Considerations about Men Buying and Mortgaging Land, will come under the fourth way of enriching, above mentioned.

To the first way, I grant, 'tis pity the Will of the *Donor* should be violated, unless it be against the Law, and if our Judges cutting off *Entails* be so, let them answer it, I will not pretend to't.

To the second way, If by *Prodigality*, he means spending beyond Estates; by *Pride*, all sorts of Finery; by *Vanity*, spending upon Shews, Plays, and such like; by *Luxury*, Eating and Drinking high; Then I offer:

That those who are guilty of *Prodigality*, *Pride*, *Vanity*, and *Luxury*, do cause more Wealth to the Kingdom than Loss to their own Estates.

My Reasons take as followeth; And first for *Prodigality*, What ever the *Prodigal* spends, it is in matters Native or Ferreign; If Native, there can be no Prejudice to the Whole, because its being but one, and he a Member of that one, he gives to himself, as I have shewn already, in *Page 26*, of these Papers. And I think 'tis Universally granted, That whatever any Country spends of its own, if it be capable of a Supply, will never hurt it; nay, to Consume a great deal will be a Conveniency, if not an Advantage, by finding Employment for a great many Idle People. But if these People should happen to make any more Goods than will Supply their own Country, the Overplus must march abroad; and whatever is brought in for that, will be Profit to the Nation.

If in matters Ferreign, that will also be a great Advantage, as well as a Security to the Nation, for 'twill increase our Seamen, and by Consequence our Naval Strength

Strength. How shall we expect Trade to other Places if we will consume none of their Products? Neither will the saying, *We may bring home Mony*, satisfy; For then we must not Trade to those Places where Mony is not to be had, and where 'tis for no greater quantity than the Mony they can spare, and by consequence our Ships must come light home, which will make the Freight outwards so dear, that others will out-sail and out-sell us. An Example hereof is plain to me in the *Guinny-Trade*.

The *Dutch* sell Blacks to the *Spaniard* for high Prizes in Mony, and want the Fraights home; we sell for less to the *English*, but are pretty well Fraighted home, and by this means the *Dutch* Factory's in *Guinny* are in some measure furnished with *English* Goods; and there is some hopes that in small time, they will have no Body left there to Buy.

In *Number 2*. of these Papers, I have already shewn that 'tis no Advantage to bring home Mony, if Goods can be had that make more bulk; To which I refer you.

Our *Prodigality* in wearing of Silk, hath been the main Prop of the *Turkey* and *East India* Trades, and it hath Increast us such a Manufacture, that in Time may spoil the *Silk-Work* of all *Europe*. Besides if *Wine* and *Brandy* should be urged to me, I think I can answer it too, and it's likely, may sometime, when the Ballance of Trade between us and *France* may also be Considered.

Furthermore, I pray consider the *Prodigals* Life, Ife suppose his Parents leave him a great Estate in Land, the Income whereof he Spends, and Borrows more; and when much straitned *Mortgages* his Land for more, then he Racks his Tenants to pay this Interest, which puts them upon *New Projects* and *Industry*,
how

HUSBANDRY

how they may Live as well then as before, for as our Proverb saith, *Necessity is the Mother of Invention*. Which *Projects* and *Industry*, they never before could be induced to, because their Rent was small, and their Livelyhoods came in, as it did with their Forefathers, very easie; witness the great Improvement made of Lands, since our Inhumane Civil Wars; when our Gentry, who before hardly knew what it was to *Think* then fell to such an *Industry*, and caused such an *Improvement* as *England* never knew before.

The next thing the *Prodigal* doth is cutting down his *Woods*, which yields him some mony for others to Employ towards the Enrichment of the Nation; and the Land being turned to *Pasture* or *Arable*, yields every year, twenty or forty shillings, besides the profits from Beast, or two year in three, three four or five pounds each, besides collateral Advantages and Employments, when as tis rare the *Woodlands* yeild above six Pound an Acre, once in thirteen or fourteen years, and no employment almost for any body till then, except once in a great many years, when they fell their *Timber* and altogether, it makes nothing comparatively to the other wayes, as hereafter I may shew at large.

After this he Sells all, and when that Mony is Spent, if his *Debaucheries* kill him not before, he betakes himself to the *Kings-Bench*, or some others lay him in a worse Prison, where, if he be not Hang'd, he lives with a miserable Crew till he dyes, or a Five pound Act releases him, where by his hardships, he thinks he may be the better able to endure Hells Torments.

But sometimes like the *Prodigal* in *St. Luke*, he returns to his Father, and by his knowledge in Wickedness, he is better able to detect the ill Designs of others, and not seldom, tho late, proves a good *Subject*, and *useful Member* to his Country.

Sometimes before all is gone, he goes abroad, and valiantly fights for his Country, that he may regain his Honour; sometimes he makes new Discoveries, and finds out witty and useful Inventions, Examples whereof could be given innumerable, both *Antient* and *Modern*, and all this while, a great many *Trades* are encouraged, and a great many Folk thrive from him, but where the Nation looses a Penny, I see not.

I would not be thought to encourage this sort of *Prodigality*; and know well enough, that by a generous careful high Living the Nation may thrive as well. As hereafter I shall shew you.

A
COLLECTION
OF
LETTERS

For the Improvement of
Husbandry & Trade,

THURSDAY, May 18. 1682.

The Contents.

A Letter from the Ingenious, Mr. Adam Martindale, of Cheshire, about Improving Land by Marle. That our High Living is so far from Prejudicing the Nation, that it Enriches it.

A Letter from the Ingenious Mr. Adam Martindale, of Cheshire, about Improving Land by Marle.

Sir,

Being returned from a Journey, I met with yours, lying ready for me: And (as my worthy Friend, Mr. Collins, informs you) I am very willing to Promote any Ingenious Project for Publick Good; But, besides what ariseth from mine own Insufficiency (having little Skill in *Agriculture*, and less in *Trade*) I labour under Great Discouragements, in reference to that little which I know, from the conceited surly Humors of People,

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that

that will not be beaten out of their old Roads, by the most powerful Discourses bottomed upon Reason, and backed by the Experience of wise and faithful Persons. To what else can it be ascribed, that the *Speaking-Trumpet* (so notably fitted for the use of *Cryers* in great *Courts*, and Proclaimers of things in *Tumultuous Markets*) should find little more Entertainment than to be ridicul'd in *Plays*? Or (to come nearer the matter) What else can be the reason why the great *Advantage* got by our *Neighbours* in *Staffordshire* and *Worcestershire* by Sowing of *Clover*, can scarce prevail with any of us in *Cheshire*, or our *Neighbours* in *Lancashire*, to Sow an handful upon the very same sort of Land. Nor the vast *Incomes* by *Marling* Land in *Lancashire* and *Cheshire*, tempt our *Neighbours* of the other *Counties* before mentioned, to make a little Search for that great, natural, improver *Marle*; though in some Places, there is strong probability to find it, and I am sure a great deal of Land very proper for it? When your obliging *Token* of *Papers* already Printed, comes to my hands, I can better tell whether a Description of this grand *Husbandry* of *Marling*, may any way serve you. In the interim, I shall give you a small touch of this sort of *Husbandry*. And whereas there are these five things to be spoken of; *First*, The sorts of Land proper to be hereby improved. *Secondly*, The Profitableness thereof. *Thirdly*, The several sorts of *Marle*, with their different Goodness in *Kind* and *Degree*. *Fourthly*, The method used in setting the *Marle* upon the Ground. *Fifthly*, The manner of ordering the Ground afterwards. I shall only say a little of the *First* and *Second* at this time, and at better leisure, send you my Thoughts (after Advice with our greatest *Husbands*) about the other three, if by you desired. For

For the *First* of these, besides *Meadow-Land*, which is either so *Good* and *Rich*, that it needs not; or so within the danger of hurt by Water, at High-water time, that 'tis not worth the *Cost* to be improved; and *Woodland*, which is generally thought exceeding good for this purpose, having long rested. Most of the Land possessed by us here in *Cheshire*, may be ranked under three *General Heads* (though these are capable of *Subdivisions*) *Viz.* *Sandy-Land*, *Mossie-Land*, and *Clay-Land*. The *First* is accounted the best for *Marling*; the *Second* pretty good; and the *Third* very bad, according to these old bald *Verses*;

He that Marles Sand, may Buy Land.

He that Marles Moss, shall suffer no loss.

But he that Marles Clay, flings all away.

But these *General Rules* are not so *Universally true*, as to hold without *Exceptions*; For though the *browner* sort of *Sandy Land*, whether *Plain*, or mixed with *Pebbles*, *Slates*, or *Gravel*; or whether it naturally produces *Gorse*, *Broom*, *Heath*, or none of these, but a short sort of *hard Grass*, is oft found very profitable, being thick set with a strong sort of *Marle*. The *gray Sand* is of a far poorer sort, and not near so promising upon the like *Costs* of *Husbandry*; yea, far inferiour to some of the *Mossy* sort: for that kind of *Black Land* if it be firm and unctuous, will bring very good *Profit* (ordinarily much better than the *Greyish-Sandy*) but the softer is so troublesome, both in the *Marling* and *Plowing*, and withal so chargeable, if the *Marle Pit* be far distant, because of the vast *Quantity* that it requires, to make it any whit firm for *Plowing*; and so apt to bury the best part of it in a few Years, by giving

way to its sinking Downwards: that I dare not assure my *Country-Friend*, he shall suffer no loss by such kind of *Husbandry*. And for the last sort of Land, wherein *Clay* is predominant, though it is generally bad for this purpose, Experience hath taught some of mine *Acquaintance* in these two Countries, that *Marle* (provided it be not too much in Quantity, or too tough, or *Binding* for *Quality*) will alter the Nature of it, and make it much apter to bear *Corn*, but especially to be far better for *Grazing*, when it resteth.

As to the *Profit*, I dare not tell *Strangers* what my *Neighbours* know to be true, it hath sometimes been so extraordinary: especially when right *Sand-Land*, duely Set with a suitable sort of *Marle*, hath the *Help* of dropping Years, while it is in its full Vigour. For *Wet-Summers*, which cause a general *Dearth*, load this sort of Land with an Incredible Quantity, which considered (together with the great Price that it will then reach) it must needs fill the *Owners Purse* plentifully; and for all that, be a great Mercy to the *Country*, which could not otherwise be well supplied. I shall at present only say in general, that if the *Land* and *Marle* be both good, and duely suited to one another, both for *Kind* and *Measure*, good *Husbands* say, the Charge can hardly be too much. And I know somewhat by mine own Experience, having no Cause to complain of some *Ground* that cost me very *Dear*, because of the Remoteness of the *Marle*; the *Profit* answering all with very good *Advantage*. And I could name divers of my *Acquaintance*, that have advanced themselves in the World very considerably this way; and others, that by this meanes, have supported themselves, and their Families from *Ruine*; whose *Estates* would otherwise have been sunk by their *Prodigality*.
Insomuch

Insomuch that I wonder that the *Gentlemen* of *Staffordshire*, of our Intimate *Acquaintance*, that have so much Land fit (of mine own Knowledge) for this purpose, should so far neglect their own *Advantage*, as not to send for skilful *Searchers* for *Marle* out of our *County*; which if succeeding, would be incomparably above their *Liming*, for durableness, and perhaps in some Places, far less costly. I am confident I saw *Marle* there, at a *Brook Side*, and little doubt, but by search of skilful Persons, a good Quantity might be found; but how much, how good, or how conveniently it lyes, cannot be resolved without Search, neither there nor here. He that will not run such a poor hazard as that, is not worthy of so much Gain. But I am grown too *Prolix* already, I shall only add at present, that I am,

SIR, Your Servant,
(though Unacquainted)
Adam Martindale.

Our High-Living is so far from Prejudicing the Nation, that it enriches it.

IN No. 5. I have endeavoured to shew that *Prodigality*, or *Spending* beyond *Estates*, doth not prejudice the Nation. Now, according to Promise, I must say something for *Pride*, *Synery*, *Vanity*, *Shew*, *Plays*, &c. *Luxury*, *Eating*, and *Drinking High*; which I think causes more Wealth to the Kingdom, than Loss to *private Estates*.

In answer to this, I have said somewhat already in a little

a little *Treatise*, Entituled, *Englands great Happiness*. (to be sold at the *Printing-Press* in *Corn-hill*) in pag. 6 under Title, *A General High-Living*, which being but short, I will give you with *Additions*.

‘He that spends more than he is able to pay for, is
‘either *Fool*, *Knave*, or in great *Necessity*. But I sup-
‘pose not this to be the *Nations* Case; for if it were,
‘we must owe more to other *Nations* than they to
‘us, though we gave them all we have to *Boot*; which
‘if you think most of the *Merchants* that have *For-*
‘*reign* *Factories* in the *East*, or *West-Indies*, *Africk*,
‘*Streights*, *Spain*, *Portugal*, *Baltick*, *East* *Countrys*
‘*Hanse* *Towns*, *Scotland*, *Ireland*, with *France* and *Hol-*
‘*land* too, will condemn you. But our *Height* puts us,
‘all upon an *Industry*, makes every one strive to ex-
‘cell his *Fellow*; and by their *Ignorance* of one ano-
‘thers *Quantities*, make more than our *Markets* will
‘presently take off: witness our late fine *Broad-Cloths*,
‘with variety of dainty *Colours*, and other *Woolen*
‘*Manufactures*, our *White* and *Black Bone-Laces*, *Fine*
‘*Silks*, *Broad* and *Narrow*, *White Thread* of an *Crown*
‘an *Ounce*, and *Linnen-Cloth*; which two, with a lit-
‘tle help, would increase, as *Silk* hath done, *Tapes*,
‘*Gold* and *Silver-Lace*, with a multitude of other *Com-*
‘*modities*, which puts us to a *New Industry* to find a
‘*Forreign Vent*, and then we must make more for
‘that *Market*; but still having some *Over-plus*, we
‘stretch our *Wits* further, and are never satisfied till
‘we engross the *Trade* of the *Universe*: and some-
‘thing is returned in lieu of our *Exportations*, which
‘makes a further *Employment* and *Improvement*.

‘If it wont do, this, Why do you complain of *France*
‘getting our *Money* for their *Triffles*; for I believe they
‘send us nothing they can sell for *Price* enough at
‘Home

‘Home, but only their *Over-plus*? If it will, Why
‘should we not wish for more of every *Trade*, that
‘they may increase their *Quantities* as high as ever it
‘is possible? If we make six considerable *Laces*, and
‘Export but one, for it we may bring in more *Money*
‘than the *First Cost* of them all; which is far better
‘than to *Import* one, and let our *People* sit still for want
‘of *Employment*.

Why should not we by encouraging *Arts* and *Scien-*
ces, get *Money* from others, as well as they from us? Are we the only *Apes* and *Fools* of the *World*? Doth not most *Parts* of it, where *Civiliz’d*, love *Fynery*? I’m told *France* is as eager for *Roman Gloves*, *Venetian Points*, *Fine Cloth* of *England*, my *Neighbour* *Grices*, *Hats*, our neat *White Gloves*, and all sorts of *Scarlet Dyes*, as ever we were for the gayest *Triffle* they thought fit to imploy themselves about.

‘The *Venetian*, *Spaniard*, *Portugeese*, *Dutch*, and *Eng-*
‘*lish*, have drove the great *Trade* of the *World*, and
‘fetcht the *Gold* and *Silver*: but when they had done,
‘they eagerly carryed it to *France*, to buy their *Gue-*
‘*Gaws* and thereby made them allways considerable:
‘and I had rather get a thousand *Pounds* by *Lace* and
‘*Fringes*, than nine hundred by the best *Broad-Cloth*
‘that ever I yet saw; not that I slight *Broad-Cloth*, I
‘would twere increas’t an hundred fold, but I think
‘a *Fanne* is as necessary to cool one, when extream hot,
‘as *Cloth* to warm in the same *Degree* of *Coldness*. And
‘if *Cloth* of *Five Shillings* the *Yard*, will last as long,
‘keep me as warm, and fatisfie all my *Necessities*, as well
‘as that of *twenty Shillings* the *Yard* will, then the o-
‘ther *fifteen Shillings* in my *Judgment*, is as great a
‘*Triffle*, as to have ones *Breeches* hung with *Points*, or
‘ones *Ears* kept warm with a pair of *Pendants*, for ’tis
‘*Fashion* alone that makes them all useful. ‘That

That honest way that finds most, Employment, and gets most Money, is surely the best for any Nation; and this fine Manufacture joyned to our great Shipping, will increase it by greater Bulks; and in all likelihood, make us the most potent the Sun shines on.

Take away all our Super-necessary Trades, and we shall have no more than Tankard-Bearers, and Plow-Men; and our City of London will in a short time, be like a few Irish Huts, or Carthage (mentioned) in Virgil Traverste. For in England, and Colder Countries too, they have gone, and some do go Naked; and were it not for Custom, the Back, as well as Breast, might do so now, and Corn and Water, with the other Natural Products of the Earth, would be such Cates that a great many poor Souls would lick their Chaps at.

Although Fynery be Foolery, yet for People to get honest Livelyhoods, is one of the great Concerns of Mankind. We employ in Woolen Manufactures, and other we call Substantials, as many People as we can, surely 'tis better to employ the rest in Pride, Vanity, and Luxury above said, than to have them, like Idle Drones, prey upon the Industrious.

I do no here incourage Sin, 'twas none for Princes Courts to have Costly Apparel, or Solomons Temple to have rich Ornaments: That, and Millo, were fine Showes, and Entertainments; with Representations of Men and Things, have been, and are well thought on, or else Play-Houses; and the Burning of Popes, must both sink, if Feasting be Criminal? Davids Flaggon of Wine, and Piece of Flesh to each, the Wedding in Cana of Galilee, the Torey and the Whig-Feasts, were all too much: If any go beyond Christianity, let him look to it; but within that Pale, we may go far enough in these Things, to trebble the Wealth of this Kingdom.

London, Printed by J. Gain, for the Author John Houghton, and is to be Sold at his House, against the Ship-Tavern in St. Bartholomew-Lane: And by John Lawrence, at the Angel in Cornhil, near the Royal Exchange, 1682.

1683 Numb. 7.

COLLECTION
OF
LETTERS
For the Improvement of
Husbandry & Trade,

THURSDAY, June, 15. 1682.

The Contents.

The History of Malting, or the Method of making Malt, Practised at Derby. Descried for R. T. Esq; by J. F. January, 1682.

MAlt may questionless be made of all sorts of Grain, tho it is most commonly of Barly, which yielding much more Bran or Chisels being ground and sifted, then any other Grain, is less fit for Bread-Corn, and of a less value in the Market, and therefore chiefly selected for this purpose. Malt is frequently made of Oats in the Northern parts of this County, and many places of Staffordshire, but the Ale or Beere drawn from it by Brewing, is more laxative than that which is made of Malted-Barly. I once remember, that Wheat being very Cheap, my Father caused a Steeping of it to be Malted, and the Tradition is, that it yields more Liquor, and stronger, the quantity used considered, than

W. S.

I

Malt

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Malt made of any other Grain: and that the Liquor called *Mum*, much drunk and approved of late, is made of Malted *Brunswick-Wheat*, with some few other Ingredients. I have known *Pease* and *Beanes* Malted frequently; and many *Ale-brewers* desire some in their Malted *Barly*, because they make the Liquor in working bear a better *Yeast*, or *Barm*, as here we call it; and certainly being mixed in a good quantity with other *Malt*, they make very strong Liquor, which, as I am well informed, is apt to intoxicate and heat the *Stomach* exceedingly. I have never known any *Malt* made of *Rye*, perhaps because yielding very little *Bran*, it is found more fit for *Bread-corn*, nor of that Grain which we call *Barly-big*, yet I hear that of late it is often Malted in other places. But I have seen a very small sort of *Barly*, not much bigger than the *Groats* got out of large *Oats*, which formerly has been bought in our Markets, and converted into *Malt*, it yields, as I am informed, very good Liquor, but *sweet* and *loosening*; of late years I have seen none of it.

The *Barly* of which we usually make our *Malt*, is of two sorts, either *Sprat*, or *Long-ear*, so called, from the length of it, or *Battledore-Barly*, from the Flatness of the *Ear*. Each of these is a like good for making *Malt*, tho' the knowing *Husbandman*, in choosing *Seed* for his Ground, sometimes prefers the one before the other. In choosing *Barly* for his Use, the *Malster* looks that it be *bold*, *dry*, *sweet*, of a *fair Colour*, *thin Skin*, *clean faltered from haines*, and *dressed from foulness*, *Seeds*, and *Oats*. Any one that is accustomed to it, by barely handling the *Corn* in the *Sack*, will easily perceive whether it be *bold*, *dry*, and well dressed or not, the colour and fashion of it will prompt to judge whether the husk be *thick* or *thin*, the sweetness is found

and TRADE.

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found by the smell; and he that would buy *good Corn*, ought allways to scent it, for some will appear fair enough to the *Eye*, which by the smell we may find to have received such hurt in the *Mow*, as renders it unfit for *Malting*: If the Grain be of a dark colour, and many *Corns* have brown ends, we judge them to have been heated in the *Mow*, and they seldom come well in the *Couch*.

Having put what quantity of *Barly* we think fit into our *Cisterns*, of which some are made of *Cast-Lead*, others of *Plaister* of various Capacities, we cover it with water, esteeming that drawn from the *Brook*, by reason of its fatness, much better than that from the *Spring*: In this we let it steep, till crushing the *Corn*, set end-ways, betwixt our *Fingers*, the *Husk* will rise, or shull a little from it, which now in cold weather, my *Thermometer* standing at $1\frac{1}{2}$ or 15 , will be after three days and four Nights, if the *Barly* be good and found; then we draw off the water, and let it lye 6, 8, 10, or 12 hours, according as occasion is, to drain.

Now *Barly* bought about *Michaelmas*, when it comes first into the Market, takes much less time in the water, than afterwards, when it has had the *Sweat* in the *Mow*. I suppose, because the pores of its *Skin* and *Kernel* are more open, and which *We use to Mow all our Barley*. some People wonder at after a dry Year, when it has little Rain in the *Field*, and none in the *Sweath*, it In-bibes the water faster, and is sooner steeped, then when it hath plenty of Rain in the Growth, and some after it is cut, before it be In-*ned* into the *Barn*; as about 3 years ago, when *Barly* was every where with us got very dry, it took

but 2 Days and 2 Nights, or 2 and 3, as the *Malster* speaks, when now in the same weather, it will require above 24 hours more time in the water.

Most Experienced *Malsters* judge it fit to give the *Barly* something too little, rather than too much water; because having Im-bibed too much, many Corns will *Smilte*, or have their *Pulpe* turned into a Substance like thick *Cream*, which crushes out in stirring; others will have the *Sprit* drowned, and most of those which come without extraordinary pains, will send forth their Substance in an *Acrospire*.

I durst adventure to give some probable Reasons for all these Accidents, but I have heard that *Dr. Willis* has touched them in his Treatise *De Fermentatione*, to which, and your own conjecture, I had rather refer you, than prepossess you with my poor *Philosophy*. The *Barly* being thus steeped enough, & the water well drained off, we throw it out upon the *Couch-Floor*, if the weather be immoderately warm, we immediately *Couch* it about a foot thick; but if we perceive it hath taken much water, or a hotter Season require it, we spread it on the *Plaster-Floor* much thinner; yet if the weather be moderately cold, we let it lye 12 hours on a heap, the Edges being only swept close up, after which, or a longer time in a *Frost*, we spread it in such a thickness as the weather and water it seems to have taken, may require.

Thus laid, it is stirred with the broad *Casting-Shovel*, usually thrice a day in moderate weather, but in cold only twice, and in hard *frost*, when the outsides of the *Couch* are apt to freeze (for the middle never will) I have known them *Couch'd* up a yard thick, covered with an *Hair-cloth*, and stirred only once a day, the *Malster* being always careful to throw the frozen

out.

outsides into the middle, till the Corn begins to *fork* and *warm* in the *Couch*; after which time, if it be not laid too thin, it will not easily freeze: I know an old *Malster*, whose custome it was in moderate weather always to cast his *Barly* thin as soon as it was thrown out of the *Cistern*, and never stir it after, but with the Spade-like *Running-Shovel*; but his Practice being only convenient for himself, I know not any that approve or follow it.

Sometimes in the hot Months of *May*, *June*, &c. I have known our *Malster* stir his *Barly-Couches* (for so we call them, till the *Sprit* begins to *fork*) five or six times a day, or more; it being always his care to keep them from drying too much on the outsides, lest they again be parched into *Barly*, but all his care, in *Summer*, is sometimes too little, for the heat will so dry the *Barly*, that tho' it seem to come well, yet wanting moisture to put an *Acrospire* back, *Malt* proves but harsh and hard; of this more hereafter.

The *Barly* after it has been *Couch'd* 4 or 5 days, in such cold weather as we now have (my *Thermometer* standing at $1\frac{1}{2}$) will Sweat a little, and begin to shew the *Chit* or *Sprit* at the *Root* end of the Corn, and in 4 or 5 dayes more (during which time it continues Sweating, as is easily seen by stroaking of the dryer top of the *Couch*) it will be come long enough; but now except the weather grow colder, it must still be laid thinner, and stirred 3 times a day, or 4; when the *Come* is long enough, at least, in *Summer* I have known it *Chit* within 24 hours after it had been thrown forth of the *Cistern*, and within 3 days come enough, the *Malster* being forced to stir it 6, 7, or 8 times a day, to keep it from running out, or the *Sprit* from coming too long: Sometimes I have known the

Chit

That to peep before the *Cistern* was emptied in the hot weather of *Summer*, but this was only at the top of the *Cistern*, and in such a case, it is the chief Art of the *Maltster* to maste the *Barly Come* even in the *Couch*: We likewise find it to be a laborious time to the *Maltster* when *Barly* begins to grow in the Fields in the *Spring-time*, for that in the *Couch*, by some kind of *Sympathy*, will be so active, that it will require much extraordinary stirring to keep it from *Coming* too long, or emptying the *Pulp* of the Corn in *Spirits*, which it is his care to prevent, not only lest it shrink the Corn in Measure, which it will do something, but also lest it leave him only the husk of the Corn instead of *Malt*.

When the *Malt* is *Come* enough, we throw it thinner on the Floor, to wither it, and stir it once or twice that day extraordinary. When it is once stop'd with ordinary Care and stirring, it will be kept from *Coming*. The Corn is usually come enough, when the *Spirits* are about half an inch long, but in *Summer* we let it *Come* a little longer than in *Winter*, to make the *Malt* rash. If it be *Come* too much, it will look rugged, and be apt to stick together, and when stirred, it will fall uneven, or on heaps: then being staid from *Coming* we remove it into our upper Floors, where we keep it with stirring in hot weather 3, 4, and sometimes 5 times a day to wither it, as necessity requires, and that either with the *Casting* or *Running-Shovel*, as it is convenient for our Rooms; but in such cold weather as we have now, only twice a day is sufficient.

One thing I must not omit, since many *Maltsters* are ignorant of it, when the *Spirits* come forth at the Root end of the Corn, another *Spirit*, which we call the

the *Acrospire* begins to stir at the same end, and as the exterior *Spirits* run fast out, it moves slowly backward under the Skin unseen, and when they are come long enough, it is seldom gone further back than the middle of the Corn, but if the *Malt* afterwards be not cooled too hastily, or cast overthin on the withering Floor, this will run back to the end of the Corn, to which if it reach not, the part of the Corn which it passeth not, will remain *Unmalted*, the rest will be perfect *Malt*. But if for want of stirring the *Malt*, or giving the *Barly* too much water in the *Cistern*, both which cause it, the *Acrospire* Come out, it carries forth with it the *Heart* of the Corn, and leaves little but *Husk*, especially if it get length, as was before intimated.

After the *Malt* has lain on the *Withering Floors* about 12 or 14 days, it will be fit for the *Kill*, on sooner, if it begin to *Acrospire*, yet in sharp frost, it will scarce be ready in 3 weeks.

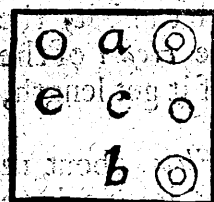
In *Summer* time and hot weather, the Corns that are bruis'd by the *Maltsters* feet or shovel in stirring, will be apt to mould, and the *Malt*, if kept but a little too thick, or omitted when it ought to be stirred, will *Acrospire*, and if to prevent the *Acrospiring* it be thrown thin, many Corns will parch and dry into *Barly* again. Moreover in those that *Come*, the *Acrospire* will scarce run back to the middle of the Corn, so that one half of it will be left *Barly*, which is the cause why *Summer* made *Malt* brews ill, and is disliked by most of our *Ale-brewers*. The *Malt* made in the hot weather of *Summer* will not abide to lye above seven days on the Floor after it is *Come* enough, before it be convey'd to the *Kill*, by reason it is apt to contract *mould*, which has a bitter taste, and gives *Drink* an ill relish, but when the weather is cool in *Summer*, as good *Malt* may be made as after *Michaelmas*.

The *Malt* is laid on the *Kill* to dry something thicker than it lay on the *Withering-Floor*, where when it has lain some 5 hours, with constant fire under it, the *Maltster* gives it the first turn; about 4 hours after, the 2d. and some 3 hours after that, the 3d. And if the *Kill* dry well, in 3 hours more, with a moderate fire (for fear of *fire-fanging*) it will be dried enough: Thus it lyes about 15 hours on the *Kill*, sometimes more, and sometimes less, according to the goodness of the *Kill*, and greenness of the *Malt*, which if it be not well withered before it be laid on the *Kill*, will require a longer

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time to dry, and one turn on the Kill extraordinary. But the Brick-kill which I shall presently describe, will dry a greater Quantity in four than we usually lay on one of the same Capacity, and the common Make in twelve hours. The ways of turning the Malt on the Kill are various, the best esteemed, but most troublesome, is thus;

Our Kills being all of them four square, we begin at any side, and with the broad Shovel cast up all the green Malt on it, into two heaps in the opposite Corners, the dryest next



the Hair-cloth, into the middle space, betwixt them; as if we began at the side e, in the upper Figure, we throw all the green Malt into two heaps in the opposite Corners a & b, but the little dry next the Hair-cloth, betwixt them to c; then having shaken up

the Hair-cloth, so that no loose Corns may stick to it, and again laid it down very strait, we remove the green heaps to the opposite Corners d, e, in the under Figure, but the little middle heap, with the dry under the other



two, the Shakings of the Cloth after they are removed to the space betwixt them, e, then again composing the Hair-cloth, we first cast down the two green Heaps all over it of an even thickness, and then the dry Heap all over them; thus the greenest is turned to the bottom, and the dry lyes on the top. Afterwards the Maltster rakes it all over with a Wooden Rake, to leave it every where of as even a thickness as possibly he can.

But the most usual, tho' not so much approved way, is this, The Maltster throws all the Malt on the Kill on one close Heap, in the middle of it, then shakes up his Hair-cloth, which being laid down again very even, he casts the said Heap abroad again round the Kill, clearing the Hair-cloth all that breadth where it lay, or something wider, which place he sweeps clean with a Besome, least any Corns sticking to it, should be Fire-singed, then he fills up the said sweep place with Malt cast into it round from the sides, and raking it very even, leaves it.

I have formerly described to you the Fabrick of our Kills now used; but having seen one better contrived all of Brick, and promised you the description of it, I shall here endeavour to acquit my self of that Obligation. Of which more in the next.

London, Printed by J. Gain, for the Author John Houghton, and is to be Sold at his House, against the Ship-Tavern in St. Bartholomew-Lane: By John Lawrence, at the Angel in Cornhill; near the Royal Exchange, And by Moses Pitt at the Angel in St. Pauls Church-Yard, 1682.

COLLECTION OF LETTERS

For the Improvement of Husbandry & Trade,

THURSDAY, July, 20. 1682.

The Contents.

A Description of the Malt-Kill (by the Ingenious I. F.) promised in our last. Observations, From a very aged Vertuoso, (as I am told) concerning several Matters which belong to our Argument.

A Description of the Malt-Kill (by the Ingenious I. F.) promised in our last.

IN that Kill which I saw at Nottingham, the Walls were all of Brick, not reclined as ours, but erect, being on two sides, the Walls of the Building, it was within about five yards square each side. At the Arched Entrance, tho' I am not tall, I was forced to stoop a little; being got within, I noted seven slender

K

slender *Arches* besides the two Walls, made all of *Brick*, distant about eighteen Inches, or a foot and a half from each other, all of the same Form, Height, and Thickness: The *Bricks* stood end-ways in the *Arch*, so that each *Arch* was but four Inches, or a *Brick* breadth thick. At their Foundations they stood out almost a foot from the Sides of the *Kill*, which made it seem more long than broad, and each of them at about five foot height from the Floor, had holes about seven or eight Inches wide left in them, that so the heat might pass from one *Arch* to another.

Exactly in the middle of the Floor, or under the 4th. *Arch* was the Fire placed, the *Grates* of which lay about one Yard three quarters from the *Hair-cloth*, or something more: over the Fire was a square *Flame-stone* hung in Irons, fastened into the third and fifth *Arches*; it was something more than a Yard long, and about 3 quarters of a Yard broad; it lay a little better than a Yard distant from the *Hair-cloth*, and three quarters of a Yard from the *Grates*, and was something above two Inches thick. The *Grates* stood about two foot from the ground: the Fire-place was walled round with a Set of *Bricks*, but under the Fire, was open before, to draw the Ashes out.

Above, on the *Kill*, the *Malt* and *Hair-cloth* being removed, I found eight rows of very large *Bricks*, lying edge-ways over the Spaces, and their ends resting upon the *Arches*, those of one row touching the other. The length of a *Brick* was near twenty two Inches, the thickness about two. And the Spaces betwixt each of them but a *Tile* thickness, or three quarters of an Inch; the breadth I could not measure, for they lay too close, but it was proportionable to the thickness and length.

These

These being once heated with the Fire, retain the Heat a long time, which causes a less expence of Fuel than is usual in our best *Kills*, which if the Fire be not repaired in due time, will quickly cool, and not hastily again be heated.

One Inconvenience in our common *Kills* is, that if we make but our Fires a little too big, the *Malt* will be *Fire-fanged* (*i. e.*) the *Comes* will be burnt into a brown reddish colour, and the scorched ends of the *Malt* will smell ill of Fire, which is one of the worst faults of *Malt*, for besides that, such *Malt* will yield no great quantity of Liquor, that which it doth yield will be high coloured, and relish very ill: But in these new *Kills*, the *Fire-fanging* is never feared nor known; for the *Flame-stone* hinders it over the Fire, which falling obliquely upon the other *Arches*, is so often retunded, that its great scorching Force is broken ere it reach the *Hair-cloth* and *Malt* upon it, so that it only heats the *Bricks*, whose Heat dries the *Malt* very evenly. Further, these *Kills* will seldom need any Repairs, and those which they shall require, cannot be chargeable, for the greatest Damage they can easily receive, will be but the breaking of a *Brick* or two under the *Hair-cloth*, which by supply of another or two kept in readiness for the purpose, may be easily and cheaply repaired.

I have formerly informed you, that all our *Floors* are made of *Plaster*, and why that is more fit for making *Malt* on than *Floors* of *Mud*, *Lime* or *Boards*, so that I need not here repeat my Reasons.

I had almost forgot to add one thing more, which concludes the Work of the *Maltster*. His *Malt* being dried enough, he removes from the *Kill*, and laying it above a foot thick, treads it round three

or four times, beginning at the outsides, and winding himself round, till he hath trod up to the middle of the heap, and so back to the outsides again; this he calls a *Course*, and in going two or three such *Courses*, his *Malt*, if well dried, will be trodden enough, that is, all the *Come* will be rubbed off; then if the *Malt* be to be kept long, he throws it upon a heap in the *Dust*; but if it be to be sold within two or three Months after, he dresses the *Dust* from it, by running it through a *Fan* or *Frie*, that so it may take the Air better in the Heap, and become more mellow. When *Malt* is to be used, it is best to have it ground ten or twelve days before it be brewed. I have heard of a Gentleman who would have his *Malt* kept ground double that time, and his Water five or six days in the Brewing Vessels before he would use either. You are not unacquainted with the qualities of our Air, how it opens Bodies, and makes them fit for Operations. You will easily therefore conjecture how it renders both the *Malt* and the *Liquor* fitter for use, than if they were taken immediately from the *Mill* and *Fountain*, and what was the reason of his Practice, I have resolved with myself not to *Philosophise* here, upon this, and the many occasions I had given me in Writing these few pages, but to leave all to your better Considerations.

I have truly described the Operations of our Servants on the *Barly* from the *Cistern* to the *Garner*. If I have done amiss in any thing, I fear it is in being too *Prolix*. If you judge any thing here wanting, or not well exprest, my Letters on the Intimation shall supply that Defect. Excuse the long delay of this, and assure your self, I am ever, *Your most humble Servant,*

J. F.

From

From a very aged Vertuoso, as I am told, concerning several Matters, which belong to our Argument.

S I R,

I was very glad for your own sake, and for the publick good, to see you in your *No. 3.* assisted by Dr. Plot, who in his fair Volume of *Oxfordshire*, hath given us the best Example of the Natural History of our Country, that hath appeared yet in any Language that I know: and I hear that his account of *Staffordshire* is in the *Press*; I wish he could bring on that Country to do in a full Body for all sorts of *Hortulanes*, as they do by his Majesty's Example all about *London*, and in the *West*, on *Severn*, and *Wye*: Then all the *Northern* Countries (who have *Trent* (which was ever accounted the third River of *England*) and many other fair Rivers, very proper for this purpose) would follow them, and this would suddenly be a very immense vulture to this Kingdom. Dr. Plot in *No. 3. page 32.* tells you right what would be a means to make *England*, not only the most delightful, but also the wealthiest Kingdom the World is acquainted with, and you need no greater Encouragement than he gives you there, *page, 34, and 35.*

Sir, As to your first *Number*, where you give us abundance of Enquiries concerning *Husbandry*. I will name to you Authors, their Price, or their Bulk, that

that have performed much more than you have enquired, *Viz.* If you see Mr. *Evelins Sylva and Pomona*, the Third Edition, Chapter 27. page 140. Of the Infirmities of *Trees*, &c. you would see much more answered, than your Enquiries do sollicite: and of this *Edition* you might truly say, that 'tis so perfectly compleated beyond the former, that 'twould be a most pleasant Entertainment to all our ingenious Nobility and Gentry.

Your most difficult Enquiries are answered in *Hartlib's Legacy*, Edition the third, page 41. Deficiency concerning wast Lands, to page 46. Octavo, price two Shillings. And *Hartlib's Legacy* is never to be forgotten, having done so much good in all kinds of good Husbandry all over *England*, in the former imperfect Editions, when scarce any one durst offer for Improvements, least he should be called a *Projector*, as if he came from the *Fenns* to borrow five Shillings to purchase five thousand pound yearly, so averse were our *English* then from all care of Improvements.

This *Sylva* may cost a *Mark*, and the very *Introductions*, *Prefaces*, and *Gardiners Calender*, are lovely worth the Money. I can name you twenty more that have gone far beyond your Enquiries.

Great Matters have been done for all points of *Trade*, *Manufactures*, *Commerce*, and *Culture*, since your Enquiries were Printed in Mr. *Oldenburgh's Phil. Transf.* as Dr. *Grews Musaeum*, his *Anatomy of Vegetables*, two such Books as the World never saw before, *Lovels Herbal*, Mr. *Collings*, of *Salt*, *Fisbery*, *Cookery*, &c.

&c. in *Octavo*, price *eighteen pence*; if duely regarded, it may be worth to the King and this Monarchy at least, ten Millions *Starling*, as appears by the account of Sir *W. Raleigh*, Sir *John Burroughs*, Mr. *L'Esrange*, and Mr. *Whites* old *Journal*, taken at a view of the Gains the *Dutch* got by invading the *Royal Fisbery* in the *Northern Seas*: And Mr. *Evelins* excellent *Treatise of Commerce and Navigation*, in *Octavo*, about two *Shillings*, shews by *Authenticall Records*, the great Advantages of the *Royal Fisbery*, both in *Europe* and *America*. And Mr. *Munns Englands-Treasury* is of such Concernment, that a great Statesman pronounc't of it, that if the third and nineteenth Chapters had been timely regarded, the *Hollander* had never been able to have ingaged in a War against *England*. The *Plea for the East-India Trade*, in five Sheets, five *pence*, doth shew the mighty Improvement of that Trade for *Englands* Benefit.

Dr. *Muffits Healths-Improvement*, in *Quarto*, 2s. the best that ever was written in any Language, for the most healthful *Diet*, for the choice and well ordering of *Flesh*, *Fish*, *Vegetables*, and all sorts of *Foods*. Sir *Hugh Platt*, *All Over-good*; but especially his *JEWEL-HOUSE of Art and Nature*, in *Quarto*; price, two *Shillings*.

There is more Matter from the same Hand, which will be communicated some other time.

By

By my Friend, I am desired to insert what follows, *Viz.*

There is lately invented a more Compendious way of *Plowing*, with one Man and two Horses, or one Man and two Oxen only; which will *Plow* any sort of Land whatsoever as will not be performed by the common *Plows* with less than double the number of Men and Cattle: which is offered to the Kingdom as an infallible and unmatched Improvement by me, *Thomas Lewellin*, at the *George* in *Cateaton Street*.

ERRATA.

Page 5, line 1. for Venerations, read Venations. p. 6. l. 1. after Merret, r. M. D. l. 5. for 3000, r. 3000. p. 19. l. 1. for the, r. your. p. 26. l. 28. for Domination, r. Denomination. p. 32. l. 27. for beneficial, r. benefit. p. 31. l. 9. for Plott, r. Plat. l. 15. for Plott, r. Plot. p. 47. l. 23. for the, r. your. p. 54. l. 16. for Adtages, r. Advantages. p. 60. l. 21. for an, r. a. p. 62. l. 27. dele with. p. 63. l. 11. for 1683, r. 1673. p. 65. l. 30. for inbibes, r. imbibes.

London, Printed by J. Gain, for the Author John Houghton, and is to be Sold at his House, against the Ship-Tavern in St. Bartholomew-Lane: By John Lawrence, at the Angel in Cornhil, near the Royal Exchange, And by Moses Pitt at the Angel in St. Pauls Church-Yard, 1682.

A COLLECTION OF LETTERS

For the Improvement of Husbandry & Trade,

THURSDAY, October, 19. 1682.

The Contents.

A Defence of the Act Prohibiting Irish Cattel, or an Essay to Answer all the Material Objections against it that could be met with.

S I R,

MANY Have been the Debates For and Against the Importation of Cattel from Ireland, and almost every man in England hath been concerned about it. The three Estates in Parliament have prepared Three Bills for their Prohibition, which his Majesty hath made Laws:

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And

And yet I find many to grumble and complain against it, and some of them have publish'd their Reasons. A Collection of which, such as occur to me, here follow, which I will set down in their full strength, and Answer each in their Order.

And First, It is urged, We shall loose some Shipping. This I grant; For 'tis a plain Case, that if we were wont to imploy a hundred Sail of Ships to bring over Cattel, and now we bring none, there will be no need for those Ships. But it will also be as true, that seeing we are an Island, if by Prohibition of Irish Cattel we Increase our Wealth, and thereby consume more Forreign Goods, and send out more of our own Product, it will increase Navigation, according to the quantity of Goods so Imported and Exported; a guess at which may better appear at the end of these Considerations.

To the Second Reason, Viz. The Irish Cattel coming over Young, and very Cheap to the first Market, made them double the price by one years feeding, which was the greatest Improvement to be made of our dry Pasture Land in England.

This I will not gainsay, and supposing it true, I cannot see where is the English Advantage, for I humbly conceive, that when the Parliament meet, they will not pretend, that they Consult for the Advantage of this or that Place in Particular, but for the Advantage of the Whole in General. And the Case here, is not whether the Prohibition of Irish Cattel be the Advantage or Disadvantage of dry Pasture Grounds, but whether it be the Advantage or Disadvantage of England? And truly for my part I do believe that the Prohibition hath done England a great kindness in General: And my Reasons take as follows.

I beg

I beg that it may be granted, that 'tis better for England to have an Ox for nothing, than to give one Shilling for it.

If so? then it will follow, That if for an Ox to Ireland, England gives, besides its own Product and Labour, that which is (or costs) but a Shilling, or that which hinders the fetching of a Shilling from another Place, by reason of its being carried to Ireland, it is a Shilling loss to England, if the Ground and Labour of England will produce another Ox without a Shilling prejudice to other matters.

And I presume we may do so, because we have Land that may be Improved, & People that may take greater paines without prejudice to any other matters.

The Reason of the Prohibition, is by the Preamble of the Act expressed to be the lowness of the Rents of England, caused by the multitudes of Irish Cattel Imported into England, which to me is a very good Reason.

For surely the greater the Consumption of the Products of the Land, the dearer will the Tenant sell his Product, and by Consequence the more Rent may be paid.

But the Breeding of our Cattel, at home, will consume more Product than if we Buy them from Ireland; for suppose we destroy a hundred Oxen a year at five years old, if we buy them from Ireland, we never need keep more than a hundred at a time, because we may buy them at the beginning of the year, and destroy them at the latter end; but if we yearly destroy a hundred English Oxen at five years old, we must necessarily keep five hundred Cattel continually, viz. A hundred of One, Two, Three, Four and Five years growth, or else there will want a Supply,

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and

and if these five hundred English Cattel will not consume a greater Product than the one hundred Irish will, I must confess, I have mistaken the Mark: But if not, then it will follow of necessity, that Rents by a *Prohibition* must rise.

But to this, 'twill be Objected, That notwithstanding the Act of *Prohibition* is in force, yet by wofull experience we see that Rents do still fall.

To which I Answer, That I think the Case of the hundred and five hundred Cattel to be as clear as any Demonstration in *Euclid*: But whether it be or be not? it ought to be taken so, till it can be gain-said; and if not, we ought to enquire whether something else be not the Cause, and not this *Prohibition*: For my part I believe it is, and one Cause to be as followeth.

The late unhappy Wars brought a great many well witted wealthy Gentlemen to Distress, which forc't them from their Sedentary to Practical studies, whereby they might live, so as might maintain the honour of their Families, these were push't on by the Industry and Indefatigable pains of Mr. *Hartlib*, and some others. And since his Majesties most happy Restoration, the whole Land hath been Fermented and stirred up by the profitable hints it hath received from the *Royal Society*, by which means Parks have been disparked, Commons inclosed, Woods turned to Arable, and Pasture Lands improved by Clover, St. Foine, Turnips, Coleseed, Parsley, and many other good Husbandries, so that the food of Cattel is increast as fast, if not faster than the Consumption, and by these means, although some particular Lands may fall, I strongly perswade my self, that altogether, the Rent of the Kingdom is far greater than ever it was. I strongly presume, that no considerate man

will

will gainsay this, if I thought he would, I could defend it by twenty other good Arguments,

I have never heard to the Contrary, but that *English* lean Cattle will thrive in dry Pasture Grounds, as well as *Irish*, and if we do give dearer for them, it is to our selves, and so what one looses, the other gets, and where the damage is to *England*, I cannot see.

To the *Third, Viz.* The Trade of *Hides* and *Tallow*, or else of *Leather*, will be beaten down in *Foreign* Markets by *Ireland*, if they come to kill all their Cattle at home.

In answer to this, I must confess, that although sometimes People are led by fancy, yet for the most part, especially in Staple Commodities, Goodness and Cheapness, bears away the Bell; and if *Ireland* have a great deal to spare of Hydes, Tallow, and Leather which they can sell at a *Forreign* Market, of equal goodness to ours, and cheaper, they may in all likelihood sell first. But as for the two first, *Viz.* Hydes and Tallow, I have not heard that we were much used to Export them unmanufactured, unless a little Tallow for *Guinney* to grease the Blacks, and keep their Skins from chopping; which I presume, neither the Company, nor Interlopers will go to *Ireland* on purpose for; or dry Hydes from the *West-Indies* to *France*, which I presume is not the Case, and of that Trade we hardly, or ever had, 'twill be no great Prejudice to beat us down in. The Hydes they send abroad, I understand, are salted; and if *Forreign* Countries knew what to do with them as well as we, methinks they should out bid us, and buy them up, and so by gaining to themselves the Manufacture, not be so earnest, and at so great cost for our Leather, which I hope they will.

will not beat us down in neither; for some very much question whether any body can Tann so well as we; but if they can, and can have Hydes cheaper, and Beef Cheaper, or can live without it, upon Cabbages, Roots, and such like, methinks 'tis strange they are still so eager of our Leather, both *Backs & Calve-skins*; and the Shoe-makers were exceedingly out when they so earnestly Petitioned the *Parliament* against its Exportation, as if they must buy all their Leathern Manufacture of us (which I think was a Mistake too; for they would have made some shift with worse) and likewise the *Parliament* it self, when at one time they prepared a Bill, and got the Royal Assent for a total Prohibition of its Exportation, and at another time for Duties and Restraints upon it.

But suppose all I have said to this Point were nothing, if the *French, Dutch*, or others wanted Hides, Tallow, or Leather, would they not go for them where they could have them cheapest? And was it ever known in late Ages, that *England* could sell them as cheap as *Ireland*? If they could, I dare say, it was because the *Irish* were fain to sell them dear, because they sold their Beef so cheap, viz. Twelve Shillings the Barrel, containing two hundred and a half, which is Six-pence above a half-penny the pound (as 'tis asserted by an Eminent Citizen) which I suppose may very well go for the Barrel. And to think that *Ireland* could spare none, because they had here a fair Market for their Cattle, I believe will prove a Mistake, for they kil'd abundance for their own use; and *Gerard Malines* in *Lex Mercatoria*, which was Printed in 1622, speaks as if the *Dutch* Traded there then for Tallow.

I will allow that the *Irish* are well Improv'd, but I think I shall never be perswaded, that all the Improve-
ments

ments that they have, or shall hereafter make, have been the effect of the necessity that Act put upon them.

To the *Fourth*, Viz. The young *Irish* Cattle served for the common Consumption in *England*, while their own large old fat Cattle went into the Barrel for Foreign Trade, in which *Irish* Beef had in a manner no part, though by the continuance of this restraint, it will be forc't upon Improvement, and come to share with *England* in the Beef Trade abroad.

By this we may plainly see, that had it not been for this Prohibition, our own great Breed would quickly have dwindled, seeing we should have little use for it, but only for our Forreign Trade. And also that hardly any of the *Irish* was sold for Forreign Trade, which puts me in mind what I was once told by Mr. *Rainsford Waterhouse*, a Merchant at *Wapping*, who hath a great Plantation in *Jamaica*, and keeps a great number of *Whites* and *Blacks*, Viz. That he found it cheaper to go to *Leaden-hall* Market, and buy good Beef there, and send it to his Plantation, than to send it from *Ireland*.

Now Ple consider how *Ireland* would share with us in the Beef Trade abroad, and I suppose it must be for the Victualing of our Ships, or furnishing other Countries.

As for the *first*, I cannot believe that for a Voyage to *Flanders, Holland, Hamburgh*, or any where East of them; we should ever go to *Ireland* to Victual, because tis the clean contrary way; neither should we, I think, in a Voyage to *France, Portugal* or *Spain*; they are too short to be at the Charge of going so mach out of the way, and being at the charge of wages and other expence, as a delay will cause. And into the

Streights

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Streights they'l hardly ever; Because if for *Turkey*, 'tis a Company, and they won't venture. If for other Places? they are ordinarily great rich Ships (especially since Wars, and the Incouragement of five, or ten *per Cent.* for building great Ships) and will not run the hazard of their loss of Wind, and other Expence for the profit; beside, they generally go with a Convoy, and cannot. If little Fish-Ships? they must make no delay, but run with all speed, to be quick at Market, least instead of Gold, they get dross. *Guinia* and *East-India* are managed by Companies, who will not permit their Ships to go thither, for fear more things should go on board than they are willing should; beside the Delay, Expence, and miss of Convoy, which their Savings, I am afraid, will hardly ballance: and as for the private Traders, they love to be out of harms way. Our *American* Plantations on the Main, are furnished to excess, that they overflow to the support of our Islands; and the other share which these have from *Ireland*, is incouraged by another Reason, *Viz.* They there procure abundance of Servants, which they must have, had they there had no Victuals, by which means they would kill two Birds with one Stone, though the Act had never been heard of.

As for the victualling our Neighbours, I see no Reason why they should not buy from *Ireland*, rather than us, notwithstanding the Act, for I can't imagine but that they might afford it cheaper than we (*Viz.* a half-penny *per* pound, as above) and we know the Merchants ordinarily hunt for the like things, at cheapest Rates; and 'tis hard to think that *Ireland* could have none to furnish them, had not this Expedient been found out to teach them, for they must needs find some to furnish their own Inhabitants,
and

and TRADE.

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and if for them? they could as easily furnish others, and at this rate, they must still have served *Holland*, the *French Kings Army* at *Dunkirk*, with *Tangier*, *Canaries*, and perhaps some other places.

To the *Fifth*, *viz.* Grounds were turned much from *Breeding* in *England*, either to *Feeding* or *Dairy*, and this advanced the Trade of *English Butter*, which will extreamly be beaten down when *Ireland* turns to it too (and in the way of *English Housewifery*, as it hath done a great deal since the Restraint upon *Cattle*.)

That Grounds did Improve in *England* before the *Prohibition*, I can easily grant, and so might be made much fitter for *Feeding* or *Dairy*, but that they have Improved much more since, I think will hardly be denied; Witness the Great *Inclosures* in fundry parts, the great Increase of *Clover*, and *St. Foine*, with *Turnips*, *Tares*, *Carrots*, *Coleworts*, and several other good Husbandries. And if what I said above in *Page 82*, be true about the one hundred and five hundred *Cattle*, then it must needs encrease since. If our Great *Cheesemongers* be closely consulted with, they'l tell us indeed that the price of *Butter* and *Cheese* is fallen, and little to be got, as is said, of almost every thing else; but they will not tell you but that we produce a greater Quantity: and we see the Goods of all the World fall as well as our *Butter* and *Cheese*, and so not to be imputed wholly to *Ireland*, and to all those Places where 'tis not our Interest to carry *Irish Beef*, 'Twill be no more our Interest to carry their *Butter*, *Cheese* or *Candles*.

I have shewn already (in *pag. 46*, of these *Papers*.) That the Increase of *Goods* and *Traders* in one Place may rather Improve than Spoile another; to which I'll add some *Queries*. Has the Increase of the *Impor-*
tation.

tion of Wine at London, lessened it in other Ports? Has the Increase of Ale at London Lessened it at Margate, Hull, Stockton, Darby, or several other Places; or the Increase of Malt in Hartfordshire, lessened it in other Countries? Has the Increase of Ships at London Lessened them in the Out-Ports, or of England Lessened them of France? If these be answered in the Negative, as I perswade my self they may, then if the World consumes more other Goods then they were wont, why they may not consume more Butter, Cheese and Beef, I know not.

If England would improve to its height all its Lands, it is probable we might afford things as cheap as our Neighbours (although if Corn was sold for twelve Shillings the Bushel, and Beef six pence the pound, by means of an Incouragement for their Exportation, or double Consumption, I should not be sorry, and some other time I may give my Reasons for it) and to attain that, I think Prohibition an excellent means.

As to the English Houf-wifry in Ireland, I believe it improves them, but I fear no hurt to our selves, for the Reasons above said, and 'twil be hard to think that this Act was the only Cause of it; for if they had none before, yet it cannot be thought that the English Farmers or Huswifes who through Poverty, or any other Cause have gone there, should forsake the good English way that they were throughly vers't in, to take up the Irish ill custom, that was stark nought; and if not? they might grow too hard for us, as well as now.

To the Sixth, Viz. Whereas Ireland had before very little Trade, but with England, and with the Money for their Cattel, bought all the Commodities there which they wanted. By this restraint they are forc't to seek a Forreign Market, and where they sell, they will

will be sure to buy too; and all the Forreign Merchandize which they had before from Bristol, Chester, and London, they will have in time from Roan, Amsterdam, Lisbon, and the Streights.

I think I have sufficiently shewn already in No. 4. of these Papers, that Ireland's thriving can never hurt us, and that it is better for England to have Ireland Rich and Populous than Poor, and Thin.

That Ireland had before this Act was thought on, but a very little Trade, except with England (although some they had, or else how came they by their Spanish Money, the Currant Coin of the Kingdom) I can easily grant, and the Advantages England got by it, was, it was a Seat of War, a Nursery to breed up Souldiers, a Place full of Tumults, Rapines and Rebellions, by which meanes 'twas a constant Drain to the English Blood and Treasure; but since they began to Trade the Royal Expence hath lessened, and since the Act was first made, the Tyde is turned; and beside the Advantage to the English Subjects, as in the aforesaid No. 4. a great Stream comes from thence into the Royal Coffers; and how much greater it may be in a few Years, I cannot certainly say, but I verily believe it may be doubled.

As for laying out the Money they took of us, with us again (if they Traded with no body else, or carryed none home) 'tis undoubtedly true; but I strongly perswade my self, we take more of their Money now, for they were then Poor, almost Barbarous and Spent but little, they needed no Shop-Manufacture, but a Bill to fetch home a Load of Wood, they'd cut two Poles, which with some cross Stricks and Withs, they'd make a Cart, and with the Manufacture of another Wyrh, ty'd to a Jades Tale, they'd briskly job it home;

some Relicks of this do still remain, but now they have altered their Condition, they are grown Rich, live High, spend Luxuriously, and consume a great many times more Goods than they were wont, which must make it almost necessarily follow, that they must spend more Lead, Tin, Coales, and other Commodities that only we produce, as also East and West-India, Guinny, Turkey, and other Goods; and of these, such as we can sell cheapest, or France, Holland, and all Europe must buy of us; I hope the Irish will do so too, or else if they do leave Bristol, Chester, and London, to buy at Roan, Amsterdam, Lisbon, and the Streights, they must have it at second-hand, and how much hurt that will do us, I shall not now reckon; but I am strongly perswaded they'll ne're hurt us, by Trade, so long as our King shall keep them under his Obedience.

In a Paper Entituled, *Reasons humbly offered to the Consideration of Parliament, for taking off the Prohibition, and giving leave to the Importation of Irish Cattel*, I find it said as followeth:

The Prohibition hath proved very prejudicial to his Majesties Revenue of Customs, not only of Cattel and other Goods Imported from Ireland, but other Goods that used to be Imported, and Exported thither, and paid Custom Inward, Outward, and there.

How much his Majesties Custom was for Cattel, I know not, if they were not worth above 80 or 90 thousand pound, and they were all valued as great Cattel, it would not amount to above ten or eleven thousand pound a year; and if it be not increas't more in England since then, beside the Increase in Ireland, I'm sure I am very much mis-informed.

As to the payment Inward or Outward, and in Ireland, I suppose it a mistake for usually Goods Imported draw back Money when Exported again. The

The Paper farther saith, *This Prohibition hath greatly prejudiced all or most of all the Land-Owners in England; with some Reasons for it, which I think, are already answered in the Answers to the Second and Fourth Reason.*

Thirdly, saith the Paper, *This Prohibition is Destructive to our Navigation and Trade; with some Reasons, which are spoke to in the Answer to the First, Fourth and Sixth Reasons.*

Fourthly, saith the Paper, *This Prohibition hath made Ireland lessen their Breed of Great Cattle, and increas't their Flocks of Sheep, so that they have Prodigious quantities of Wooll, which together with their Hides and Tallow, proves mischievous to England three wayes.*

First, By sending vast quantities of Wooll beyond Seas unmanufactured, whereby Forreigners grow Rich, whilst our own Poor starve for want of the work they use to have.

Secondly, By Wooll and Hydes sent into England, where we have too much for the Trade they have left us; so that our own Price is beaten down, we having more than we can use. And the like for Hydes and Tallow.

Thirdly, They prejudice England by setting up the Woollen Manufactures in Ireland, and by having Necessaries Cheaper, they'll Sell Cheaper, and so cause a decay of Trade to hundreds of thousands of our Manufactors, and consequently to Land.

I do abbreviate these *Reasons*, but think I honestly give the sence of them.

I see nothing to the contrary, but that England and Ireland spend as much Beef now as ever they did, if so? then it will follow, that what Ireland Breeds less, England Breeds more, and where's the Damage? that they

they Increase in Sheep and grow Rich I have shewn is good for us, and that *Wooll, Tallow, and Hides*, which are but the Materials of Manufacture, should hurt a Nation, I believe hath scarce been heard off.

I must confess I think the Exportation of *Wooll* to be a Great Kindness to our Neighbours and Prejudice to our selves, But had *France, Flanders and Holland*, no *Irish Wooll* before this Act? If they had? then 'tis not to be imputed here, if they had not? Neither is it because those Forreign Countrys did get *Wooll* from *England*: *Ireland* did produce a great deal of *Wooll*, and if those People could get it home from *Ireland* Cheaper than they could from *England*? 'twas very natural for them to do it, and Interest won't lye. And as for their buying greater Quantities, I must confess where more is to be sold, more may be bought; and 'tis as true, that according to Sales, so are the Provisions to supply the Market. Now if *England* supplies it self, and stops their Market for Sheep hither? unless they can find a greater Market some where else (which I don't hear off) what should tempt them to produce more? And 'tis a plain Case that our Poor in *England* are not starved for want of the Work they had for Forreign Consumptions; for it is a Question whether ever the *Woollen Trade* was Greater in *England* than it hath been since.

As to the *second way*, 'tis as plain by the Event that this Gentleman had not a true foresight; For the vast quantity of *Wooll* we had from *Ireland*, did not prove more than we could consume, for we wanted; nor bring down the Price of our own, for we almost doubled: and as for our being clog'd with *Hides* and *Tallow* as well as *Wooll*, they cause our Manufactures to be cheaper, which will inable us to sell the more, which

which will increase Manufacturers, which will Improve Land, according to his own Sentiments.

The *Wooll* comes from *Ireland* to us by Allowance, and in short Voyages; to them by Stealth, and longer, why therefore we may not outdo them now, as well as formerly, I see no reason.

The third way, I have spoke to already in No. 4. to which I refer you, finding I shall be longer than I wish for.

This Paper further saith, *This Prohibition hath put Ireland out of a Capacity of Trading with us, because they cannot pay but by Money in Specie, or Bills of Exchange, at 15, or 16 per Cent. which is double the Traders Gain, which inforceth the Irish Gentry to retrench a sixth of their Expence, which hinders further the Consumption of the Growth and Manufacture of this Kingdom.*

To which I answer, That *Ireland* doth, and must Trade greatly with us, for the Reasons cited in answer to the sixth Reason, and they do pay us a great deal in *Wool, Hides, Tallow, Yarn*, and other Commodities, and for *Bills of Exchange*, although 'tis call'd 15, or 16 per Cent. 'tis not really so, for they call a *Guinney*, 23 s. which we call 21 s. 6 d. By which reason, if one delivered 100 l. in Gold there, they might not receive so much here in Silver by 15 l. But if they delivered one hundred *Guineys* there, they might receive one hundred here, except eight; which was the Consideration at that time, for the time of Non-Payment and Hazard: But if they sold *Beef* at *Dunkirk*, and received a Bill payable at *Burdeaux*, for which they received Gain from their *English Creditor*, and also sav'd the Charge of returning it to *Ireland*, the difference would appear but very small.

That 15, or 16. per Cent. is double the Traders Gain

Gain in a great many Cases, I can't deny, although I am sure 'tis not so in our Trade, for we *Apothecaries* get at least (when we are paid) half as much more.

I cannot gainsay the *Irish* Retrenchment, and People cannot spend beyond their Stocks and Credit, but 'tis generally reported that the *Irish* Rents do much improve, and how much that will tend to Retrenchment, I won't dispute.

The Paper further saith, *This Prohibition hath undone many Eminent Tradesmen in London, for want of Sale, and return to and from Ireland, of their Wares out of Fashion here.*

I have already shewn, that to pay at *Dunkirk*, or *Burdeaux*, is no great Prejudice, and by reason of their Dependence on our Court, they must take their Fashions thence, and consequently a great part of their *Fynery*.

I remember, in the Years 1665, and 1666, most Diseases turned to the *Plague*, and when the *Exchequer* was first shut, few people fail'd, but imputed that for a Cause, and 'tis very likely the *Irish Act* might be as bad, I yield the Point.

What remains of this Discourse, you may expect in the next.

London, Printed by J. Gain, for the Author John Houghton, and is to be Sold at his House, against the *Ship-Tavern* in *St. Bartholomew-Lane*: By *John Lawrence*, at the *Angel* in *Cornhill*, near the *Royal Exchange*: By *Moses Pitt* at the *Angel* in *St. Pauls Church-Yard*: and by *William Cadman*, at the *Popes-head* in the *New-Exchange*. 1682.

A
COLLECTION
OF
LETTERS

For the Improvement of

Husbandry & Trade,

THURSDAY, November, 9. 1682.

The Contents.

A Continuation of the Defence of the Act Prohibiting Irish Cattel, or an Essay to Answer all the Material Objections against it that could be met with. An Account from Mrs. A. Lancashire, of Manchester, shewing the manner how there they Cure Woodcocks, so well, that a better Dish is seldome met with.

The Continuation of the Defence of the Act Prohibiting Irish Cattle, &c.

S I R,

TIS further said, *This Prohibition is likely to prove fatal to England in its Fishery; for they lying more convenient, and having necessaries more Cheap, may in time destroy the Fishery of this Kingdom.*

N

This

This I cant deny, but I hope they'l undo the *Dutch* too; but we have had as great Advantages above the *Dutch*, for some scores of years, as 'tis commonly said by most that write or speak of the matter, and as they say, can do nothing: now if the *Irish* can do that, which 'tis said, we cannot, and thereby furnish our King and Subjects with more Money and Seamen, I know not where is the Inconvenience; surely we may still dry *Herrings* at *Yarmouth*, and still catch *North-Sea-Cod* and *Pilchards*, with fresh Fish for our present eating; which if we do, Pl ne're envy the *Irish* Happines.

'Tis farther said, *By reason of the loss of our Manufactures, our Artists remove to Ireland, which will prove a greater disadvantage to England, than the bringing over their Cattel.*

I will not gainsay this: but the increase of our *Manufactors* and *Traders* is our great complaint; (as I have shewn in *Englands Great Happiness, Or a Dialogue between Content and Complaint.* Sold by *Ben. Billingsby* under the *Exchange.*) And in *No. 4.* of these *Tracts*, I have shewn that *Ireland's* thriving is our Advantage.

I think what I have already said will answer all the next Paragraphs; only I'll again take notice, That if the *Labourers* pay a *Million a Year* more than they were wont, by reason they must feed on *English Cattel*, I hope the *Breeders* and *Graziers* will gain it, and then the *Rents* may be paid as well as before; and if I should say, That the Nation thrives more, and the *Manufactors* live better, and sell things cheaper, when Food is rather dear than cheap, I am sure I should have a great many of my side, and I think I can give such Reasons for it, that none can deny, and some other time may do. There

There is a Letter from an *English* Gentleman to *Mr. Garway*, which speaks of High Disadvantages by the *Act*; but he still speaks of Breeding and Feeding Grounds, and so (what's remote from the point) he reckons single *England* in the Plural Number; and I think what I have already said, will answer all: Only

The Act of it self is without Example; for no History records that any Prince or State made any Law to prohibit Provisions from their State or Kingdom.

I am not so well read in *Forreign History*, as to give an Instance of the contrary; but *England*, before this Law was made, had a Law almost to a Prohibition; for when 'twas under a certain Price at the Port, where imported, the *Forreign Corn* was to pay so great a Custome, that 'twas seldom worth while to bring it in; but when 'twas above that certain price, then they might bring it in at a very small charge. Now the difference between a Prohibition and so high a Price as would discourage I wont contend for. But if other Nations do not prohibit, it is no Argument against us: they may not have so plentiful Countries, or may be more lyable to spoil by Warrs, or may not understand Trade so well; they have made no *Act* of *Navigation*; 'tis but some that have the Principle of living high, of believing that the more the Inhabitants spend, the richer the Country shall be: 'Tis but in some Places, where if the Subject can get an Estate, he can call it his own, wherefore it may be convenient for our *Canaan*, who defends and oft supplies its Neighbours to make different Laws from those who might beg or starve without us.

I am now to enter the Lists with my old good Friend *Mr. John Collings*, one who has spent the best part of his Life in doing his King and Country Service; one who

beside his great Learning in the *Mathematicks*, hath made such a Collection of Matters tending to Trade, and pusht them on both in season and out of Season, in Parliaments and Councils, and all otherways where he thought it might do good, that few have done the like; he is also Sociable and Communicative, with whose Papers, and in whose good Company I have been often well informed, and much delighted, yet about *Irish-Cattle* we can't agree, and I must gainsay him.

In his Plea for bringing in of *Irish Cattel*, pag. 2. he shews as good Reason of my side, as I would reasonably desire: but in pag. 3. he begins against it, and quotes some Articles from a Report of the *Irish Council of Trade*, lent him by the Right Honourable, the Lord Brereton, deceas't, wherein *Article 15.* 'tis alledged, *That Ireland pays a Yearly Debt to England of about two hundred thousand pound.*

I have been told since, 'tis 300000 *l.* as in *No. 4.* and if it should lessen, I should be fearful that I were out, but how the Increase should prejudice *England*, I see not.

In *Article 16.* *That while the Cattel Trade was open, we received in Flesh but 80000 l. per annum, but they bought Goods of us to the value of 280000 l. per annum.*

I suppose besides the 60000 *l.* in *Hydes, Tallow, Wool,* and *Freight* there mentioned, they made up the rest in other Goods, in Money or Forreign Bills: If in Goods? then we may keep up a Trade with them for all above 80000 *l.* still. If in Money or Bills? they did drive a considerable Trade abroad before this *Act*, or else how did they get these Bills or Money? If so? then this *Act* is not the cause of their Forreign Trade, as 'tis generally asserted. In

In *Article 17,* 'tis said; *That about one Third of all the Imported Manufactures might be made in Ireland, and that about two Thirds of the remainder might be more conveniently had from Forreign parts than out of England; And consequently it is scarce necessary at all for Ireland to receive any Goods out of England, and not convenient to receive above one fourth from thence of the whole, which it needeth to Import, the value whereof is under 100000 l. per annum.*

To which I answer, If all the Land of *England* was Improved as high as I have, and hope to tell how it may be, we might be able to produce yearly twice as much *Cattle* (more than we did) as ever was Imported from *Ireland.* I will not deny but that one *Third* of all the Imported *Manufactures* might be made in *Ireland*: but till they know how, have the Materials, Can keep others out, so that the Cheapness of them may not undo the *Manufactor*, or they'l support him at a Publick Charge, they cannot be made there. And we are very much beholding to the *Irish* for Buying of us, when they can more conveniently have about two *Thirds* of the Remainder in Forreign parts; I shall hardly give my consent for *Englands* being so kind to them: And 'tis a *Maxime* in our Merchants, *That there is no Friendship in Buying and Selling*; and consequently if Wealth be necessary, it is necessary for *Ireland* (if they must have Goods) to buy them from *England*, if they can't have them as cheap some other way, and convenient also by the same Reason, let the Value be what it will; and therefore Mr. *Collins's* Conclusion will not hold, *That 'tis highly our Interest to admit not only Irish Cattle, but all their Commodities, to keep them by agreement on equitable terms (after propounded) from furnishing Forreigners.*

rriegers. And although their *Hydes* were formerly wrought into *Shooes*, and exported to the Plantations, as also their *Tallow*, yet we may have as much *Leather* and the Plantations neither want *Shooes* nor *Candles*.

The next *Paragraph* about *Wooll*, I have spoke to already.

In summe; If *Ireland* can, and doth, sell to Foreigners, *Wool*, *Hydes*, *Tallow*, *Flesh*, and *Fish*, at one moiety that *England* can afford them at, and if our *Lead* and *Tin* decline, I wonder that this being not redressed our Commodities do not lye on our hands, and that we have a greater Trade than ever we had since the World began. And the Merchants in their *Remonstrance*, 1659, may be mistaken if they think that alwayes cheap *Land*, cheap *Labour*, and cheap *Provisions* should get the Trade from other Countries, why do not *Russia*, *Norway*, and *Sweden* undo the World? What's the reason of the Common Proverb, *Tis better to live where your Dinner must cost a Dollar, than where you may Dine for a Groat*. Doth not *London* out-do the Country? and doth not *Barbadoes* and *Jamaica* far excell (for time and space) *Virginia*? Were I to remove from *London*, and Trade on, let me go to the next dearest Place, for there to be sure, I shall find most money stirring.

Had this *Act* ne're been, they would have had *Wool* in *Ireland*, and if they can sell it cheaper than we, it would be ship't off. If so? although Mr. *Pointz*'s his Calculation may be very good, it will signifie no great matter to us.

To the Second Argument.

Though the *Act* did pass, I am loth to think 'twas in favour to the *Northern* or *Western* Parts, I rather think 'twas in favour of the *Arguments* brought for it;

it; if any were to blame? 'twere them that opposed it, unless they could have brought better *Arguments*; beside, altho some Countries Might bring more *Parliament-men* than others, Might possibly make a greater Interest in the *House of Commons*, yet are the *Lords* led by the *Commons*, or have they no Understanding? For my part, of both these Honourable Houses, I must have better thoughts.

The loss of the *Eastern* and *Southern Parts* signifie nothing here, if the other get, and 'tis answered already; but of his Majesties present Loss, *That we shall loose the Dominion and Fishery of the Sea*, let's see a little.

In *Article* 17. before mentioned, 'tis said, *The Customs between England and Ireland in the freest Trade, came to 32000 l. per annum, most of which his Majesty would loose, and also more, by the dearness of Provisions for his Navy*.

His Majesties *Customs* both in *England* and *Ireland* are greater than ever, abating in *England* what's gone off by the ending of some *Acts*; and altho it might cost his Majesty a little dearer in *English Beef* than it would in *Irish*, yet seeing his *English Subjects* gain by it, they may easily make amends, and when they are giving, 'tis as easie to give 700000 l. as six. And though it be a little his Majesties Loss, the spending *English Cattel* makes the Nation no looser.

As to the Loss of Ships hereafter.

Mr. *Collins* saith, *The Eastern and Southern Parts have lost their Victualling of the Dutch, and of our own Merchant Men, as may be plentifully proved from the Searchers-Office at the Custome-houle, and 'tis already asserted in Print, That our Ships for the most part, Westerly or Southerly Bound, victual here bnt for six Weeks,*

Weeks, and take in the rest of their Provisions in Ireland, or Irish Provisions in Spain, according to the Contract made for the same.

What Mr. Collings affirms of his certain Knowledge, I dare not deny, I believe him a Man of Integrity, and suppose I grant he's not Impos'd on, will any Body think, that the quantity we are so hindred of selling, will countervail in value, the quantity we should eat in *England*, if *Irish Cattel* came over; for my part, I can't; and I would fain know what great Quantities it was the *Dutch* use to buy of us; it uses to be generally said, that the *Dutch* Victual cheaper than we, and their chief Diet is *Fish, Grout*, and such like, they might take a little *Meat*, and but a little, for otherwise the common Cry of their Victualling much cheaper than we will come to nothing, so that if I could not gain this Point, I should gain another over a thousand Complainers against our Politicks.

But I believe the same *Arguments* I have already brought against the greatest part of our Shipping going to *Ireland* to Victual, will serve against a great part of the *Dutch* stopping on the *English* Coast, except when by the *Ile of Wight*, or some other Places, they are Wind-bound, where still, as I am informed, they generally take in some fresh *Provisions*; and the lesser quantity of *Meat* the *Dutch* victual their Ships withal, less reason have they to go out of their way, make stops, or loose Convoy; beside, I see the Learned do not agree; for in the fourth Reason mentioned before, 'tis said, *The young Irish Cattel served for the Common Consumption in England, while their own large old fat Cattel went into the Barrel for Forreign Trade, in which Irish Beef had in a manner no part.* But here Mr. Collins saith directly contrary, and at his 4th. *Argument*,

Pag. 9. saith, *The Irish with their Hydes, Tallow, and Wool, are not so much Imported for our own Expence, as to ship off to furnish Forreign Markets withal.*

I cannot gainsay, but that the *Searchers Office* at *Customs-House* may have an Account of all the Victual fairely ship't off in the Out-Ports, but to have an account of it all one year, and compare it with another, is a great deal of trouble, I wish he ben't Impos'd on; if not? I presume there will be a great deal of difference between, a year a while after the Prohibition, when things in likelihood would be dear, and what will be, after we shall have time to stock our selves with our own Breed; and this we now plainly see, for the *Saturday* before the Printing hereof, was as good *Flank Beef* sold at Mid-day for eighteen pence the Stone in *Honey-Lane* Market by *Cheap-Side*, as any body would ever wish for, and when such *Irish-Beef* was sold cheaper in such Circumstances, I (though I have enquired) can't learn: and if it be no dearer at *London*? I strongly persume in several Parts of *England* it may be afforded much cheaper, and it being *English* Breed, and there fed, will be thought better.

The Calling at *Spain* for Victual, may also be true, but for reasons already about *Delays* and *Convoys*; I think it can be the Interest but of a few, and how much they'l have *Meat* cheaper there, after the *Freight, Customs*, and other Charges are added to the first Cost, than they could have it here, I cannot tell: but if much? why they might not have it there still, though the *Act* were void, I can tell as little.

If what I have said to this Point be thought reasonable, I need not trouble my self or you in answering his following *Queries*: only I can't but take notice, that the carrying *Beef* from *Ireland* to *Dunkirk* made

a great alteration, for as I quoted before, *Beef* was at *Ireland* about a half penny the pound, and here Mr. *Collins* saith, 'I was sold from 7 s. 6 d. to 13 s. 8 d. the 104 lb.

He speaks of 200 *Ships* at a time, part *English*, part *French*, but most *Dutch*, taking in cheap *Fish*, and other *Provisions* at *Wexford*; from whence he concludes, we must loose our *Fisbery*: But how the *Irish Act* is concern'd here, I can't see.

His third Argument is, *That so high a Duty may be laid on their Goods Shipt for any part but England, that we may sell equally with them, and then we must have their Cattel, or in what else shall they pay us the Debt before mentioned.*

I believe his Advice will ne're be taken, and they will better pay us now in *Bills of Exchange* for Money from other Countries. In what they do sell us, or increasing of them, they may rob the *French*, or some other Country, of some *Manufacture*, or find out some new one to serve us.

Lastly, in his fourth Argument he saith, *If we ought not for our own Expence to be furnished with Commodities from abroad, that we can supply our selves with at home, then ought we to have no Forreign Salt, Iron, Brass, Paper, Tapestry-Hangings, Canvas, Linnen, Earthen-Wares, Madders, Saffore, Smalt, Hard-soap, Tin-plates, and divers other Commodities of lesser moment, Imported, and no Salt-Petre from the East-Indies, nor Sugar from Portugal, seeing our own Plantations will afford it.*

Amen, say I, till all our People are fully employed, if it prejudices no other way; and I know that Mr. *Collins* hath been as zealous for the making these things in *England*, as most men, and some of them in this very Book. The

The next I meet with, and also mentioned in this Book, pag. 32. is some of the Observations made by Sir *William Petty*, upon the Trade of *Irish Cattel*.

1. Here 'tis said, *That 80000 l. per annum was the utmost value of the Flesh from Ireland, and not the hundredth part of the Rents of Land in England, nor above the hundredth part of the Butchers Meat spent yearly in England.*

2dly. *That Ireland never did, nor could spare Flesh to maintain a fifth more than now, that is about 1300000, of which there are about 1100000 now in Ireland.*

3dly. *Whereas Ireland contains three quarters as much Land as England and Wales, and there be above 6000000 of people in England, it follows, that if Ireland can furnish Flesh but unto 1300000, that England cannot with equal plenty furnish meat unto the said 6000000.*

4thly. Here he reckons up the Profit and Loss of particular men, which I think doth not belong to our question, but he ends, *That the Owners even of Breeding Lands have paid three times more in the Inhancement of Wages and Manufactures, than they got by the raised Price of their Cattel.*

5thly. *Since this Prohibition, the Papists in Ireland (who are 800000 in number, have gotten a Dispensation from Rome, to eat Flesh five days in the Week (whereas formerly they did but four, in which extraordinary day of Indulgence, there is as much Meat spent by the Papists in a year, as ever was brought into England.*

The 6th. I think doth not concern us.

The first, I can't gainsay, only observe that 80000 multiplied by 100, is eight millions, which makes every

every Acre of Ground in *England* one with another, yield almost a *Noble* a year, according to Captain *Graunt's* Account of *Acres*, mentioned in pag. 10. of these Papers; and if there be but 6400000 people in the Kingdom, as is also calculated by the same ingenious Author in his Observations of the *Bills of Mortality*, it makes the Expence of each Person in *Butchers* Meat in a year, not quite four *Nobles*, which is an Argument that this Kingdom is not half improved, either for their own, or the Kings Advantage. I must also observe, that if now since the Prohibition, we must of necessity keep five Head of Cattel for one, as is already said in these Papers, and the *Skins* and *Tallow* not being reckoned by this worthy Gentleman, our Wealth in Cattle must be mighty great, and three pence in the pound *Sterling*; for all the sorts of live Cattel that should be sold, would be an easie Tax, and as fine a Revenue for reviving the *Act* (whereas five Shillings a Quarter was allowed for the Exportation of *Wheat*, and other prices for other Corn in *English* Ships) as I at present can think of.

The *Second* I can't deny, this worthy Gentleman hath a great deal of Reason to know better than I have.

The *Third* is a necessary consequence of the *Second*; but we see, notwithstanding this *Act*, the 6000000, or what ere the number be, have Flesh plenty and cheap, and for my part, I question not, but that if all the Land of *England* and *Wales* were improved as high as reasonably it might, we might breed and fatten three times the number we do, but whether the Grounds of *Ireland* be capable of the like Improvement, I won't say, although allowing five times 80000 pounds a year to be spent in Flesh in *Ireland*.

land, and that they always keep five times so many, which at twenty shillings the head one with another, would be 2000000 of pounds, and so many head of Cattel, it must necessarily follow, that *Ireland* having above 18000000 of Acres, as being three quarters as much as *England*, must allow, if it were put to no other use, nine Acres for every Head, which I believe, if it were well Husbandry'd, would be more than needful.

The *Fourth* about Profit and Loss of Particulars, I think is spoke to sufficiently already, and *That* Wages and Manufactures are increased in their Value threefold: especially when Services and Quantities are increas't too; is as great an Argument that *England* hath thriven since this *Act*, as I can wish for.

By joyning the *Fifth* with the *Second*, I must conclude, that the *Act* is now useles, for if we wanted Cattle, from thence they could spare none, because *Ireland* can yield no more, by reason of the 800000 *Rapists* eating Flesh five times a week.

And now if all I have said will not give reason to believe that we make amends for the loss of our 400 Sail of Shipping that used to fetch Cattel, I must yield the Cause, only this I'll say, that if the 80000 pounds worth of Cattel, be reduced all to great Cattel, and valued at 40 s. the head, and a Ship would bring but one hundred at a time, it would imploy them all but one Voyage in a Year, but if two Voyages, then 200 Sail will serve; if four? then 100, beside, there go a great many Ships from *Whitehaven* and *Morson* with *Coles* to *Ireland*, and other Ships upon other scores; whether those Ships be fit to bring back Cattel, or 'tis more their Interest to go back light, I wont determine; but if they did bring back any

any, and I am positively told they did, then the number of the Ships we are prejudiced in must be abated according to their proportion.

Thus have I endeavoured to answer all the Material *Objections* I could meet with against the Prohibition of *Irish Cattel*: if my Arguments shall be thought good? they may quell the Complaints of a great many, and be useful to several other things of the like nature, especially if Cattel should be imported from any other Place: but if not, I hope some generous man, whose Inclinations lead him to such studies as these, will reply to my Arguments (if any of them have any weight) and propose some new, and enforce such old Reasons, as may cause the *Act* to be repealed, and a great many other good Laws to be made, whereby this Nation may receive all the Benefits by Trade that it is capable of, for which he shall have all the Respects that can reasonably be expected from him, who with all sincerity, most heartily wishes the best things for his Countries Welfare, and is Yours, &c.

An Account from Mrs. A. Lancashire, of Manchester, shewing the manner how there they Cure Woodcocks, so well that a better Dish is seldom met with.

Your *Woodcocks* when they are pull'd, drawn, and well washed, truss them up, then parboil them in Conduit Water, or other Water that will wash, for such as will not, will make them look red: let the water boyl, then put into it two or three *Woodcocks* at a time, and when they are just hot within, season them with

with *Pepper* and *Salt* as high as you please, but be sure to thrust in good store at the neck, you may let them lye in the Seasoning a Day and a Night, more or less as you have occasion, then stop them up with *Butter*, if haste require, this you may do as soon as they be cold, you may also put a little *Pepper* and *Salt* in the *Butter*; then put them in an *Earthen Pot*, with as much *Butter* under and over as you think will cover them; you may put to a dozen *Cocks* Seven or Eight pound; then tye them over with a *Paper*, and send them to the *Oven*, they will abide some two hours *Baking*, or thereabout, but you must look at them often, for if they be *Over-baked*, they will be spoiled; you may feel when they are tender: You must also send three or four pound of *Butter* to the *Oven* in another *Pot*, but set it not in half so long, only till it be clarified, then take your *Cocks* out of your *Pot*, and let all run from them that will; while they are draining put all your *Butter* together, and your *Cocks* being yet hot put into your *Pot* as close as you can, with the *Rumps* upward; then pour your *Butter* into them carefully, suffering none of the *Gelly* to go in with it, which will make them apt to putrify.

Unless your *Pot* be very fit, and your *Cocks* be put very close; less than ten or eleven pound of *Butter*, as I said before will not cover them. They will keep two Months, if they be well seasoned, four Ounces of *Pepper* will season fourteen *Cocks*, and *Salt* answerable, as you think fit. The best time for them is *October*, *November*, *December*; they are usually as good at their first coming, as other things are, if the Weather be cool; in *Frost* is best, they will be good the beginning of *January*, if it be then frost; but after the thirteenth, that is the twentieth day from *Christmas-day*,

we

NO HUSBANDRY

we count all *Wild-Fowl* out of season, or at least, not so good : they are in their prime in *November*.

I could have wrote this in fewer Lines, but in observance to your Desire, I have wrote all Circumstances from First to Last. My Humble Service, &c.

A. L.

If any other good *Houwife* will send me such exact Account, as this, of any other Matter that is very useful, and not universally known, they'l much oblige me, and I'll strive by it to oblige the World.

I believe this Method may be used for a great many other *Fowl*, whereby a greater *Correspondence* may be had between City and Country, and not only *London* be feasted with these *Delicates*, but by reason of our *Winter Voyages*, a great Trade made, and thousands of these *Pots* be carryed yearly to our *Western Plantations*, or any other Place, can be reacht to in less time.

I presume that the cheapness of the *Fowls* and *Butter* in the Country will pay for their Carriage, and make them as cheap, if not cheaper than they can be done at *London*.

London, Printed by J. Gain, for the Author John Houghton, and is to be Sold at his House, against the *Ship-Tavern* in *St. Bartholomew-Lane*: By John Lawrence, at the *Angel* in *Cornhil*, near the *Royal Exchange*: By Moses Pitt at the *Angel* in *St. Pauls Church-Yard*: and by William Cadman, at the *Popes-head* in the *New-Exchange*. 1682.

[III] Numb. 11.
COLLECTION
OF
LETTERS

For the Improvement of
Husbandry & Trade.

THURSDAY, December, 14. 1682.

The Contents.

An Account of some Proposals that have not, and what in likelihood will gain us the Linnen Manufacture: Published in hopes of Success the ensuing Parliament. A farther Account from the Ingenious Mr. Adam Martindale of Cheshire, about Improving Land by Marle.

An Account of some Proposals, &c. to Parliament, as above.

S I R,
MANY have been the Attempts for gaining the Linnen Manufacture, and as many hitherto the Disappointments: some are for obliging by Act of Parliament, a certain Proportion of every

ry Mans Land to be sown with *Flax* or *Hemp*, whereby we should have (as they think) a very great plenty of such *Flax* and *Hemp*, and by consequence a cheapness, whereby we may come so much nearer to the making of *Cloth*, by how much cheaper this *Flax* and *Hemp* will be, than what's Imported: But how this will please those whose Land is not fit for it, or who think they can put it to a better use, I won't say; but most men love to do what they will with their own, and as yet 'tis not done.

Others are for raising Stocks in all Countrys for the erecting publick Work-houses, and Engines for dispart in several Places, where the Poor shall be compel'd to come and learn a Trade, by which, when expert, a great many think (as things now stand) they'd hardly get their Bread by, and so when the publick Stock was spent, they'd knock off to some other Trade, or follow the lazy Art of begging, by which, with a freedom to walk where they list, they hope to make double Wages: and this Project hitherto don't take.

A third sort are for publick Schools almost every where, as they do abroad in *Germany*, where Children with some good Orders, shall be taught to spin, as here they are to read or knit, hoping that by an inurement of their hands to the distaff, almost from their Mothers Breast, they'll learn to be so expert and quick, that thereby they may live most bravely: But the Teachers are not yet found, and for want of Faith that it shall succeed, and good Markets, 'tis not begun; neither do our *Poor* think it good for their Children to work hard in their Youth.

A fourth sort think the *Irish* way of giving a Reward to her that yearly should make the best Piece of Cloth

Cloth, but I do not hear of any great feats this hath done in *Ireland*, only they never fear to have one or two to come for the Prize.

Fifthly, *Bristol* hath made a great attempt, and Mr. *Firmin* here at *London* hath done mighty things; he hath built a Work-house, bought *Wheels*, *Reeles*, &c. taught the Children and others gratis, brings them to Rules, and for their Incouragement, besides better Wages than the thing will bear, gives them a good part of their *Manufacture* back, when wove and whited, to make them *Sheets* and *Shirts*, besides *Money*, *Coles*, *Viſtuals*, and other good things, some of which you may see at large in his Book, an account whereof you may find in *Pag. 29* of these *Collections*, yet for all this and a great deal more, it wont do; and I have often told him it never shall, unless he can make it profitable, which he is unlike to do with *English Yarn* so long as *Forreign Yarn* is so cheaply Imported. I have heard him say he can buy as much of some sorts of *Forreign Yarn* for a shilling, as here he must pay for the spinning, although the *Flax* ready drest were given him.

Highly to be praised are all these Attempters, and much to be incouraged, who can tell? but that time may make a little of every ones Project useful, many hands make light work, and

Gutta cavat lapidem non vi, sed sepe cadendo.

Drops into Massy Stone do make their way,
Not by great Force, but by their oft Assay.

That this or some other may do, I heartily wish, and to push such a Considerable design forward, be pleas'd to accept my Sentiments.

I wish we may drive that nail which will go easiest, which I think will be by striving to make that sort of Cloth first that may be made cheaper than it can be brought in, which I humbly conceive, may be course *Linnens*; and I would have it made of Forreign *Yarn*, which *Yarn* I do have brought in as plentifully and cheap as possible, and to make it so, I would have all the *Duty* taken off, which *Duty* in the Book of Rates I find thus, *Viz.*

<i>Irish Yarn</i> the Pack cont. 400 weight,	2	1	5	0
at sixscore pound the Hundred	5	0	0	0
Raw <i>Linnen Yarn</i> , <i>Dutch</i> or <i>French</i>	0	1	0	0
the pound	0	1	0	0
<i>Sail Yarn</i> the pound	0	0	6	0
<i>Spruce</i> or <i>Muscovia Yarn</i> the hundred	2	13	4	0
weight, cont. 112 pound	2	13	4	0
<i>Scotch Yarn</i> the pound	0	1	0	0

Now one shilling in the pound of what is here set down must be paid, as you may see at large in an Act Anno XII. *Caroli Secundi Regis*, Entituled,

A Subsidy granted to the King, of Tonnage and Poundage, and other Summs of Money payable upon Merchandize, Exported and Imported. And in a paragraph of that Act, whose Margent saith, *Subsidy of Poundage by English and Aliens.*

Which makes

<i>Irish Yarn</i>	4	8	Cent
<i>Dutch and French</i> ,	5	7	
<i>Sail Yarn</i> ,	2	9	
<i>Spruce or Muscovia Yarn</i>	2	8	
<i>Scotch Yarn</i> ,	5	7	

Some Fractions allowed for, which one with another, is 4 s. 3 d. per hundred weight, which in *Yarn* of 12 d. the pound, is almost 4.

Of 10 d. the pound, is about ——— 4 ½
 Of 8 d. the pound is ——— 5 ¼
 Of 6 d. the pound is ——— 7 ½ per Cent.

By which means, with *Yarn* of twelve, ten, eight or six pence the pound, we shall be able to make *Linnen Cloth* cheaper than we could before with the same *Yarn* by so much in the hundred, as you see above; out of which, I must confess, must be abated such a Proportion in the hundred as the charge of weaving amounts to, which may be a third, fourth, fifth, or sixth part, according to the courseness or fineness, or price of Weaving, and it is possible by the Incouragement it may give to other Trades, as *Linssey-Woolsey*, *Fustians*, and such like, there may sometimes be a Glut of *Yarn*, and it be afforded five per Cent. cheaper from the Merchant.

If you shall Object,

That the Reasons for our taking off a Duty from Yarn here, whereby we may be the better enabled to make Cloth, will hold with Forreigners to lay the like Duty upon Yarn, that we might not make Cloth; and so instead of a Blessing, get a Curse.

I Answer, If we had our *Yarn* only from one Place, your Argument would hold; but seeing that we have it brought from *Russia*, the *Baltick*, *Hamburgh*, *Holland*, *Flanders*, *France*, *Ireland* and *Scotland*: It will be no boot for any one Place to lay a *Duty*, leaff it being so much dearer there, the other Places should run away with that part of their Trade.

I would also have the *Duty* upon *Course Linnen* be doubled, which *Duty* also in the Book of Rates I find thus, *Viz.*

Dutch

	b.	s.	d.	
Canvas voc.	Dutch Barras and Hessens Canvas the Hundred Ells cont. sixscore	3	10	0
	Packing Canvas, Guttings, and Spruce Canvas, the 100 Ells cont. sixscore	2	10	0
	Poledavies the Bolt, cont. 28 Ells	1	0	0
	Spruce, Elbing, or Quinsborough Canvas the Bolt cont. 28 Ells	0	15	0
	Working Canvas for Cushions narrow, the hundred Ells, cont. sixscore	3	0	0
	Working Canvas broad, the hundred Ells cont. sixscore	5	0	0
	Working Canvas of the broadest sort, the hundred Ells cont. sixscore	6	0	0
	Drilling & Pack Duck the hundred Ells cont. sixscore	2	0	0
	Hinderlands, Middlegood, Headlake & Muscovia Linnen, narrow, the hundred Ells, cont. sixscore	2	13	4
	Irish Cloth, the 100 Ells cont. sixscore	2	0	0
Linnen Cloth, or Lockrams voc.	Treager, grest and narrow, or common Dowlas, the Piece containing one hundred and six Ells	5	0	0
	Broad Dowlas, the Piece containing an hundred and six Ells	5	0	0
	Minsters, the Roll cont. 1500 Ells, at sixscore to the Hundred	5	6	13 4
	Ozenbriggs, the Roll cont. 1500 Ells, at sixscore to the Hundred	6	0	0
Southwich, the Hundred Ells cont. sixscore	4	0	0	

Polo-

Linnen voc.	Polonia, Ulsters, Hainovers, Lubek, narrow Siletia, narrow Westphalia, narrow Harford, plain Napkening, and all other narrow Cloth of High-Dutchland, and the East-Country, White or Brown, not otherwise rated, the Hundred Ells, cont. sixscore	4	0	0
	Twill & Ticking of Scotland, the Hundred Ells, cont. sixscore	3	0	0

All Linnen shall pay one full moyety over and above what is before Rated; for Payment of which Moyety, a years time is allowed, or Ten per Cent. for ready Money, with Re-payment, if Exported.

All these that are sixscore Ells to the Hundred one with an other, with the additional Moyety, pay about 6 s. 4 d. the Hundred Ells, a little more than half-penny half-farthing the Ell.

Those reckoned by 28 Ells one with another, and both Dutys, are three farthings the Ell.

Those reckoned by 106 Ells, both Dutys, make a little more than a penny the Ell.

And those reckoned by Rolls, much about the same Price.

Now the present whole Duty of all these sorts of Linnen one with another, amount not to much more than three farthings the Ell; which Summe, if it were doubled, according to my Proposal, it would make Linnen of three pence the Ell, almost 25 per Cent. dearer; of six pence per Ell, above twelve per Cent. and of twelve pence the Ell, at least six per Cent. dearer; which dearness upon Linnen, and cheapness upon Yarn, inables us, without the help of Accidental Markets, to make this sort of Cloth a great deal per Cent. cheaper than we could before, which cheapness

I strongly perswade my self, would more than turn the Scale. At this rate *Weavers* would come from abroad, and one under work another, Engines would be found for Dispatch: I have seen an Engine to wind eight Skeins of *Silk* at a time, and it may do eight score with a small labour, and *Linnen-Yarn* may be done as easily.

I speak here of course *Linnen*, to obviate an *Objection* that would be made against the same Argument, had it been used for fine *Linnen*, VIZ. *That double the Custome upon Fine, would make hardly any be paid, for then 'twould be worth while for the Merchant to steal (or as the word is) To save Custome: which is all one.* But I suppose this Course *Linnen*, notwithstanding its double Duty, will be so bulkey, and the profit of *running*, so small, that 'twill not be worth while to unpack, be put to the Shifts, run the Hazard and Charge which such Folk are used to in the Art of Smugling.

For that *Linnen* where an Ell weighs a pound, the Old and New Duty would not amount but to about ten shillings and six pence the Hundred weight and to Cloth of half the weight, double the Price, but Course *Linnen* is so bulkey, that the charge of running it, will take off a great deal of the Profit, and whether the Hazard of loosing the whole, and of the Merchants Reputation, be not of greater value than the rest of the profit, I leave it to others to determine: but if it be not? I wonder all the *Linnen* of greater Duty and less Bulk be not sav'd, which it is not.

I suppose what will pay double, or the Excise of them that make it here, will recompence his Majesty for the loss of his Duty upon *Yarn*.

If

If by some such meanes as this, we should very much increase our *Course-Weavers*, some Spirits would be pushing forwarder than their Neighbours, and every now and then for their credit, make a fine Piece, and some good *Spinsters* also (here being a Trade) would be ambitious of having a pair of *Sheets* wove by their own *Loves*, with *Yarn* of their own Spinning, and sometimes have half *English*, and half *Forreign Yarn*, mixt together; as also Spin our own *Flax* and *Hemp*; so that by degrees we may come to procure at home all things necessary to this *Manufacture*.

This is the effect of my Thoughts, but supposing my Argument undenyable, yet one thing is still wanting, which is an *Act* for putting it in execution, which for my Country's good, I must beg you to desire every Body whom you shall discourse with about this affair, to further it as much as they can; and I hope if material *Objections* cannot be made against it, it will find in due time some Parliament-Man, that will prefer a Bill for it, till when we must have Patience.

S I R, It's probable you may think this to be more fit at a time when the Parliament is just meeting, but I think it better now, because I wish that every one that hopes to be a Parliament-man, will consider it well afore-hand; which if they like they may easily revise then.

My very good Friend, the Industrious Mr. *John Collins*, hath written for *Cordage, Cables and Canvas*, much like this, in Page 27. 28. of his Book Entituled, *A Plea for the bringing in of Irish Cattle, &c.* To which I Recommend you.

Q A far-

A farther Account from the Ingenious Mr. Adam Martindale of Cheshire, about Improving Land by Marle.

Worthy S I R,

IT is now so long since I received your very obliging Letter and Printed Papers, that together with my hearty acknowledgments of your Kindness, I am ingaged to return the following true (though poor) Apology, for not making them sooner, being loath to give you the trouble of reading a Letter of more Thanks, or a lame Account of what I formerly promised. I made use of my Interest in a Friend of great Judgment and Experience in these Things (Mr. Peter Fearnhead) who chearfully professed his willingness to communicate his Notions: but being a man of much business, it was so long before he could accomodate me, that I received not his Paper till the last Munday in the Evening. I shall not transcribe it endways, because of its length and coincidence in many things (and Cantradiction or Disagreement in nothing) with what I formerly write touching the kinds of Land, and incredible Profit that some have got by Marling; but together with my own Observations, briefly give you his Sentiments concerning the three remaining things promised, Viz. 1. The kinds of Marle we make use of.
 2. The way of furnishing our Ground with it
 3. The Method of Plowing and Sowing it afterwards.
 r. For the kinds of Marle, we have these five sorts, and no more that I know.

1. Corn

1. Cowshut-Marle (so called, as I suppose, for its resemblance in colour to Stock-doves, or Queoca, which the Vulgar in this Country call Cowshuts) being of a brownish colour, bespangled with blew veins, and little lumps of Lime.

2. Stone-Marle, or Shale-Marle, being to see to, nothing but perfect Stones of soft grit, for colour, blew, red, or mixed; but these seeming Stones are in Winter Seasons, by dryness, perfectly dissolved. Of this sort of Marle, I have often heard it said, that it will give Corn upon any Land by its own natural Fertility, so as that there needeth nothing but room to lay it on, and depth of its self to plow in: yea, I have seen Land set with this sort of Marle, and sown with Pease, without Plowing the first Year, but I have had no Experience of it myself, though I have store of it in my Fields.

3. Peat-Marle, or Delving-Marle, which is close, strong, and very fat or unctuous, and ordinarily digged up with Spades, or rather Shovels, and filled into the Carts with short Pitchforks made of purpose, with Cuspes like Spades.

4. Clay Marle, resembling it in colour, and in my Opinion, being of great affinity to Clay; for the most sort of this Marle differs little from perfect Clay, as many have found by dear Experience: and the best sort of Clay differs little from this Marle, as I believe, being induced thereto by the Testimony of Credible Persons for Skill and Integrity, that in Darby-Town-Field, the Plow frequently when it goes deeper than ordinary, brings up of this sort of Marle, which yet the People take for nothing but Fresh-Clay, and in a short time it is mixt with the Clay-Land, to its great

Q 2

advantage. This sort of *Marle* is oft mixt with little Stones, making it hard to get.

5. *Steel-Marle* in the bottom of some Pits, which of it self is apt to break into little Bodies almost Cubical, like Stones or *Cannoll*. Thus much for the first Head.

Secondly, The next General Head touching the way of *Marling*, contains in it the following Particulars, *Viz.*

1. Something for *Marle*, 1. Where it lyes.
2. How far the top of it is from the Surface of the Earth, And
3. What thickness or depth in its self.

Clay-Land usually abounds with it, especially of the first and second kinds, and cannot spare it to Neighbouring Land, that is more proper for it than it self, which is least capable of Improvement by it. *Low Black Land* also is frequently most stored with one, or both of the two former sorts; in these therefore the search is more easie: But *Sandy Land*, that needs most, usually hath the least in it; yet sometimes it hath a competent store of the third or fourth sort in, or near to it, but oftentimes it lies deep within the Earth, and sometimes not so deep in it self when we come to it, as the two former sorts: for whereas they ordinarily lye within a yard of the Surface of the Earth, or thereabouts (more or less) and the first sort is often three or four yards thick of the Clod, sometimes more (and the deeper, the stronger) and the second sort five or six yards; those latter sorts (of my Knowledge) are oft two yards, or two yards and a half within ground, before we come to them, especially the third sort, and sometimes prove but ebb of the Clod neither. Here therefore is the greatest care to be

be used by the Searcher, who making use of his own natural Sagacity and Experience, observing where it hath been formerly met with, and how the vein is like to go, digs holes, and bores with his Auger, and by examining every bit full as it comes up, he is able to make a good rational Judgment how deep it is both to it, and through it.

2. Preparing the Pit, which consists of taking away the *Earth, Gravel* or *Clay*, that is upon the head of the Clod of *Marle*, for which purpose, Labourers make use of *Pixes, Spades, Shovels, Wheelbarrows*, (and sometimes *Carts*, if the Pit be broad) and *shooting the pace*, that is, making a broad way of a very easie ascent and descent, which by *Wood, Gravel, Sand*, and such like helps, is to be kept in as good a Condition as is possible, for the convenience of fetching out the *Marle*: the former of these Works is called usually, *Feying the Marle*: and that which is to be removed, is by a general Name called, *Feigh*: The latter, as I stiled it, *Shooting the pace*.

3, Preparing the Ground (which is supposed to have rested several years (the more the better) before it be *Marled*) and the wayes to it, by stocking up *Plants* and *Bushes*, paring down *Hillocks*, filling up *Holes*, &c.

4. Getting out the *Marle* from the Pit to the Field, which is to be done by *Workmen* and *Cartes*. First, the *Workmen* must be alwayes four *Fillers*, and so many *Howers* as will get them Work enough ready for filling which are ordinarily 3, but sometimes 4, 5 or 6, especially in some kinds of *Clay-Marle*; and in *Peate-Marle* in stead of *Howers*, there must be *Diggers* (or as they are usually called) *Delvers*, so many as will suffice. These sorts of *Work-men* have usually 14 d. per diem, find

finding themselves all Necessaries. Besides these there must be a *Setter* in the *Field*, whose Office is to appoint where every Load is to be poured down, and to assist in it. But if the *Marle* be to be spread as it comes forth, they must be at least two to Set and Spread; there Wages being about 12d. *per diem*; but if the spreading be deferred till *Winter* following (as heretofore was usual) one man at 8d. *per diem*, might suffice very well. Some sorts of *Marle* requires also a *Carrier* of Water to soften it for the Workmens *Shovels*; and if there be *Springs*, as there be too often, especially in the second sort, that need *Lading* or *Pumping*, that Work must of necessity be done, whatsoever it cost; and in this especially lyes the danger of a mans being taken much out of his Aim in the Computation of the Charges before hand, being very hard, if not impossible to guess what assistance he may need, and at what Rates he can procure them in a strait.

2. The *Carts* for their Dimensions within, are about four Feet and 10 Inches long, two Feet, and two or three Inches wide, and fourteen Inches deep, contrived with convenience to *give* (as they call it) that is, pour out the Load backward with great ease and expedition. Their ordinary sized Horses will draw one of these Carts well filled, but they usually have four, that (by turns) one may still rest in the grass while three work. The Wages formerly were 24 s. *per week*, when the Owner of the Teams finds the Grass, but now they have only 20 s. *per week*: and if the Master of the Work find the Grass, there was (and still is) 8 s. *per week*, abated for that, and for the *Driver*, he is ever accomodated at the Charge of the Owner of the Team.

The number of *Carts* must be proportioned to the distances that the *Marle* may be carried; neither too many (to trouble one another, and increase the Charge needlessly) nor too few, that the Workmen in the Pit stand idle. About eight or nine Roods (of eight yards to the Rood) is a convenient distance between *Cart* and *Cart*, as they are going from the Pit to the Heaps, and so back again. If things be well managed, four Fillers will send forth 300 Loads a day fairly filled, and at that rate, in five days, a large *Cheshire-Acre* of eight yards to the *Road* or *Pole*, which is about two and a ninth part *Statute-Acres*, will be tollerably well set over

over; but some bestow half a days work more on it, especially if the ground be loose, for one main end of *Marling*, is to make Land more solid, that it may be the less apt to wood, and fitter for *Barley*. If one of these large *Acres* can be *Marled* for 12 l. 'tis accounted pretty well, and not very much amiss, if the *Land* and *Marle* be good, and well suited, though it cost 15 l. *yea*, in some cases it may cost near 20 l. and be sufficiently advantagious, though that is a very great Rate, being double (if not treble) to what it costs some others, who have the *Marle* near, and are not troubled with Water, nor incommodated with Accidents. Besides, the Strength or Weakness of the *Marle* may diminish or increase the Cost; because if the *Marle* be considerably stronger, much less may suffice, than of a weaker sort.

In some Places of *Lancashire* they have used (and possibly may still use) a sort of single *Carts* called *Tombrells*, whereof each is drawn by one Horse: in other Places, and particularly in these Parts, they used double *Carts*, drawn by two Horses a piece. But now we generally employ such tripple *Carts* as I before described (which by Experience are found the best, both in regard of dispatch, and contracting the number of *Drivers*, and by spreading the *Marle* as we go on, we can best hit it for thickness.

3. But the great business is yet behind, *Viz.* How a man must now order his *Land*, so as it may be abundantly responsible to him for all this Cost: It is our practice to sow it the 1st. year with *Pease* or *Oats* upon one Furrow, then three years together with *Barley* upon three Furrows (or thrice Plowing) yearly; after these years (wherein we expect our greatest profit) we use to Sow it with *Pease*, (or *Beans*, if the ground be not over dry for them) and sometimes *Oats* for one year, and *Barley* another, by turns; or if it grow weedy or grassie, we sometimes Fallow or Summer-work it. And by this meanes, if the *Ground* and *Marle* be both good and well suited to one another) the *Husbandman* may Till on for 20 or 30 years together, if not longer. But he must to this purpose have a special care for a many of the first years, that he Plows not to deep, *viz.* not above an Inch of Soyl, that he may neither spend his Soyl, nor bury his *Marle*: and then he will have this advantage into the Bargain, that the Tillage will

will be easie; and if God be pleas'd to afford reasonable Weather, that the Land may be dry, when it is Plow'd and Sown, it is still more hopeful.

Some, when the strength of *Marle* is worn out by long Tillage, strengthen it with a new Supply, but then they ordinarily set it thin (which they call *Skittering*) and their hope ought to be answerably moderate, for the great Improvement is at the first.

SIR, I have also to add, Whereas in Number *Six* of your *Collections*, there is a Letter of mine, wherein, *inter alia*, I express my wonder, that there is so great a neglect in *Staffordshire* and *Worcestershire* in searching for *Marle*, &c. as appears, pag. 56 and 59, Lest any one should by mistake, extend the meaning of my words beyond their true Importance, I do hereby declare, That the Scope of them is not to determine how much or little *Land* is *Improved* that way, nor what some few individual persons unknown to me, have done by searching (as well as their skill serves) much less to assert, that there is no *Marling* at all in those two Counties (especially *Staffordshire*) for I acknowledge that in several Places (particularly near *Sand* and *Heywood*, by the side of *London-Road*) *Marle* offereth it self so fairly to the view, that some have been tempted to make a little use of it of late. And possibly more than I have yet heard of. But the plain sense is, that though there be abundance of *Land* in these Counties very proper for *Marle*, and great hopes of finding *Marle* enough in some Places, within due compass, by skilful and diligent Search, but not by every Country Labourer. I could never prevail with one, by all the Arguments from Experience and probable Advantage that I could use, to make any significant Search: whereas the like hopes in our County (especially such as appeared in one place by a Brook-side, some three miles from *Lichfield*) would have encouraged a good Husband to search, as for hidden Treasure.

SIR, This is all that at present I can from my own Observation and Experience, together with my Friends Assistance, accomodate you with: But if any thing further come to mind worth your notice, you may expect it from

Your Friend and Servant,
Adam Martindale.

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A
COLLECTION
OF
LETTERS

For the Improvement of
Husbandry & Trade.

TUESDAY, January 16. 1682.

The Contents.

An Account of Bread, from the Learned John Evelyn, Esquire; Entituled, Panificium, or the several manners of making Bread in France. Where, by universal consent, the best Bread in the World is eaten.
An Account from the ingenious Mr. John Worlidge, of Petersfeild in Hampshire, of a great Improvement of Land by Parsley. *An Account of a Book, Entituled, Corporation-Credit, &c.*

An Account of Bread from the Learned John Evelyn, Esquire, Entituled, Panificium, &c.

TO make excellent *Bread*, not only good *Corn* is preferable to ill, but the goodness of the *Mill, Water, Oven, and Making* ought to be considered.

R

For

For the *Corn*, the fullest and weightiest is the best: the *Bread* which is made of any other Grain than *Wheat*, be it *Rye*, *Barley*, *Oats*, *Pease*, or *Vetches*, (with which the poor sort make or mingle their *Bread*) is not to be accounted.

That *Wheat* which grows in light, not fat ground, whose *Stalk* is big and strong, makes ever the best *Bread*.

New *Corn* to be preferred for *Bread*, as better in colour, crimp, and pleasant in taste, but it yields more *Bran* than the old, which by often stirring, wears husky, and falls away to dust; it's not important whether it be ground in a *Wind* or *Water-Mill*, To it be ground quick and speedily; that motion bruising the *Corn* better than a more languid, &c. and with less *Bran*.

A *Mill* newly repaired, provided there hath passed some *Corn* through it before, will perform better than where the *Stones* are worn.

Grind as much in a well prepared *Mill* at a time, as may serve your Family a month, because it will yield you a greater quantity of *Flower*, than when otherwise it comes new from the *Mill*, being careful to keep it well covered in *Binns*, which preserves it both from the *Air* and *Vermine*. In the *Summer* reserve it where it may be kept cool, as in some *Cellar* or lower *Room*, great heats being apt to produce the *Nightingale-maggot*, which turns to a black-winged *Insect*, that feeds upon, and corrupts the *Flower*.

Water is so principal an *Ingredient* to the making of *Bread*, that the goodness of that much improves it: This is very evident in *Paris*, where that *Bread* which is made in imitation of that of *Gonness*, though by the same *Bakers*, and with the same *Corn*, never succeeds either

either as to the colour or goodness, equal to that which is made upon the Place it self: This is wholly imputed to the excellency of the *Water*.

That *Water* is esteemed best which is lightest, or you may make a good experiment by tryals with several *Waters*; as that of the *River*, *Fountain*, *Well*, or *Ruin*, the relish will easily recommend you the best.

Build your *Oven* with the thickest sort of *Brick*, and work it well in the joints, let the *Roof* be low, the mouth narrow, the outside closely plastered, the bottom or *Hearth*, which is made of a loamy *Clay*, is much to be preferred before *Fire-Stone* or *Brick-Tyle*.

It will require a gradual heating, which better penetrates the sides than a quick fire, and is better dispersed; cleft *Billet* is better than *Bavin*, because of the less quantity of *Ashes*, which ought continually to be taken away, that the *Embers* and *Coals* may heat the *Hearth* well.

Household-Bread.

The more the quantity of *Wheat*, the better, yet it is a good sort of *Bread* for *Servants*, which is made of four parts of coarse *Corn*, and one of *Barley*; this is a competent proportion for one *Batch*. Searce it through the coarse *Sieve*.

Of this take a *Bushel* about ten a clock at night, and put leaven into it with some of the same *Meal*.

To temper it in *Winter*, make the *Water* as hot as you can indure it with your hand; in *Summer* it is sufficient to be *Luke-warm*, and so proportionably in the *Spring* and *Autumn*.

The next morning early, leaven the rest of your *Meal*, tempering and kneading it a very long time, till it be very stiff, for though the *Softer*, more *Light*, or more *Bulkey* it appear, yet it will be less lasting, the light *Bread* goes faster away than that which is wrought close.

This *Past* well kneaded, you shall turn it in the Trough, laying the bottom upmost, then thrust your Fitt to the very bottom of the Trough in two or three Places, then cover it well with *Meal-Sacks* and clean *Blankets*.

Having let it stand thus a while (longer in *Winter* than *Summer*) and that you find those holes closed, or swelled up, the rising is perfect.

Therefore now let some body be heating of the *Oven* (for 'tis impossible one Person should tend both) whilst you cut the *Mafs* in pieces, the Pieces may be of sixteen pound weight each, or somewhat more: then mould and form it into Loaves, which lay on a clean Table-Cloth, so as a Fold of the Linnen may part and keep them from inter-touching.

Your *Oven* hot (known by raking the end of a stick against its Roof or Hearth, if the Sparkles rise plentifully) make it very clean, reserving only a few *Coals* near the mouth, wipe it with a *Mapp* wet, and wrung; then close it up a while to allay the heat and dust, which will endanger scorching, and when the fiery colour is a little abated, set in your Loaves as fast and quick as possible (ranging the biggest towards the upper end) round about, and filling the middle space last of all.

He that heats the *Oven*, must be careful that he burn his wood in every part alike, kindling it sometimes at one side, sometimes at the other, and continually

nually scraping away the Ashes with his *Pon*.

The *Bread* put in, stop the mouth well with the Plate Door, and the edges of it with wet Cloths, to keep in the heat; four hours time is sufficient for large *Bread*, but you may draw a *Loaf* to see if it be enough, which you shall know by knocking against the bottom with your knuckles, if it sound and be hard? draw the rest: if not? let them stand a while longer, experience is soon learned; but if you leave your *Bread* too long? it will make it red within, and of ill relish.

Your Batch drawn, place it on that side it is most baked.

Let your *Bread* be cold before you lock it up, and then set it sideways, that the Air may equally flow about it. In the *Summer* time, your Binns set in the Cellar, will preserve your *Bread* from mouldiness, better than elsewhere.

Those *Loaves* which are least baked, and worst made, should be first eaten, for the most baked, relent with standing.

It is a profitable Oeconomy, to have ever a Batch of stale *Bread*, when you go to make new.

The sorts of French Bread.

Pain Bourgeois, or *City-Bread*.

Take the sixth part of what you intend to make, and put *Leaven* into it, making a hole in the *Dough*, as you were directed, when the *Mafs* is risen, cover it with as much more *Flower* as what there was at first, and leave it to rise again; this ready, add to it the residue of the *Flower*, tempering it with *Water*, kneading and

and allowing it time to rise in every particular, governing the rest as hath already been described.

NOTE.

- 1. The best *Wheat-Flower* makes the best *Bread*.
- 2. The newer also the *Bread* is, the better.
- 3. The whiter the *Flower*, the less goodness in taste.
- 4. The closer it is wrought, so it be not heavy, the more hearty and nourishing.

Some make *Bread* (as about *Rouen* in *Normandy*) without at all sifting the *Bran*, as it comes from the *Mill*; this at first eating, seems to be rough and harsh, but by custome it is both pleasant, wholesome, and very strengthing.

Pain De Gonneffe.

The Best *Bread* of *France*.

There is of this both *White* and *Brown*, and of all sizes: Take six Bushels of *Flour*, or what lesser quantity you please, which put *Leaven* to a sixth part at eight a clock at night, then add as much more *Flower* to it; this is called, *refreshing the Leaven*; the next morning early make your *Dough* with the remainder of the *Meal*, but temper it moderately, or very little, then turn the *Dough*, and put it in a *Wooden-Bowl*, sprinkle it with *Flower* to keep it from sticking, and when 'tis ready to set in the *Oven*, you shall turn it into an other *Bowle*, that when 'tis set into the *Oven* with the *Peel*, the right side may stand upmost.

The small light *Bread* is made by taking the sixth part of the *Meal*, and instead of the *Leaven*, set it to rise with new *Yeast*, and when it is swelled sufficiently, wet it again, or work it with another sixth part of the *Meal*, and so let it rise for a second time, then temper it a very little, turn it, and lay the *Loaves* on a Cloth

Cloth, with Folds (as hath been directed) to keep them from touching, and so bake them.

Pain ala Moutre.

Take a Bushel of the whitest *Meal*, a fourth part to ferment, with half a pint of new *Yest* (if it be stale, less will serve) a small handful of *Salt* dissolved in warm *Water*, and three quarts of *Milk*; an hour after add the rest of the *Flower*, which you shall temper but slightly, then turn the *Past*, and let it rise in small *Wooden Dishes*, then set it into the *Oven*: an hour is sufficient. When drawn, let them cool edgeways.

Of this sort of *Bread*, and that of *Gonneffe*, is made *Bisquets*, cutting it in halves, and taking out the *Crumb*, and so set into the *Oven*, but first it must be sprinkled with *Aqua-vita*, some add to it *Fennel-Seed* beaten and scattered into the *Dough*, and *Aqua-vita*, as you temper it. This is an excellent *Bisquet* to be sopp'd in *Muscadel Wine*, *Canary*, or what *Wine* you please.

Pain D'Esprit.

This is made of the finest *Flour*, and tempered like the

Pain D'Chapitre.

Which is made in the same manner with the *Pain Bourgeois*, which we have already described; only it must be very close kneaded, and wrought a good while; there are some *Bakers* who put this *Dough* under the *Kneader*; of this *Past* are made the high *Coped Loaves*, and some that are cut in halves, and other forms: but it is only for the very meaner sort.

Pain

Pain D'Gentilly.
This is made like *Pain ala Mountron*, excepting only the adding a little *Sweet-Butter* to it.

Pain D'Citroville.
Parboil the Pulpy part of a *Pompion*, as you would do it to fry, then strain it through a course Cloth, from the strings, then add of the Water it boyled in, as much as is requisite to temper the *Dough*, which you are to order in all other respects, as in the former Receipts, with two *Leavens*. It is an excellent sort of *Bread*, especially for such as desire cooling, being good to loosen the *Belly*: It is somewhat of a yellow-er colour than other *Bread*, and a little fatter.

Pain Benit O Brioche.
Take a Bushel of the finest *Wheat-Flower*, of which mix a quarter with *Leaven*, *Yest*, and *hot Water*, let this rise in a *Tray* or *Bowl*, first warmed, and well covered, if it be in *Winter*: whilst this is set to rise, take the three other parts of your *Flower*, and temper them with Water as hot as your hand can suffer, and put in a quarter of a pound of *Salt*, a pound of *Fresh Butter*, and a new *Fresh Curd Cheese*, two hours after, mix these with the *Leavened Dough*, and work them together; then lay it together to rise again in the *Tray*, knead it again on a *Table*, spreading and working it exceedingly; then make it up upon a large *Peel*, and let it stand a while: When 'tis ready to set into the *Oven* (but first varnish it over with an *Egg*) stop and govern the heat as for other *Bread*.

When

When the Batch is ready to draw, set it on a *Peel* or *Wicker-Hurdle*, to keep it from breaking, because it is exceeding brittle.

The *Varnish* is made with the *Yolk* of *Fresh Eggs*, beaten without *Water*; some to spare cost, add *Honey*, but that obliges you to slacken the *Oven*.

Pain D' Cousin.

This is an excellent sort, you must of a Bushel of *Flower*, take but half a Peck for the *Leaven*, and the rest of the *Past*, temper it with three pound of *Butter*, two *Fresh-Curd Cheeses*, and a dozen of *Fresh Eggs*; if the *Past* be too stiff, correct it with *Milk*, but make your *Leaven* at twice, and work as before.

If you will proceed with exactness in these *Receipts*, till you have the Address, make several Tryals; that is, put a piece at first into the *Oven*, and if on tasting, you find any thing amiss, correct it according to discretion.

1. NOTE.

That all *Stale Bread* set a new into the *Oven*, will much recover it, and if it be eaten immediately, little different from what is new made; but if kept, and set in a third time, it will not be tolerable.

2. NOTE.

The *Ferment* of *Cherry-Wine*, makes an excellent *Yest* for *Bread*.

Some good *English* Houfwives, may be consulted, for the best of *English Bread*, *Bisquets* and *Cakes*: And it were to be desired, that we had a perfect description of *Dr. Kepler's* new *Oven*, *Stationary* and *Portable*, which, both my Lord *Brereton* and *Mr. Boyle* have had experience of.

S

Also

Also,
That we had descriptions of the best ways of Brewing Beer and Ale.

J. Evelyn.

An Account from the ingenious Mr. John Worlidge of Petersfield in Hampshire, of a great Improvement of Land by Parsley.

S I R,

ALTHOUGH the time hath been long since your great Obligations were enough to have exacted from me a more ready compliance with your request, yet is my tedious, though small Employment in the Affairs of the World no unreasonable excuse; however, that shall no longer render me ungrateful, nor prevent me from casting in my Mite amongst the Treasures of Observations and Experiments that you have collected: for as the Motto of the Society (whereof you are a Member) is, NULLIUS IN VERBA. So that small Addition I shall make to your great Collection, shall be such, that may probably have more in it than Words only. Which I shall willingly contribute as my occasions will permit.

I observe amongst the Enquiries concerning Meadows, mentioned in Pag. 9. of your Collections, you desire to be informed, what kind of Grass is best for Sheep, Cows, &c. In Answer to which, I only give you the Relation I had from several ingenious men; That a Person living near Portsmouth, having some Lands in his hands that were very apt for Corn, sowed several Acres of it with Parsley-seed, which thrived exceeding well; and that he fed his Sheep on it to his great Advantage.

It is observed, that some sort of Grasses do alter the Taste of Mutton, and that the sweetest Mutton is that which hath been fed on the finest and sweetest Grasses, as is experienced on the Peak in Derbyshire, and on the Plains, in Wiltshire, Hampshire, &c. And on the contrary, the coarsest Mutton is produced from the grossest Meadows, Marshes, &c. And Sheep fatted on Clover, and the like rich nourishment, are not so delicate Meat as the Heath-Croppers; which latter rich way of fattening Sheep, is most advantageous to the Husbandman, but doth not humour the Pallat of the Eater so well as such Beasts that can live on the driest Mountains without Water; for it begets too great and sudden a Change in the Meat. The like difference is also observed in Coneys.

Sheep fatten very well on Turneps, which prove an excellent Nourishment for them in hard Winters, when Fodder is scarce, for they will not only eat the Greens, but feed on the Roots in the Ground, and scoop them hollow even to the very skin; the Turnep is of a hotter nature than Clover-Grass, and therefore more agreeable to those Cattle.

But much more hot and drying is Parsley, even in both, to the second degree: and were it thoroughly experimented, doubtless will prove very good nourishment, and not subject those dry Animals to the Rot, nor vitiate the taste of their Flesh so much as the other colder Food will do.

The Rot being a Disease occasioned by the Sheep feeding on too much cold and moist Meat, and is prevented by hot and dry: As their feeding in shady Places in some Grounds where the Dew lyeth long on a certain broad Grass, naturally inclineth all Sheep feeding there to the Rot, and by such that have to

their Cost made experiment thereof, such Lands are otherwise employed: when on the contrary, feeding Sheep on Salt Marshes and Brackish Grounds, preventeth the Rot, and the giving them Salt with their dry Meat, is esteemed a Cure of that Disease.

Therefore Parsley (being of such a Hot, Dry, Saline and Anti-Hydriopical a nature, and as my Relators assure me) so much desired by Sheep (as I am sure it is of Conies, much of the nature of Sheep in respect of their Feeding) may very probably be, not only a very good Security against the Rot, but may render the Meat rather better tasted than any other Food whatsoever.

And it is a Plant very easily propagated, and the Seed plentifully obtained, few Plants yielding more, and that also easily separated from its Stalks: the Ground, the finer it is dressed, the better will the Parsley sown therein grow and prosper, and it will continue more than one Year; but how many, a careful Improver will quickly discover, and of what particular Uses and Advantages this piece of Husbandry may prove (besides the general way of feeding Sheep) an ingenious Husbandman will soon find out.

However (amongst others) it answers one Objection against Inclosures, viz. That inclosing of Lands will prove a decay of our Flocks of Sheep, and so by consequence, of Wool. To which I answer, if that two or three hundred Sheep must have five, six, or seven hundred Acres of open Down Land to depasture on, according to the present use and custome. In case so much thereof be enclosed as lyeth convenient for Enclosure (it may be half thereof, or more) and part of such enclosed Land be sown with Clover, Turnips, Coleseed, Parsley, or the like, and that ten Acres so

Huf.

Husbandry'd will feed as many Sheep as one hundred Acres thereof would before have done; the question then will be, Whether the Husbandman may not keep as great a Flock as he did before, and have variety of Pasture for them, as the Season of the Year requireth? And that either for Feeding, Fattening, or medicinally preserving them, as he pleaseth.

For it is not to be doubted, but that Land Enclos'd and Till'd, yieldeth a far greater Increase to the Husbandman than Lands Open and Untill'd; then in case he can propagate such Vegetables that will feed and maintain his Flock in his Enclosures, surely on such Enclosures he may maintain a far greater number of Sheep than before he could on the Open and Untill'd Champion, or at least as great a number, and have a very fair Encrease of Tillage over and above.

My Sentiments of the great effect that this piece of Husbandry, or the like may have as to the Improvement of Trade, you may receive another time, if they may be acceptable from

Yours to serve you

John Worlidge.

An Account of a Book Entituled, Corporation Credit, &c. and of the Bank it self.

I Conceive it very proper to my intention of endeavouring the Advance of Trade, to give a short account of the Bank of Credit that is now Establishing, which is the Subject of the Book: and take it, if you please, as communicated to me in a Letter from my worthy Friend Mr. O. S.

S I R,

SIR, To perform my Promise, I will now give you some account of the *Bank of Credit*, such as I at present can, after having made as strict Enquiries into all the Parts of it as possibly I could. And I must tell you Sir, that this Design is laid upon so firm and solid grounds, that if well pursued, nothing perhaps can ever prove more serviceable to all the ends of *Trade*: so far as *Ease*, *Security*, *Gain*, and the prevention of *Litigious Contests*, are things to be valued in Commerce. The Design was proposed to the City, and after many Examinations and upon mature Advice, it passed with the Approbation of the *Lord Mayor*, *Court of Aldermen*, and *Common Council*, as an Undertaking highly conducing to the general Good, and extending its Influence to every particular Persons private Benefit. The manner is thus; He that will raise a *Credit* in this *Bank*, brings in a *Fund* of any kind of *Goods* or *Wares*, which *Goods* being Appraised, the Party immediately receives a *Credit* according to the value set. A time is limited for Redemption, and 6 *l. per Cent.* only paid for the *Credit*, *Ware-house-Room*, *Salvage*, *Book-keeping*, and all Charges. This *Credit* is as useful as *Money*, and much more safe, easie and convenient; and is in its own nature a necessary advance to *Trade*. The Goods thus deposited, may not exceed the time limited for Redemption, without coming to a new Appraisalment, and paying of the *Bank*: but may be sold at any time before; and shall only pay to the week they are delivered out. As to the safety of it, the constitution of the *Bank* is such, that it is lyable to the continual Inspection of the *Common-Council*, or Persons by them deputed; Every Person employed gives great Security for his Fidelity; and there are

so

so many *Checks* upon the several *Offices*, that it is not possible for any Fraud to be committed without an immediate discovery: For the *Fund* being *Goods*, and not *Money*, cannot be taken away, not by Day, for then the *Bank* is open, and nothing can be done but in the view of the World; very hardly by Night, for a strict watch will be kept, and if any thing should be, the *Bank* obliges it self to satisfy the Owner, and indemnifies it self by the Security of the Party offending. I am straitned in time, and therefore cannot enlarge upon any, but shall name some very few of the many conveniences that will certainly attend this Undertaking. It will add an equivalent to so much ready *Money* to the Stock of the Nation, as there shall be *Credit* raised. This will of necessity quicken *Trade*, and increase *Expence* and *Consumption*. It will find employment for all the Poor. Men will be furnished at low Rates, to support their *Credit*, manage their *Trades*, and to take the advantage of the Market. The very *Bank* it self will be a continual *Mart*, and a mighty Increase of *Trade* by occasions arising even within it self. A design of such general Use and Advantage, that hath past the Test, and has the countenance and concurrence of so many wise and eminent Men as compose the Government of this City, will sure meet with a suitable reception from all prudent and considering Men. And after what I have said, Sir, which is all demonstrable, I doubt not but you will concur in Opinion with me, That the generous and publick Spirited man, and the cautious interested Person, are both equally concerned to wish well to this Undertaking, which answers both their Ends. The Undertakers have answered all *Objections* made against it: and it only remains now to per-

per-

142 **HUSBANDRY**
perfect their Subscriptions, in which it is said, there
is a considerable Progress made. Sir, I am

Your most Affectionate

Friend and Servant,

O. S.

The Philosophical Transacti-
ons will be reviv'd and publish-
ed Monthly.

To be sold by Henry Hunt, Ope-
rator to the Royal-Society at their
Repository in Gresham-Colledge.

London.

The Author hereof sells by the pound, Cho-
colate of several sorts, so good, that he thinks
none sells better. And designs to carry on these
Collections in one, two, or three Sheets at a
time, about once a Month. There are sixteen
Sheets already Published.

London, Printed by J. Gain, for the Author John Houghton, and is to be
Sold at his House, against the Ship-Tavern in St. Bartholomew-Lane, behind
the Royal Exchange: By John Lawrence, at the Angel in Cornhill: By
Moses Pitt at the Angel in St. Pauls Church-Yard: By William Cadman, at
the Popes-head in the New-Exchange, and several other Booksellers, 1682.

A
**COLLECTION
OF
LETTERS**

For the Improvement of

Husbandry & Trade.

TUESDAY, February 13. 1682.

The Contents.

Some Considerations upon the Proposals approved on by
the City of London, for Subscriptions upon Lives,
Wherein are some Observations and Conjectures upon
the East-India Company, and Bankers.

S I R,

IN my last, I gave you an Account of the great
Undertaking, to promote Trade by a Bank; ap-
proved on by the City of London. Now I must give
you an Account of another great Affair, carryed on
by the same Persons, and 'tis Printed in a large Sheet,
by them as followeth, Viz.

Proposals Made and Approved by the City of London,
for a Yearly Increase of Wealth, by Subscriptions, to
Advance Money at Interest, for Lives, of whatsoever
Age or Sex, under Ten Several Ranks or Classes; which
Subscriptions will produce great Advantage to the Survi-
vours, as is particularly instanced in the Schemes and
Paragraphs following, V I Z. T The

	The Particular Sums to be Subscribed.	The Number of Persons requisite for each Rank.	Total Summe to be Subscribed by each Rank.	The Yearly Interest there- of.
1	5	2000	10000	600
2	10	1000	10000	600
3	20	500	10000	600
4	25	400	10000	600
5	50	200	10000	600
6	100	100	10000	600
7	200	50	10000	600
8	400	25	10000	600
9	500	20	10000	600
10	1000	10	10000	600

The Subscribers Names, Quali- ties, Sexes, and Places of Hab- itations	1. Rank of Per- sons under 7.	7. and 14.	14. and 21.	21. and 28.	28. and 35.	35. and 42.	42. and 49.	49. and 56.	56. and 63.	63. and 70.
A. B. of Cheapside, London, Goldsmith, for his Son John.	5									
The same for C. D. of Corn- hill, Gent.			5							
E. F. of Pa- ternoster-row Mercer, for himself.								5		

BY which Schemes it appears, There is 10000 l. to be Subscribed on each Rank or Class of Sums and Persons, the Interest of which comes to 600 l. per Annum. But no Subscriber shall be held obliged to pay his Money until the said Summ of 10000 l. be fully underwritten, (that is to say) If he have Subscribed 5 l. until 1999 other Persons of the same Rank or Class (as to Age) have each of them Subscribed 5 l. to make up the same 10000 l. Or if he have Subscribed 50 l. until 199 other Persons of the same Rank or Class (as to Age) have each of them Subscribed 50 l.

Every

Every Person for whom a Subscription shall be made, shall, from the time his Money is paid, receive Interest after the rate of Six Pounds per Cent. per Annum; and as any of those that are in the same Rank, dye, the Survivours of that Rank, shall receive the Interest Money that should have been paid to the Deceased, equally divided amongst them; (that is to say) If one of the ten Subscribers for 1000 l. each man, do dye, the other Nine that shall survive, shall receive besides the Interest for their own 1000 l. (each) Subscribed (which is 60 l. per Annum) their equal share of that 60 l. which would have accrued to the Deceased, and so of the rest.

Every Subscriber, when he comes to Subscribe, shall declare the Age or Ages of the Persons for whom he doth Subscribe (Viz.) Whether they be under the Age of 7, or above 7. and under the Age of 14, or above 14. and under the Age of 21, or above 21. And so of the rest of the said Ranks. And if any Person under-writing, either for himself, or any other, shall Declare, and Subscribe the Person for whom such Subscriptions shall be made, to be of any other Age than by the Rules or Instances aforementioned, are allowable to pass in such Rank or Class as he shall underwrite for, such Subscriptions, and the Moneys thereupon paid shall be forfeited, and go to the rest of that Rank.

If any Person shall underwrite the first five Sums above mentioned, which amounts to but 110 l. and enter himself, or those for whom he underwrites, according to their respective Ages, in five several Ranks or Classes, he hath thereby a possibility of receiving five times 600 l. which is 3000 l. per Annum, during his Life, if he Survive the rest. And so if any shall un-
derwrite

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derwrite, (in like manner) all the ten Summs first above mentioned, which amounts to 2310*l.* he hath like possibility of receiving ten times 600*l.* per Annum, during his Life, if he Survive the rest.

Every Person, when he comes to demand any Interest-Money, must bring Certificate from the Trustees of the respective Rank or Class in which the Subscription was made, that the Person upon whose Life the Money is demanded, was alive at the time when the Interest by him demanded became due; But if no Demand be made of any Persons Interest by the space of three years successively, such Persons shall be held as Dead, and his Interest for the said three Years, and until he shall afterwards appear to make Demand, shall be lost to him, and divided among the rest of the Subscribers; which said Trustees shall for the first Year be nominated and chosen by the major part of the Subscribers in each Rank respectively, as soon as the said Rank or Class shall be filled up, and afterwards annually.

If any Person desires to transfer his Interest, it will sell every Year for more Money than it would have done the Year before; for, the more Persons dye, the greater will the Income be to the Survivours; and any man may transfer his Interest to whom he pleases.

This Fund, for the security of the Payment of the said Interest, shall be settled to the satisfaction of the Subscribers, as shall be advised by Council Learned in the Law.

But

But to these Proposals, I hear two great Objections.

- 1st. That the Subscribers shall have but common Interest, and loose the Principal; which is not a Penny-worth for a Penny.
- 2dly. That People may Club together, and leave to the longest Liver, Interest and Principal; or it may be again divided among the Heirs, or the Heirs may come in afresh upon Interest, and it may be a Fund for such Interest ad infinitum.

These Objections I'll consider with all fairness imaginable; and first, of the first.

'Tis true, the Subscribers shall have no more but what the Law calls, Common Interest, Viz, Six per Cent. But whether the Currant Interest of the Town and Country, is like to be such, is to be enquired into; and so much as the Interest shall be less worth, so much will the Proposals appear better; and if my foresight fails me not, within a while, Interest will not be so much worth, my Reasons take, as follow.

Within this two Years, I went my self to the East-India Company, in behalf of a Friend, to offer them some Money at three per Cent. And though I made one of the Officers my Friend, to entreat for me, yet it would not be accepted: and 'tis notorious, that about that time, abundance of People did lend them at that rate; the reason, I suppose, was, because they could not get more, with security to their satisfaction; nay, to others 'twas lent at four, four and a half, and five, currantly; and although now 'tis risen to six: yet when the Cause of its rise shall be removed, it must of necessity again fall (for it is out of the power of Laws to ascertain Interest, as is apparent by these Instances; and the high rates the King and others have given,

given, when their extraordinary occasions have forc't it, besides Procuration, Continuation, &c.) and the causes of its rise, according to my best observation, have been as follows.

Besides the great quantities of *Money* carried out by the *Turky* Company, and to several other Places in *Europe*, according to common Custom, several *Interlopers* for *India*, provided themselves with a great quantity; the *East-India* Company hoping by a very great Trade, to prejudice these *Interlopers*, provided much more than ever they did before: these extraordinary occasions, unless the quantities were proportionably increas'd, could do no less than raise *Interest* (every one raising their Commodity according to the eagerness and multiplicity of good *Chapmen*) but that which made it more than ordinarily break out, was, that some Persons that were not pleas'd with Sir *John More's* Government in his Mayoralty, thought to prejudice him by draining *Ben. Hinton*, his Intimate, a *Goldsmith* and *Banker* in *Lombard Street*. This was told to me about a Fortnight before the first *Bankers* of this late Storm, *Viz.* Mr. *Addis*, and his Partners went off: And this is confirm'd to me by a considerable Man in this City, who tells me, the *Dissenters* say, the *Bank* will encourage Trade too much to be countenanc'd at this time. When *Money* was thus drawn from Mr. *Hinton*, almost every body (although 'tis probable the most part knew not why) thought it best to secure their own, and ran with open mouth upon all the *Bankers* for *Money*, thinking it better to let it lye dead a while in their *Chests*, than to run a hazard of trusting such, who for ought they knew, might do as Mr. *Addis*, and some others near him, had done; to joyn with this, some *Dissenters* be-

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ing Excommunicated, and a *Discourse*, that all the rest that would not comply, should; made, I suppose, most Folk willing to have their *Money* out of such hands. Also the many and rich *Interlopers* that went, and were designed to go for *India*, together with all the Jealousies imaginable, rais'd by them and their Friends, upon the Company, made a great many of the fearful Members of the Company eagerly sell their Stocks, and perhaps some of their designing Ones too, that they might afterwards have opportunity of buying again cheaper.

This, when the Company had most need of *Money* to set out their numerous *Fleet*, upwards of thirty *Sail*, made their *Creditors* run very earnestly on them also, for the *Money* they had lent them; which put them to such straits, that instead of three, they were very willing to give five or six *per Cent.* and some say, Promises of good turns into the bargain: but all would not do, their *Auctions* fell from 365 to 245, and they were forc't, to put a stop to Payments for three months, and in the mean while have appointed a Sale, and expect several rich *Ships* home, with which they question not to give a stop to all reasonable Complaints.

This, all laid together, I take to be the reason why *Money* is at this high rate; but if my Conjectures are false, I beg pardon, and I wish some more knowing would give us the true Causes: But if I am not mistaken, then it will follow, that when the *Hoarders* are weary of keeping up their *Money*, when what was exported last year to all Parts, shall return with a *Duck* in its mouth, when the *East-India Auctions* shall again rise, when the Fright shall be over, as usually in these Cases, it is after a little while, when we shall

shall

shall come to have less Disputes, and be more united about Religion, all which, I hope shortly to see, then you'll find *Money* as cheap, if not cheaper than usually; and the *East-India Company* offered again, more *Money* than they have occasion for; and I verily believe they may, if they will, be one of the chiefest *Funds* in the Nation; for although they owe a great deal of *Money*, yet 'tis visible that they have a far greater Stock; and 'tis also plain, that 'tis their *Interest* to keep up their *Credit*, although it were by lending their own private *Cash*; for otherwise they loose more by the fall of their *Auctions*, then all their Debts come too; as lately 'twas said, their Debts were about 800000 *l.* and their Principal Stock is about 750000 *l.* and every 100 *l.* fell in their *Auctions*, as above, from 365 to 245, which is 120 *per Cent.* amounting to 900000 *l.*

This *Money*, or so much of it as will make currant Payment, I perswade my self they will raise by themselves, and Friends, unless they find some better expedient, although perhaps forbearance of a Dividend or two, may do the Business. If so; then seeing the *Bankers* are single, and their Stocks not so visible, and some or other of them often drop off, what should hinder, but (this Company appearing thus stanch) most Folk should run their *Money* in here, cheaper than other Places, by one or two *per Cent.* (except in the *Guinia Company*, which I take to be as safe as this) And as for danger from *Interlopers*, I see no great reason to fear, because the *Guinia Company*, in spite of as many *Interlopers* as will go, are in a thriving condition. And this *India Company* may, with a less gain *per Cent.* in many more hundreds, get more *Money*, and more dishearten their Adversaries: there is no necessity

cessity for a double Trade, to have double Fortifications, double Agents or Factories, neither will their need to the Great Ones in *India* double Presents, nor altogether be among themselves double Petty Charges. Much more I could say on this Subject, but I don't think it needful here: my drift is mainly to shew, that if *Money* should come again to three *per Cent.* then the allowance of six will be equivalent to twelve when *Interest* is at six.

The second Part of the first *Objection*, is, *That the Principal will be lost.*

'Tis true, it will be so, but who is it will find it? Why, 'tis the City of *London* from whom most of the *Money* expected to be Subscribed, hath been gotten; for if they are *Citizens*, they give it to their own Body, and for their own use; 'tis probable their Children may be the Orphans to reap the benefit of it: but suppose it should be spent in *Triumphs*, *Lord Mayors Shews*, *Publick Buildings*, *Festivals*? Is it not such like that inables us now to live so well, and makes us the Renown of the whole Earth? I am strongly perswaded that a stately *Lord Mayors Shew*, makes *London*, from Strangers, that flock to see, get more *Money*, six times over, than ever the charge of the *Pageantry* came to; and if they had stock to enlarge their Glory? I am sure a proportionable Expence will follow it. O what Crouds flockt hither to see the Glory of the Kings Return and Coronation.

But if the Subscribers should not be *Citizens*; yet it is likely it will turn to their Childrens Advantage: for *London* is the means of Preferment to most of the

Countrys Progenie. And I question not, but when the City shall reap these Advantages; 'twill be a good Argument for Preferment to Places, for the Heirs of such Subscribers.

To the Second Objection, Viz. That the People may Club, &c.

I confess, in Theory, all this is true. But 'tis next to impossible, to believe that e're it should be practised; for who without consideration of some Loaves for his pains, will gather this Club together? Or will they more fungorum, as Mushrooms all start up together in a night, to throw in their Dust? But if they should; who should find out a Security? Search the Title, or be Council Learned in the Law, to settle and secure this Fund. Or if paid for; will not the charge of doing these things, when taken out of these little Combinations, reduce this profit to a less than what is here proposed? I doubt it will. However, till that be tryed, this is the better, and every one hath liberty to please himself: I believe I shall never be of that Club, whatever I shall be of the other, I can't yet say. If the first part of this Objection wont take, the rest ne're can, as being Dependants on it.

Hoping that what's here said, may be some Answer to the Objections, or at leastwise, make the Prejudice of Subscribing, appear not altogether so great, as at first it might be thought for. I'll strive now to show what in likelihood will be the Advantages of these Subscriptions.

'Tis told you six per Cent. with the whole 600 l. per Annum, to be divided among the Survivours, even to the last man; no body, Subscribing for himself, that looses

looses here, but he that dyes; and rather than he shall want Money in the next World, he, if he leads a good Life here, shall have a Note to St. Peter to turn the Key for nothing: but for those that shall live long here, let's see what in likelihood shall be their profit.

Major Graunt, or rather that Learned and Ingenious Virtuoso, Sir William Petty, in his admirable Observations of the Bills of Mortality of London: a Book useful to a multitude of Purposes, and a Pattern for many other great Designs. This great Man I say, in pag. 14. of his Second Edition, saith, 'That about one third of all that were ever quick, dye under five years old, and about thirty six per Cent. under six.

If so; 'Tis to be supposed, that those of the First Rank that shall live but seven years after Subscription, shall receive upwards of 9 per Cent.

But in pag. 56. 'That three dye yearly out of Eleven Families, of each eight Persons, i. e. eighty eight; if it were ninety, 'twould be one in thirty: And at this rate, whosoever lives thirty year in a Place, may have no Neighbour that was cotemporary with him in his first year. Therefore they of the said Rank, may in thirty years reasonably expect almost 200 l. per Annum, a piece.

In Pag. 58. he saith, 'Of one hundred, there dyes within the first six Years 36; the next ten Years,

or Decad,	24.
The second Decad,	15.
The third,	9.
The fourth,	6.
The next,	4.
Next,	3.

Uz

Next,

Next,	2.
Next,	1.
From whence it follows, that of the said 100 conceived, there remain alive at six years end,	64.
At sixteen,	40.
At twenty six,	25.
At thirty six,	16.
At forty six,	10.
At fifty six,	6.
At sixty,	3.
At seventy six,	1.
At eighty,	0.

In Pag. 65. he saith, *In the Country about one in fifty dye yearly, but in London about one in thirty. And that London is not so healthful now as heretofore.*

Wherefore it may be advantageous to subscribe on Countrey Lives, rather than City ones.

If what I have already said, shall appear reasonable, then it may be worth while to consider, what People in likelihood it may be fittest for.

I do suppose it very proper for all Landed Men, to put in 5 l. a piece for their younger Children; for if they dye quickly, the Estate will be free to the Heir: if not, 'twill be considerable, and the Estate shall not need to be clog'd for maintenance.

'Twill be proper for all Tradesmen who live gently from hand to mouth, but never provide much aforehand: this way their Children may have Portions, and themselves be well kept in their Old Age.

'Twill make all sorts of old People be made much on, because the longer they live, the more they'l have.

Merchants, several other Tradesmen, and Gamesters, that live by hazard, may sometimes at extraordinary
hits,

hits, put something in here to keep, in cases of extraordinary Losses.

Poor Servants, as soon as they get 5 l. may by it take care for Old Age.

Friends may put in for their *She* Relations who are ill Married, whereby they shall never want, and 'twill be a means for forcing Kindness from their Husbands.

'Twill be better for Wives than Joynters, and Husbands may imploy a great deal of the Money that should buy Land.

If Families grow so low, that there is a necessity for selling of *Joyntures*, some of the Money may be secured here, and the Widdow fare ne're the worse.

If every *Universty-Man*, when he comes to Preferment of 100 l. per annum, would put in 5 l. and so for every 100 l. to have the Interest go towards the *Library* of his *Colledge*; 'twould in a while make them very great: and 'twould do the like for *Syon-Colledge*, if each such *London Minister* would do so.

And if twenty good Folk would give 5 l. a piece, for ought I know, it might raise such a *Colledge* as Mr. *Abraham Cowley* speaks on in his *Discourse of Agriculture, for the Improvement of Husbandry*.

Multitudes of other Conveniences I could enumerate, but they that will consider these, may find enough more that will be agreeable to their own Circumstances: and there is a Book signed by Mr. *Wagstaff*, the *City Town-Clerk*, which Book is Entituled, *Proposals for Increase of Wealth by Subscriptions*. That will shew you divers other Instances.

Whatever is said of 5 l. will serve for any other Summe.

S I R, If these Reasons shall be undeniable, I pray incourage this Design. If not, perswade some
body

body to shew the contrary; but however, pardon me, who unless I do Subscribe, am like no ways to be concerned in it, except in good Wishes for that City, from which I have had my well Being.

Farewell, &c.

Advertisements.

THE Author and Collector hereof sells by the Pound, *Chocolate* of several sorts, so good, that he thinks none sells better: and one sort especially, that is made with the best sort of *Nuts*, and but with a very little *Sugar*, without *Spice* or *Perfume*: any within compals of the *Penny-Post*, may have it sent to them, if they send him five Shillings for each Pound, as directed at the bottom hereof.

THE *Philosophical Transactions* are now extant, and will be Published Monthly. To be Sold by *Henry Hunt*, Operator to the *Royal-Society*, at the *Repository* in *Gresham-Colledge*.

ledge. *John Rogers*, at the *Bible* in *Westminster Hall*. And *John Smith*, at the *Princes Arms* in *St. Pauls Church Yard*.

THE *Weekly Memorials for the Ingenious, &c.* Began in *March* last, and continued to Number 29. Inclusive, all written by the first Undertaker of those *Memorials*, are now publish't, together with a *Table* and *Preface*: and are to be Sold by *R. Chiswell*, at the *Rose and Crown* in *St. Pauls Church-Yard*. *Thomas Basset*, at the *George* by *St. Dunstons Church* in *Fleet-Street*. *William Crook*, at the *Green-Dragon* without *Temple-Bar*. *Samuel Crouch*, at the *Corner of Popes-Head Alley*, next *Cornhill*.

There is lately Published the Second Edition of the Book, Entituled, *Humane Prudence*, or the Art by which a Man may raise himself and Fortunes to Grandeur; to which is now added a *Table*. Printed for *John Lawrence*, at the *Angel* in *Cornhill*, near the *Royal-Exchange*, Price 1 s.

ERRATA.

IN Page 96. Line 21, for *Billingsby*, read *Billing-*
fly. p. 102. l. 17. f. *Contd*, r. *Could.* p. 103. l.
 29. r. *but.* p. 106. l. 18. dele *as.* p. 120. l. 11. f.
more, r. *mere.* Ibid. l. 20. f. *dis*, r. *dis.* p. 121. l. 2.
 f. *Queoca*, r. *Queece.* Ibid. l. 9. f. *dryness*, r. *degrees.*
 Ibid. l. 24. f. *most*, r. *worst.* p. 122. l. 5. f. *Cannoll*, r.
Cannell. Ibid. l. 10. f. *something*, r. *searching.* Ibid.
 l. 15. f. *cannot*, r. *can well.* Ibid. l. 18. r. *well* stored.
 p. 123. l. 5. r. *bitfull.* Ibid. l. 11. f. *Pixes*, r. *Picks.*
 Ibid. l. 29. r. *Hewers.* Ibid. l. 33. r. *Hewers.* p. 124.
 r. *there must be.* Ibid. l. 20. f. *Kowe*, r. *Kewe.* Ibid.
 21. f. *their*, r. *three.* Ibid. l. 31. r. *must be.* p. 125.
 l. 3. f. *wood*, r. *weed.* Ibid. 19. f. *tripple*, r. *triple.* p.
 139. l. 15. f. *Champion*, r. *Campaigne.*

London, Printed by J. Gain, for the Author John Houghton, and is to be
 Sold at his House, against the Ship-Tavern in St. Bartholomew-Lane, behind
 the Royal Exchange: By John Lawrence, at the Angel in Cornhill: By
 Moses Pitt at the Angel in St. Pauls Church-Yard: By William Cadman, at
 the Popes-head in the New-Exchange: By Dorman Newman, at the Kings
 Arms in the Poultry And several other Booksellers, 1682.

COLLECTION
 OF
 LETTERS

For the Improvement of
Husbandry & Trade,

TUESDAY, March 13. 1682.

The Contents.

*A General Account of the Goods Imported, Exported,
 and Exported by Certificate, with the number of Ships
 entred in, and cleared out, to and from the City of Lon-
 don, from the 29th. of October, 1682, to the 1st. of
 February, 1683, extracted from the Bills of Entry.
 An Experiment of the Ingenious Mr. John Worlidge
 of Petersfield in Hampshire, for Improving and Fyn-
 ing of Syder.*

S I R,
THAT much may be increast his Ma-
 jesties Subjects; that all his Subjects may
 know what Materials, and quantities there-
 of, they have to work with; that they may know
 X the

the quantities consumed, and what in probability may be fit for them to keep, produce, or sell. That *Statesmen* and *Parliaments* may know what is fit to be increast, and what (if any thing) to be deprest. That all may be tempted to make the advancement of Trade their Study, and gain to themselves (as the consequence thereof) much Wealth, to his Majesty, a full *Exchequer*, an *Invincible Fleet*, and great *Renown*: I give you here a Monthly Account of the *Imports, Exports, and Exports by Certificate*, with the number of *Ships* entred in, and cleared out from this famous *Emporium of Great Britain*, this great City *LONDON*.

This Account I have at a great charge extracted from Sheets, that are every day (*Holy-days* excepted) Published by Mr. *Nathanael Long*, usually called, *Bills of Entry*. Which he sends to such Merchants, or others, in or near the City of *LONDON*, as desire them, and will pay for them, forty shillings *per Annum*: and I do very much wonder, that all such Gentlemen, who study the welfare of the *State*, or design to be *Parliament Men*, and have such plentiful Estates, that forty Shillings a year cannot be mist, that these, I say, should not much rather study these, than give six pounds *per annum* for *News-Letters*: (useful too.) Here would be *Divertisements* for all their Friends; and 'tis hard (besides the curiosity of knowing from whence all things come to us, and whether our Goods go) if an ingenious Gentleman (by knowing the Names of every particular Importer, and his quantity *Imported*) cannot by cheap buying from the first hand, save more than the Charge of these *Bills* amount to; were I to live in the *Coun-trey*, and were of a *Club*, I would willingly contribute

bute half a *Crown*, or a *Crown* a Year, towards such a Matter, although a small Forfeiture of them that do not come, would do the business. This, with the names of *Ships*, may be had from the particular *Bills*; but from mine you can expect no more than the general Monthly Quantities, and such you have, as follow, *Viz.*

London, Imported from the 29th. of December, 1682, to the 1st. of February, 1683.

IMPORTED.

- A Lkermes Syrup, l. 240.
- Aristolochia, l. 2920.
- Ambergreece, *Ounc.* 7.
- Annatto, l. 2787.
- Amber Mast 50. l. 410.
- Anmoniacum l. 352.
- Antimonium Crudum, C. 15.
- Almonds *Tun* 10. C. 11.
- Alpisty, or Canary Seeds C. 4.
- Aqua Vitæ *Tun* 293.
- Anchovies *Cask* 455.
- Ashes Pot *Cask* 23.
- Balsam Natural l. 130.
- Beer Spruce *Bar.* 47.
- Beads l. 23070.
- Bark Jesuits l. 342.
- Balaustins l. 160.
- Butter Jessamine, l. 16.
- Berryes French l. 260.
- Bdellium l. 76.
- Barley French *Tun* 4. C. 10.
- Bark Mirtle C. 4.
- Brimstone C. 5.
- Bone Whale *Tun* 11. C. 11.
- Battry Fats 20. C. 94.
- Battry Metall prepared for it Fats 2 C. 49.
- Books *Mauud* 1. *Bales* 30. *Case* 1. C. 10.
- Balls *Fat* 3:
- Barilla *Bales* 375. C. 6. *Serns* 35:
- Bone Whale Fats 6.
- Bristles *Doz.* 223.
- Balls Wash *Doz.* 2.
- Blades Sword *Doz.* 468.
- Beads *Gross* 3.
- Boxes Tinder *Doz.* 4.
- Brooms *Doz.* 4649.
- Babies *Gross* 8.
- Band-string Twist *Doz.* 514.
- Buttons Hair *Gross* 1888.
- Baskets *Doz.* 10.
- Bazels Tanned *Doz.* 139.
- Buckrams *Pcs.* 123.
- Barras *Ells* 5000.
- Boutal Keynes *Pcs.* 20.
- Balks 2150.
- Bricks 3000.

Casharilla 155
 Cantharides 1570
 Cochaneel 11973
 Candles Wax 11000
 Cinamon 1.10270
 Coral 1.1858
 Cloves 1.1635
 Copper wrought 1.64
 Chocolate 1.1526
 Cheese C 1 q 1
 Coffee Tun 10 C 5 q 2
 Cork Tun 42 C 10
 Cherries dried C 4
 Copper Tun 8 C 14
 Coals Tun 500
 Clapboards 6160
 Cordage Tun 5
 Cortex Guaiaci C 11
 Cocoa Tun 35 C 8
 Currants Cask 116
 Capers bhd's 57 Cask 35 11550
 Caddis Dozen 114
 Cupps China Doz 1
 Candles Doz 227
 Cordivants Doz. 421
 Carpets Suits 20
 Calicoe Table Cloth Doz 1
 Canes 4500
 Calicoes Pcs 22
 Canvas Ells 800 Bolts 194
 Spruce Ells 57160
 Clothes Scotch Yards 16000
 Couler Painting Case 1
 Camphire 160
 Corn Powder 1.14
 Doronicum 1.25
 Dornix Pcs 1326
 Deales 34255
 Durance Yards 1155
 Duck Holland Ells 28700
 Diaper Yards 20584
 Damask Yards 850
 Essence 1.70
 Eggs 24200
 Flowers Camomill 1.500
 Feathers Estrich 1.90
 Fustick Tun 228 C 5
 Flax Tun 55 C 1

Figs Bar. 32
 Feathers Bags 78
 Figures Alabafter Cases 2 Boxes 2
 Fish Stock Tittling 20500
 Freeze Irish Yards 1650
 Flock-work Pcs 24
 Fanns Corn 30
 Gum Guaiaci 1.702
 Elemni 1.120
 Ginger green 1.200
 Grapes dried 1.2180
 Galbanum 2940
 Gallangall 1.340
 Gum Tragacanth C. 14
 Senica Tun 1 C 19
 Ginger C 110 Bags 295
 Gaules Sacks 1309
 Glafs French Case 10
 Glaffes 4000 Chests 12
 Herrings Bar. 3
 Hair Goats Sacks 60
 Hose Thred Dozen 7
 Hats Dozen 7
 Hose Dozen 39
 Horn Rings Grosfs 61
 Henfins Ells 1200
 Hemp Tun 55 C 13
 Harfords Ells 1600
 Horn Ox 4000
 Herba Longees Pcs 58
 Hoops Iron Tun 3
 Honey Tun 2 C 2
 Hartshorn C 19
 Hay Red C 9
 Hydes Cow 1.8460
 Red Rowl 28 pr 198
 Muscovy 21
 Tad 142
 Hinderlins Ells 1200
 Indico 1.17140
 Iinglafs 188
 Incle wrought 1.706 Doz. 715
 Iron Tun 41 C 19
 Old Tun 9 C 14
 Ink Printing C 4
 Juice Lime Tun 4 bhd. 2
 Lemons Cask 30

Leather

Leather Mask 1.190
 Lapis Lazulæ 195
 Leaves Rose 1.150
 Lentiscus 1.200
 Litharge of Gold C 11
 Lead White Tun 8 C 4 Bar. 14
 Lignum Vitæ Tun 15
 Rhodium Tun 28 C 5
 Latten Black C 14
 Linnen Ells 35256
 Germ. Ells 193030
 Litmus Tun 1 C 15
 Latten shaven C 10
 Lawns Sletia Pcs 2014
 Litharge Silver Tun 9
 Lemmons Chest 436
 Mecury 1.180
 Mace 1.663
 Millium Solis 1.14180
 Meats Sweet 1.100
 Manna 1.1890
 Meum Bar. 14
 Moloffoes Cask 74
 Meal Bar. 1
 Mattens Bal 2
 Madder Bal 67
 Martin-Tayles 1500
 Matts 66
 Marble Blocks 6
 Mast's 34
 Nutmeggs 1.2267
 Necklaces Jet 165
 Nutts Chest Bar. 38
 Wall Bar. 267
 Small Bar. 20
 Nails Head Bar. 1
 Oyl 1.400 Cask 1
 Opium 1.3110
 Oats Quarter 30
 Opoponax 1300
 Oyl Turpentine 12700
 Walnut C 12 bhd's
 Orpiment C 1
 Orhall C 9
 Olives bhd's 36 Bar. 30
 Onions Bar. 61
 Oranges Chest 7304

Ozenbriggs Ells 61043
 Pulium Montan 1.720
 Percilium 1.3900
 Prunelloes 1.3240
 Pistaches 1.68
 Pomatum 1.14
 Piemonto 1.17169
 Potatoes C 6
 Pruens Tun 8 C 3
 Pibbles Tun 10
 Pumice Stones Tun 2
 C 10
 Pears dried Bar. 12
 Pitch and Tar Last 210
 Bar. 374
 Pencils Doz. 2400
 Plates single and double Bar. 145
 Plates Horn Doz. 12
 Pipes Tobacco Grosfs 44
 Pots Stone Cast 300
 Plank Oaken 329
 Pintadoes 16955
 Paper Blew Reams 30
 Paper Reams 13351
 Plate White ounces 36
 Pippens Bush. 11.
 Pearle Seed Oun. 160
 Plaister of Paris Mount. 8
 Platters Wooden 5800
 Quicksilver 14355
 Quilts 3
 Rhabarb 1.44
 Roots Alkanett 150
 Rape Tun 3
 Rozen Tun 5
 Rice C 17
 Raisins Bar. 1614 Pcs
 13278
 Serne 39
 Rufhes Bull Load 37
 Rods Basket Bund. 120
 Rye Quarters 15
 Sperma Cati 1.150
 Seeds Garden 1.6138
 Onion Tun 4 C 18
 Sal

Sal Armoniack 19402
 Gem, 1800
 Silk wrought 12665
 Seeds Fennel 12402
 Agnus Castus 180
 Senna 18800
 Saffron 1200
 Slude 1130
 Seeds Worm 17608
 Snuff 1432
 Scamony 12290
 Succads 1552
 Smalts 18
 Soap Tun 68 C 8 Chest
 100
 Steel Tun 7 C 15
 Snowting Tun 1 C 2
 Sugar Cask 3211 Chest 2
 Syder Terce 10
 Shavings for Hatts
 Sac. 8 Fat 1
 Silk Thrown Bal 10
 Raw Bal 1292
 Orgazine Bal 18
 Saffiore Sack 4
 Silk Ferret Bal 1
 Sables 2800
 Staves Pipe 54100
 Skins Beaver 2515
 Lamb 2900
 Sheep 900
 Calve 612
 Otter 298
 Fox 503
 Bear 305
 Musquash 769
 Racoon 541
 Buck 5345
 Cat 210
 Marten 1
 Minks 148
 Vizer 23
 Seal 16
 Grey 211
 Goat 160
 Fitch 114
 Morfe 20

Sturgeon Keggs 163
 Shoes old 600
 Salmon Bar 3
 Sheets old 1920
 Shruffe old C 2
 Stones Emery 95
 Sufoes Pcs 18
 Sandals pair 20
 Stones Whet 4000
 Goat Ounces 191
 Sugar Loaf Cask 3
 Sparrs 550
 Staves Hoghead 3000
 Thred 15555 Dozen
 2549
 Turpentine 13050
 Turbith 1600
 Tortois Shell 1663
 Turnsole 11168
 Treacle Venice 17
 Tutia Lapis 1100
 Tea 111
 Twine Tun 2 C 8
 Tartar Cream Tun 5 C 12
 Teeth Eleph. Tun 6 C 4
 Tow Tun 2 C 2
 Tallow Tun 119 C 3
 Tobacco hds 225
 Trenchers Gros 63
 Tyles Pan 19772
 Tapiftry Ells 3397
 Thimbles 19500
 Tyles Gally Foot 800
 Timber Beech Load 10
 Ticking Ells 825
 Ticks 78
 Timber Load 614
 Verdigreece 12052
 Vermilion 130
 Vitriol 1570
 Varnish Tun 1
 Vinegar Tun 1 Terce 2
 Velure Yards 137
 Wood Olive Tun 15
 Nicaragua Tun 30
 C 10
 Log Tun 88

Ce-

Wood Cedar Tun 35 C 15
 Box Tun 18
 Brazeletto Tun 5
 C 10
 Granadilla Tun 7
 Wax Bees T 11 C 9 92
 Wyre steel Tun 2 C 11
 Latin Tun 12 C 7
 Wine Florence Chests 33
 Port Tun 2095 hbd 2
 Spanifh Butts and
 Pipes 6883
 Rhinifh Cask 105
 Wood wro. Maund 1
 Wool Polonia Bal 28
 Bags 3
 Wool Baggs 636
 Goats Sacks 6
 Elfrich Baggs 5

Cotton Bags 1082
 Wares Small Fat 4
 Wood Lath Faithem 5
 Wainfcoats 5656
 Waters Perfumed Gal. 3
 Orange Flow Gal.
 34 Chest 7
 Wool Felt Pockets 33
 Wombs Weaver 150
 Wood round Pcs 150
 Waters distilled Gal. 12
 Yarn Worsted 1585
 wro. 100
 Spruce Tun 2 C 16
 Cable Tun 6 C 9
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EXPORTED.

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 lets 4
 Apothecary Wares C 74
 Apparel Suits 180
 Ale Bar 2
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 Beer Tun 106
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 Butter Firk 651
 Bays Minikin 117
 Bridles Doz 68
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 Boxes Snuff Doz 6
 Brafs C 70
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 Buttons Hair Gros 154
 Bread Ginger C 1 92
 Bedsteads 10
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Boxes Comb 8
 Patch pr. 8
 Dressing 8
 Bryes double 123
 Bones Ox 2000
 Beans 92
 Brushhes Doz. 7
 Bellows Smiths pr. 12
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 Blankets pr. 3
 Cloaths Spanifh 487
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 Short 93
 Horfe pr 3
 Hair pcs. 3
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Cushions 607
 Couches 3
 Cards Wool Doz. 89
 Caps Doz. 1722
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 Coulers Painters Tun 1
 Copper C 57 91
 Cordage C 203
 Collars Horse 14
 Candles Doz. 813
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 Catlins Gros 2
 Camletts pcs 124
 Crape pcs. 2
 Coats 20
 Canes wrought Doz. 7
 Dozens single 27
 double 61
 Dollars and Pieces of
 Eight 132642
 Drawers Chest 5
 Diamonds 4
 Dornix Yards 360
 Corks gr. 61
 Engine 1
 Essence 13
 Earthen Wares Bask. 1
 pcs. 550
 Earth Red Bush. 14
 Feather Bed and Blan-
 ket 1
 Flannel Yards 2573
 Freeze Yards 770
 Fringe Worsted pcs 7
 Fultians pcs. 758
 Feathers 18
 Fish Cod 1000
 Frames Picture 3
 Fanns 6
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 Glew C 20

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 Wares pcs. 7100
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 Girth Web Gros 4
 Glasses Window Chest 8
 Looking 143
 Cut 10
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 Hole Worsted Doz.
 1659
 Woollen doz. 2291
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 Haberdashry 14999
 Hoops 72700
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 Herrings Bar 196
 Hair Kids C 90
 Horses 21
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 Horns Powder Doz. 30
 Iron wrought C 443
 43
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 Juice of Cherries hds 4
 Jewels Box 1
 Jumps hds 6 gr. 31
 Kerfyes 152
 Leather wrought
 13702
 Lead Fodder 339 C 14
 Linsy-Woolfy 128
 Lace Bone Yards 74
 Gold and Silver
 119
 Linnen English pcs 12
 Leaves Lathorn 93600
 Last Doz 2
 Lead Red C 6
 Black C 4
 Linseed grs 68
 Lines Clock Band. 24
 Loaves Sugar C 44
 Musk Ounces 1392
 Mace

Mace 153
 Meal Oat Bush 30
 Mum Tun 1 Bar 28
 Meal Wheat qu. 110
 Mules 14
 Nails C 145
 Oaker Red C 1
 Pewter C 130 qu. 3
 Perpets 6001
 Perukes 36
 Pates 158
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 Pipes Tobacco Gros 131
 Plate White Oun. 2525
 Peafe qu. 1
 Pictures 28.
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 Powder Hair 148
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 Ruggs Irish 20
 Ribbon Silver 13
 Rules 3
 Raggs old Tun 7
 Stuff Pcs 865
 with Gold and Sil-
 ver Yards 91
 Silk wrought 14575
 Wast 12710
 Serges 1739
 Sayes 920
 Stubb's Hornsnail C 25
 Saddles 84
 Stone Fire Load 15
 Spirits Gal. 67
 Skins Calve Doz. 1325
 Sheep 53
 Starch C 14
 Shovels Doz. 8
 Shot C 81
 Silk Thrown 1381
 Skins Goat Doz. 1
 Coney 31500
 Salmon Bar. 66
 Shoes old Doz. 336
 Soap hard C 2 92

Sleeves embroidered
 pr. 6
 Scoops Do. 2
 Shirts 200
 Spar 1
 Scabords old Gros 3
 Seives 98
 Swords and Belts 4
 Scretores 4
 Scales pr. 2
 Syder hds 5
 Tables and Stands 24
 Tin C 1932 qu. 3
 Trunks nest 40
 Trunks 2
 Ticks 7
 Tapestry 2
 Violins 6
 Work Clock 880
 Wool Cotton 118731
 Wax Bees 14232
 Wool Coney 11956
 Water Strong, Cases 60
 Gal 1157
 Wax hard 1125
 Watches 103
 Wool Spanish Bagg 13
 Hares 1110
 Whips Do. 3
 Zealots 14000
 Ware Upholstry C 3

Exported by
Certificate.

Affa fatida 11658
 Almonds C 51 qu. 1
 Anatto 125
 Beads 15205
 Barilla C 280
 Benzoin 150
 Battery C 1 qu. 2
 Buckrams pcs 30
 Bone Whale C 4
 Currants C 1641

Y Cal-

Callicoes pcs 33049
 Copper C 77
 Camphire l 1588
 Cinamon l 2056
 Crevats 3958
 Cardamoms l 505
 Carpets 164
 Cocoa C 10 qu. 2
 Cowryes C 502
 Cloves l 18
 Cochineel l 6062
 Cambogium l 200
 Cashia Lignea C 2
 Damask Yards 1535
 Figs C 295
 Feathers Estrich l 40
 Fustick C 138
 Ginger Bags 120 C
 486
 Gaules C 429
 Ginger Green l 9050
 Gum Lack l 4450
 Gingham 6
 Hydcs 4810
 Hair Goats l 4725
 Herba Longees 1180
 Hoops Iron Tun 7
 Hofe Do. 62
 Inle wro. Do. 20
 Indico l 155
 Iron Tun 34 C 10
 Linnen Cermany Ells
 67915
 Scotch Yards 100
 Lawns Sletia, pcs 716
 Linnen Ells 2808
 Barras Ells 2200
 Checks pcs 233
 Ozenbrigs Ells 23151
 Cambricks pcs 162
 Holland Duck El 434
 Spruce Canvas Ells
 975
 Draper Yards 347
 Harfords Ells 500
 Elinda Cloth pcs 116
 Hefens Ells 42
 Lignum vitæ Tun 36

Lead White C 36
 Lack Stick C 2260
 Nutmegs l 160
 Nillaes pcs 131
 Oyl Pipes 5 Gal 517
 Ditto Tun 91 hhd's
 13 Cask 15
 Olibanum C 81
 Pearl Seed Oun. 499
 Peniascoes 140
 Pantiles 1300
 Plates Latten Bar 33
 Pepper l 15039
 Pruens C 12
 Paper Reams 60
 Rice C 94
 Rangoes 10000
 Romalls 1913
 Raisins Tun 20 C 18
 Sal armoniack l 239
 Silk China l 498
 Raw l 13564
 With Gold and
 Silver pcs 28 Ells 130
 Stuffs Guiney 100
 Sugar C 6117
 Silk wrought l 1132
 Saltpetre Bags 100
 Seed Worm l 1060
 Soap C 165
 Skins Beaver 587
 Bear 90
 Morfe 86
 Otter 206
 Saffron 150
 Scamony l 60
 Steel C 4
 Stuff Yards 70
 Hair pcs 3
 Sheets old 2560
 Shell Tortois l 130
 Twine C 11
 Thread l 310
 Tobacco l 182792
 Turneric k l 5929
 Tapiftry Ells 198
 Teeth Elephant C 120
 Thread Pack l 21
 Teeth

Teeth Sea Morfe l 280
 Wine Tun 18 hhd 1
 Terce 2 Buts 8 Cask 10
 Gal 1455
 Wool Spanish Bags 96
 Cotton l 5700
 Wood Log Tun 25 C 5
 Braziletto C 116
 Wine Rhinifh Aunes 97

Wax Bees C 57
 Yarn Mohair l 9607
 Cotton l 23054

Ships Entred inward
 159
 Cleared out 60

An Experiment of the Ingenious Mr. John Worlidge
 of Petersfield in Hampshire for Improving and
 Fyning of Syder.

S I R,

THE Publishing those Letters and Notes you
 have taken the paines to Collect, proving to
 be of great use to the Inquisitive and Ingeni-
 ous, and the Candid Reception some of my Expe-
 riments and Observations have met withal, together
 with the Obligations you have laid upon me, encour-
 age me to give you a brief account of what I have
 observed and made tryal of in the Fining of Cider.

This Liquor (although excelling all other whatsoe-
 ver that this Kingdom naturally affords, as well for its
 Delicacy as its Plenty) hath been very much traduc'd
 and abus'd by the Carelesness and Ignorance of the
 Operators, either by the untimely Gathering the
 Fruit it is made of; the too hasty Working them up
 into

into *Liquor*, or the ill Management of it after it is in the Vessel. That the Reputation this *Drink* has gain'd in two or three hot years, when Fruit has been very well Ripen'd, that almost every one could make good *Cider* for present drinking; It hath lost again in a cold moist year (when there hath been a defect in the Ripening of the Fruit) for want of that Care and Skill that is required in such Operations, and that are necessary to be used, let the year prove Seasonable or Unseasonable, not that I pretend to an absolute Understanding of the right Ordering and Improving so curious a *Liquor*, but what hath occur'd in the ordinary Method of making of *Cider*, I will here Candidly impart.

Having planted a convenient number of *Redstreak-Trees*, according to my quantity of Ground, and particular Occasion. I had several times made *Cider* of that *Fruit*, but found it much inferior to that of *Herefordshire* (of which I had often tasted) it wanted that fullness of Body the other had, and richness in taste, wherewith it was impregnated. Both which defects, I concluded the *luscious* and *juicy sweet Apple* would supply, it making too fat a *Liquor* to be good of it self; accordingly I added about a fifth part of *Sweet-Apples* to the *Redstreaks* (they being ripe about the same time) and the Effect answer'd my design; for out of both these Fruits I had a very rich *Liquor*.

But the *Juice* of the *Sweet-Apple* being of a more gross and tenacious nature than that of any other *Apple*, and fearing it might impede the *Fining* of my *Cider*. I added in the *Vessel* about a tenth part of the expressed *Juice* of *Golden Rennets* through ripe, but newly gathered from the *Tree*, being near of the nature

ture, and almost equal in goodness to the *Redstreaks*, which begat a Fermentation, so that in about three *Weeks* time, this *Cider* was indifferently fine, leaving the *Vessel* unstopt all that time, only laying a loose Cover on the *Bunghole*.

For I have observed, that the *Cider* of new gathered *Fruit*, *finer* much sooner and better than that of such *Fruit* that hath layn long gathered and *mellow*, which hath made many of Opinion, that *Fruit* from the *Trees* made the best *Cider*.

It hath been also observed, that a mixture of *Apples* hath produced the best *Cider*. But that hath been only where the *Liquor* of the more *luscious* and *sweeter Apple* hath meliorated or enriched that of the more *jeune*, or that of the lesser mature *Fruit*, hath put the *Must* or *Mulse* of the *Mellow* into a *Fermentation*. Therefore Mixtures of *Acid* with *Acid*, *Sweet* with *Sweet*, or *Mellow* with *Mellow Fruit*, have no sensible effect, the one on the other.

Close stopping of any *Liquor*, prevents *Fermentation*, and so doth its standing in a broad *Vat*, or open *Vessel* uncovered: but the tunning of your *Cider* up soon after it is pressed, giving of it a sufficient breathing *Vent*, puts it into a gentle *Fermentation*, that sometimes in two, three, or four *Weeks*, it becomes fine.

As soon as it hath well *Fermented*, which may easily be discerned, if you take once in four or five days, a little out of the *Bunghole* with a *Glass-pipe* (which you may do by letting of it down four or five *Inches* into the *Cider*, and stopping the upper end with your *Thumb*) by which means may be observed the gradual *Fermentation* of your *Cider*.

After I had found it to be indifferently *fine*, it was drawn into the biggest Bottles of two, three, or four

Quart

Quarts a piece; and the Bottles then stood about three Weeks loosely stoppt, that *Perspiration* might not be hindred, and that a more perfect *Fermentation* might be had, and so standing, whatever of the flying *Lee* now remained, either settled in the bottom, or ascended on the top in the neck of the Bottle, the whole Body of the *Cider* appearing to your Eye against the Light, to be very transparent; for any *Liquor* will much sooner *fine* in a *Glass Bottle* than in a *Wooden Vessel*, which certainly must be from the coldness of it.

Note,

That in case at the opening of your Bottle, when you intend to Crane it off, any of the *Feces* rise, which will sometimes happen, when it is too closely stoppt, then let it stand open an hour or two, and it will re-settle.

Then with a *Syphon* or *Crane* (made of a Crystal or Flint-glass Pipe) was this *Supersine Liquor* drawn off into Quart or other Bottles, and close stoppt for use. The Bottoms that were left in the Craning were added together in a small Vessel, and after twenty four hours standing became as *Fine* as the other, and was drawn off as the other. So that there was no more loss in this Operation, than the very Dreggs.

Many times *Cider* that hath been made of the best Fruit, mature and carefully ordered, hath in time proved very poor, thin and eager, which can be imputed to no other Cause than that after it hath *Fermented* (which it will do at first, if ever) it hath stood on its own *Lee*, which through its own corrupt Nature, hath caused several reiterated *Fermentations*, and thereby infected the (once good) *Cider*, with the

the ill qualities of that *Acid* and *Putrid Feces*. And, *Cider* also standing long in a Vessel doth acquire whatever ill taste the Vessel can afford it.

And common experience tells you, That *Cider* not *fine*, is not well tasted, nor is it of the Strength or Body as is the *Fine*; especially that which hath been *Fined* in time, for when ever you open a Bottle of *Cider*, of which the upper part is clear, and the bottom foul, the first Glass drinks much more pleasantly than the last, the least mixture of the flying *Lee* making a sensible alteration for the worse.

Therefore the Method that I have used, and that is here prescribed to purify *Cider*, without any manner of Addition whatsoever, but by *Mechanic Operation* only, in a short time, before its best parts are prey'd upon, or corrupted, doth so far meliorate this *Drink* that in five or six *Weeks* time, you may have it of a rich and full Body (so that the *Fruit* were good) excellent bright *Canary* colour, without the least cloudiness in the last *Glass*, and of so naturally sweet and delicate a taste, that you may keep it many years in a good *Conservatory*, without any fear of decay; having nothing in it to beget a new *Fermentation*, but of it self it will increase in strength and vertu, that it may not undeservedly be stiled,

The most transcendent *Liquor* this Nation affords.

Advertisements.

THe Author and Collector hereof sells by the Pound, *Chocolate* of several sorts, so good, that he thinks none sells better: and one sort especially, that is made with the best sort of *Nuts*, and but with a very little *Sugar*, without *Spice* or *Perfume*: any within compass of the *Penny-Post* may have it sent to them, if they send him five shillings for each pound, as directed at the bottom hereof.

Mr. *Joseph Moxon* designs to carry on his *Mechanick Exercises*, upon condition enough will Subscribe to take them off at 2 *d.* for each Printed Sheet, and 2 *d.* for every Print taken off of *Copper-Cuts*: so that he may be sure to be no looser.

Any one in *London* and *Westminster* may have these *Collections* in *Sets* or in *Sheets* as they come out, brought to their Houses, they paying only a penny the *Sheet*: and 'tis hop't that all who like them, will tell their Acquaintance.

London, Printed by *J. Gain*, for the Author *John Houghton*, and is to be Sold at his House, against the *Ship-Tavern* in *St. Bartholomew-Lane*, behind the *Royal Exchange*: By *John Lawrence*, at the *Angel* in *Cornhill*: By *Moses Pitt* at the *Angel* in *St. Pauls Church-Yard*: By *William Cadman*, at the *Popes-head* in the *New-Exchange*: By *Dorman Newman*, at the *Kings Arms* in the *Poultry* And several other Booksellers, 1682.

A
COLLECTION
OF
LETTERS

For the Improvement of
Husbandry & Trade.

TUESDAY, April, 25. 1683.

The Contents.

A General Account of the Goods Imported, Exported, and Exported by Certificate, with the number of Ships entred into, and cleared out from the City of London, from the 1st. of February, 1682. to the 1st. of March, 1683. extracted from the Bills of Entry.
An INDEX to the 1st. Volumn.

A General Account of the Goods Imported, Exported, and Exported by Certificate, &c.

IMPORTED.

A mber rough 150	Ditto Vials 6
Aqua Vita 202	Almonds C 119
Piece 36	Argol C 125
Cask 19	Annotto 131
Anchoves Bar 17	Z

HUSBANDRY,

Barly Pearl C 8
 Huld C 9
 French C 80
 Balls Wash Gross 1
 Barras Ells 7500
 Battery Fats 6
 Babies gr. 8
 Barrilla C 70
 Balsom Artificial 1 6
 Baffs with Gold Flowers 9
 Beeds Amber Bag 1
 Curral 1 167.
 Beer Spruce Bar 8
 Berryes Juniper C 10
 Beanes Bask. 8
 Blacking 1 56
 Buckrams Germ. p. 82
 Buckles Christal C 3
 Buttons Hair gr. 212
 Boxes Spice doz. 10
 Books Cas. 80 1 56
 Borax 1 760
 Birding Pieces 50
 Boxes Birdsneft 1
 Boxes Dreffing lackerd 2
 Bull Rufhes Load 14
 Brifsels Hogs doz. 200
 Bricks 29500
 Bugles 1 115
 Broomes Doz. 1450
 Bone Whale C 13 12
 Cafia Fistula 1 350
 Cream Tartar 1 14
 Coral whole 1 426
 Fragment 1 1795
 Clouts Guiney 4000
 Checks 4 230
 Canvas Spruce Ells 5100
 Cordage C 22
 Cordevants Doz 888
 Copper Tun 14 C 19
 Clap Boards 450
 Copperis green C 55
 Cork C 236
 Chocolet C 9 160
 Cheefe C 10
 Candles Doz 2100
 Candles Wax 16

Caps Doz 121
 Ciprus Birds Bil 25
 Couchenele 1 3548
 Callicoos ps 522
 Callicoos mixt with Silver
 ps 178
 Cute C 2
 Callico Cupboard Cloaths
 25
 Cherquonees ps a half
 Cortex Winteranus 1 28
 Capers 1 370
 Carpets Turkey 7
 Carpets Leather 13
 Carpets 20
 Coach and Collesh 2
 Cotton Baggs 53
 Cocoa C 368
 Currants Sack 218
 Cran-berrys Bar 11
 Coffe C 48
 Cloves 1 452
 Couloers paint A parcel
 Carrabees 1 346
 Coales Scot Tun 48
 Cabinets 1
 Chela 1
 Civit Oun. 142
 Deales 27625
 Duck Holland Ells 11800
 Dornix ps 340
 Dimity Yards 1004
 Diaper Yards 12447
 Durance Yards 28
 Desk Ch lackerd 1
 Eggs Bar. 116
 Effence 1 6
 Elatches ps 3
 Elatches strip'd with Gold
 ps 9
 Fans Wood 90
 Flints for Guns Tun 10
 Bar. 2
 Flints 6000
 Flax C 1772
 Fustick Tun 118
 Feathers Baggs 29
 Feathers Estrig. 1 88

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and TRADE.

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 Figures Allabaster Cas. 3
 Figs Bar. 1
 Fish Stock-titling 10500
 Galls Sacks 189
 Baggs 190
 Galls C 110
 Glasses Drinking 1800
 Glas Window Cas. 76
 Glew C 4
 Girdles Silk-mixt 29
 Gowns Chint 8
 Ginger Baggs 15
 Galbanum 1 700
 Hair Goats 1 550
 Hair Goats Bag 62
 Horns Hart pr 279
 Hops Bag 10
 Hinderlands Ells 300
 Hemp C 50
 Hems loll 50
 Hofe Doz 50
 Thread Doz 50
 Horn tips C 16
 Horn Plates 1300 Doz 78
 Cow 700
 Hoops Iron Tun 9 C 10
 Horses p. Coach 23
 Saddle 3
 Horn Shavings parcel 1
 Hydes Cow and Ox C 40
 Hydes Cow 189
 Iron Tun 321
 Bundles 6
 Old Tun 34
 Doubles Doz 30
 Incles wrought 1 18
 Ince Doz 50
 Juice Lyme Tun 2
 Ink Printers C 14
 Indigo 1 1106
 Ivory wrought 1 25
 Linnen Ells 19346
 German Ells 42830
 Polony Ells 490
 Lace Point Box 2
 Lapis Calaminar. C 12

Lattin Shaven C 7
 Lattin black C 76
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 Chest 868
 Lemons Chest 819
 Baskets 71
 Leather Mask 1 172
 Lawn Steria 2712
 Linnen Cambricks ps 21
 Lead White C 30
 Legs rune 500
 Longes herba 2212
 Litmus Cask 100
 Mader Bailes 113
 Marmalet 1 46
 Mafts 83
 Mace 1 351
 Maps Printed Reams 2
 Matts Bundles 65
 Matts 38
 Manna 1 1334
 Meal Bush. 4
 Metal Bell Fat 2
 Mohaire Yards 222
 Molaffos Cask 144
 Mum Bar. 143
 Marble Blocks 22
 Nutmegs 1 1900
 Neckless Pearl 1
 Neckcloaths Callico mixt
 1130
 Neckcloaths 25817
 Nutmeg Canded 1 24
 Oyl Jar 245
 Tun 10 Gal. 30
 Lynseed Tun 9 three
 Quarters
 Train Tun 4
 Hempseed Tun 10
 Jesseme a parcel
 Oares 1150
 Olives Cask 3
 bhd 21 Bar 418
 Oranges Chest 3515
 Ditto Loole 20200
 Orange and Lemmons
 Chest 280
 Z 2 Ozil-

Ozinbrigs 75650
 Oppoponax l 500
 Orchal C 3
 Olibanum C 12
 Paper Ream 25271
 Ditto Brown Bundle 40
 Demy Ream 10
 Blew Ream 320
 Royal Ream 50
 Painted Doz 6
 Cap Ream 103
 Prunes Box 6
 Prunes cask 11 bar 3
 Pintadoes 2478
 Potash cask 128
 Pipe Staves 3500
 Pibbles Tun 40
 Pitch Last 50 Bar 7
 Peafe Bush 1
 Pistaches l 6640
 Pots Stone Cast 1685
 Prunelloes l 240
 Plates Harness 247
 Pears green 4500
 Dried Bar 6
 Powder Hair l 56
 Plaister Paris Mounts 8
 Pipes Tobacco gr. 320
 Pistol Cases pr 27
 Perfumes Box 1
 Plates Latin single Bar 10
 double and single
 Bar 37
 Pelts Sheep 200
 Pictures 16
 Pallampores 561
 Petticoats China 5
 Pots Iron Doz 61
 Pitch Burgundy C 80
 Quilts Callico 12
 Silk 2
 Raifons Bar 3612
 Raifins C 7
 Basket 204
 Smirna cask 5 bar 1
 Malago pec 224
 Rozin Tun 24

Romals 10
 Rubarb l 120
 Silk wrought Gold and Sil-
 ver ps 835
 Silk wrought India l 86
 Silk Ferret Bundles 2
 Silk wrought ps 96
 Silk wrought Cafes 7
 wrought Bailes 346
 ditto l 5325
 Raw l 11
 Thrown Bailes 6
 Orgazine Bailes 29
 Snuffers Doz 252
 Shavings Hats Sack 1
 Sal Armoniacum l 2800
 Storax Liquida l 4
 Sperma Ceta l 117
 Scamony l 85
 Sena l 900
 Sanguis Draconis l 130
 Storax Calamita l 680
 Seeds Onion C 3 l 21
 Worm C 20 l 106
 Garden C 2 l 38
 Annis C 90
 Mill Bush 24
 Lyne Bush 9
 Lack l 12802
 Pearl 02 5727
 Skins Fox 649
 Kid 51200
 Greys 2039
 Hufs 286
 Cat 516
 Otter 2071
 Beaver 16280
 Ditto Wombs 12
 Buck 3698
 Calve Do 40
 Goat Do 1
 Sheep tann'd Bun 9
 Fletchers Do 36
 Coney Do 103
 Lamb 100
 Fitch 5
 Dog 26

Musquashes 1646
 Raccoone 404
 Wolf 52
 Minks 1131
 Viziers 224
 Seale 2
 Elke 39
 Bear 144
 Squash 1229
 Deer 347
 Mouse 3
 Martin Timber 333
 Timber Ermin 4
 Badger Do. 40
 Skins in Apack 1
 Suckets l 156
 Steel C 368
 Salt wey 105
 Sugar Cask 300
 Sugar Chest 3
 Soap C 45
 Sturgion Cag 9
 Sherbet Box 3 l 20
 Sword Blades Doz. 33
 Syder Tun 12 hhd. 1
 14 Terce
 Stocks Anchor 42
 Staves hoghead 3600
 Scamoti Yards 150
 Stones Querne Last 2
 Mill 2
 Paving Foot 795
 Ditto Number 7000
 Grave 38
 Step 158
 Spar Timber 1750
 Syrrup Alkermes l 120
 Shell Tortoise l 25
 Stuffs Hair ps 24 Yards
 1598
 Snuff l 40
 Scales for Sword, Bund
 1150
 Slude l 1340
 Shellack l 25840
 Silver and Gold Cafes 7

Sheets Callico pr. 4
 Silk India Gown 1
 Silver and strip t. Sufaes 6
 Shoes and Slippers India
 pr. 16
 Saffes Gold 2
 Thread Suiters l 4125
 Outnall Do. 32
 Bridges Do. 2877
 l 224
 Whited Brown l 85
 Toyes Fat 1
 Ticking ps 702
 Tobacco C 1702 hb. 42
 l 5518
 Tiles Pan 7800
 Tiles Gally Foot 600
 Turpentine C 945
 Tar Last 59 Bar 54
 Turbith l 70
 Twist Bandstring Do. 200
 Timber Load 844
 Knees 74
 Balkes 875
 Teeth Elephant C 10
 Thrums Woolen l 100
 Tarras Bar 160
 Tapestry Ells 813
 Thimbles 10500
 Trees Walnut 120
 Tea l 123
 Taffaties Herba 1877
 Vellure Yards 350
 Vermifhelle C 7
 Vermilion l 300
 Viniger Tun 1
 Wine Rhenish Cask 133
 pcs 37 Aum. 2
 Port Tun 16025
 Pipes 272
 Canary Pipes 576
 Florence Chest 73
 Tent Buts 16
 Malago Buts 101
 Cask 5
 Smirna Chest 2
 Sherry Buts 187
 Wool

HUSBANDRY

Wool Sheep Bags 159
 Cotton Sacks 137
 Lamb Bags 6
 Goat Bags 10
 Wood Log Tun 89 C 16
 Gronadilla Tun 1
 Brazil C 110
 Lath Fath. 46
 Wood Box Tun 27 C 2
 Waincoat Leaves 1755
 Water Orange Flower
 Chest 15 Jar 8 Gal 4
 Wyre Latin C 12
 Steel l 4555

Wares Alabaster Boxes 3
 Small Fats 3
 China Parcels 3
 Wood Braziletto Tun 30
 C 10
 Wax Bees C 73
 Yarn Mohair Sac. 14
 Cable C 61
 Worsted l 1109
 Linnen Fats 10 Bag 5
 Cotton Bales and Fans
 guts 193
 Ditto Cotton l 2750

EXPORTED.

A Quavita hb. 15 Cask 1
 Allum C 45
 Apples Bush. 3
 Apparel Chest 1
 Almejo Bush. 28
 Backs for Chairs 8
 Bottles Glas 5506
 Bras C 25 l 28
 Buttons Hair gros 9
 Silk Parcel
 Bayes Minicin ps 264
 Double ps 2408
 Single ps 105
 Books C 24 l 79
 Beanes qu. 1
 Beer Tun 126
 Bacon Fitch 88
 Bisket C 340
 Block Marble 1
 Bridles Do. 65
 Butter Firk 203
 Blankets pr. 70
 Brandy Cherry Gal 38
 Buckles Stone parcel 1

Bellows Smith pr. 1
 Boxes Coloured 100
 Dressing 1
 Bones Ox 1600
 Brushes 2
 Bedsted 1
 Bucks 1000
 Cloth Spanish ps 948
 Long 392
 Short ps 187.
 Rash ps 54
 Woollen ps 535
 Dozens single 32
 Dozens Double 54
 Oyled Yard 24
 Hair ps. 3
 Cotton Goads 9984
 Chairs Doz. 96 8
 Cain 14
 Charriots 2
 Cheefe C 409
 Charcoal Bush. 24
 Chocolet C 6 qu. 3

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and TRADE.

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 Copper and Bras C 1300
 Copper C 48 l 28
 Copperis Tuns 386 C 23
 Coaches 4
 Couches 13
 Clocks 4
 Clockwork C 15
 Clock Cafes 12
 Coales Chald 245
 Caps Monmouth Doz 42
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 Caps plain 3
 Candles Doz 785
 Colours Paint C 2
 Cards for Wool Doz 8
 Cards Game Doz 86
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 Dornix ps 88
 Drums 28
 Flannel Yards 3343
 Frames Doz 1
 Fringe Gold and Silver
 Oz 60
 Flower Bush. 44
 Fanns Doz. 4 and a half
 Eustians Ends 129
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 Glasses and Earthern Ware
 3940
 Prospect A parcel
 Looking 33
 Drinking 2875
 Window Chest 14
 Gloves Doz. 75
 Cotton Doz. 2
 Glew C 59
 Gold Forreign 02 3609
 Guns Iron 40
 Gowns India 6
 Haberdashery C 54 qu. 1

Hose Thred Doz 46 and
 half
 Wool Doz 3861
 Worsted Doz 1096
 Cotton Doz 7
 Hoops Bar 73620
 Hops C 74
 Hats Beaver 30
 Castor Do. 125
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 Horses 10
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 Gold and Silver
 l 287
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 Wrought, and Shoes
 l 864
 Lead Fodder 4500
 Black l 1900
 Red C 6
 Linnen English ps 6
 Lincy Woolsey ps 207
 Leaves Lanthorn 2000
 Lampreys 25000
 Lynseed qu. 49
 Lasts Shoemakers Do 13
 Mum Bar 23
 Meal Wheat qu. 7 bush
 Oats qu. 102 bush
 19
 Mapps Printed 56
 Mills for Syder 6
 Nails C 270
 Stubs

HUSBANDRY

Stubs C 58
 Nets Fish 1
 Oyl Linseed Gal 30
 Organs old 1
 Perpets & Serges ps 1870
 Perpets ps 2928
 Pictures 28
 Pieces of Eight ps 53265
 Peafe qu. 1 Bush 21
 Pewter C 56 qu. 3
 Pipes Tobacco gross 475
 Pots Earthen 1425
 Plate wrought Oz 36
 Perriwigs 81
 Powder Gun C 633 qu. 2
 Penniltones 2
 Pomatum 1
 Paper Brown Ream 42
 Printed Ream 2
 Powder blew l 139
 Presses 1
 Paltboard gross 10
 Petticoats 3
 Ruggs 13
 Irish 130
 Ribbon Gold and Silver
 Yard 47
 Says ps 1301
 Says and Chennes 12
 Serges 2374
 Silk wrought 2364
 Thrown l 365
 Walte l 1970
 Silk Stuff Yards 20
 Shovels 34
 Shoes l 3931
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 Stuffs ps 1918
 Scretore and Drawers 6
 Shot C 997
 Silver Foreign Oz 282242
 skins Calve Do 1285
 Sheep 140
 Coney 1080
 Coney roundings 115
 Beaver 8

Goat Drest Do. 14
 Otter 30
 Fitch 94
 Cat 100
 Shreds of Fox Tails 200
 Sugar Loaf C 813
 Stands 2
 Saddles 232
 Shot C 971 qu 1
 Stones Fire Load 20
 Skreens 2
 Shavings Lanthorn l 12
 Scoops Do. 5
 Starch C 4
 Syder Gal 459 hb. 57
 Sope Cask 6 C 1
 Seed Clover 54
 Stone grind Chl 4
 Spectacles and Cafes A par.
 Socks Cotton Do 1
 Socks and Caps Do. 26
 Tables 7
 Trunks Nests 25
 Tin C 528
 Tow Do 1
 Ticking ps 5
 Tankards Silver 2
 Violins Box 1
 Varnish l 48
 Wool Do 4
 Cotton l 1705
 Spanish Balls 7
 Lambs C 15
 Coney l 675
 Wool Red Bag 3
 Beaver l 200
 Weld C 1 l 56
 Wood C 124
 Wax hard l 2466
 Wax Bees C 17
 Ware Upholsters a parcel
 Tin A parcel
 Turners A parcel
 Apothecary C 29
 Confectionary l 16
 Earthen 4233

and TRADE

Waters Strong Gal. 733
 Sweet Box 1
 Wood Olive Case 2
 Whiting C 10
 Wheelers Cart pr. 3

Coach pr. 2
 Yarn Mohair l 39639
 Cotton l 10 839

EXPORTED by Certificate.

Almonds C 4 l 56
 Aquæ Vita Gal. 1075
 Argol C 3
 Arcitolatiz l 800.
 Barras Ells 550
 Barrilla C 804
 Beads Coral l 538
 Bugles great l 700
 Buckrams 8
 Brazelet Tun 13 C 1
 Bone Whale C 4
 Camlets Yards 65
 Cambricks ps. 59
 Demy 12
 Camphir l 2207
 Canvas Spruce. El. 4700
 Cocoa C 159
 Cochenel l 1540
 Courrance C 1842
 Cinamon l 460
 Callicoës long ps. 60
 ps 20172
 Checks 58
 Cloves L 93
 Coffee C 34 qu. 2
 Capers l 9750
 Copper l 98
 Caffia Fistula l 4052
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 Chercolees ps 40

Coral Fragment l 91
 Whole l 183
 Cambogium l 1116
 Chandenes ps 20
 Contra Yerua l 50
 Cordivants Doz. 60
 Duck Holland Ells 2805
 Diaper Yards 254
 Dates C 18
 Diptimus l 600
 Figs C 322
 Fish Stock Titling 9000
 Fulltick C 4
 Galbanum l 242
 Gauls C 1604
 Gallinal l 1000
 Gumanimæ l 10950
 Tragant l 2550
 Lack l 100
 Gutta l 50
 Ginger dry C 100
 Green l 3502
 Gingams ps. 39
 Hides red par. 1444
 Cow 5351
 Guiny 300
 Harfords Ells 1500
 Hemp C 40
 Herba Longes 200
 Incle l 89
 Wrought Doz 12
 A a

HUSBANDRY

Indigo l 6238
 Iron Tuns 77 C 50
 Iron Spanish Tun 9 and a half
 Lawns Sletia ps 1222
 Linnen Ells 3247
 Scotch Yds. 100
 German Ells 88284
 Litmus l 40
 Lapis Tutia C 25
 Lignum Vitæ C 20
 Musk Oz 1180
 Cod Dors 160
 Mace l 32
 Mohair 1028
 Muffin ps 8
 Nayles C 8
 Neckcloths Callico 690
 Neckcloths 2000
 Cloths single 240
 Nilles ps 320
 Nehallowes ps 42
 Nux Vomica l 1100
 Nutmegs l 156
 Oyl Tun 27 and a quarter
 Ozenbrigs Ells 31788
 Oculus India l 1800
 Opium l 227
 Oyl Olive Gal 216
 Sallat Gal 12
 Olibanum C 112
 Pintadoes 130
 Pepper l 16470
 Pallampores ps 5
 Penaffes ps 65
 Polium Montannm l 500
 Plates double and single 2300
 Raifons C 102
 Rice C 73
 Romals ps 535
 Rangoes ps 200
 Rubarb l 214
 Sugar White C 299
 Brown C 6559
 Silk Persian ps 1
 Raw l 22438
 Wrought l 1033
 Wrought with Silver

and Gold ps 6
 Soap hard C 119
 Soap C 46
 Scamony l 604
 Sanguis Draconis l 352
 Shell Tortois 972
 Sal Armoniacum l 500
 Stick lack C 80
 Senna l 450
 Seed Pearl Oz 200
 Worm l 168
 Commin l 10
 Caffroway l 56
 Fennel l 14
 Annis C 56
 Stuffs Guinia ps 50
 Silver Quick l 374
 Shoemack C 7
 Skins Bear 17
 Fox 462
 Mincks 406
 Otters 207
 Gray 1080
 Viffers 260
 Cat 200
 Woolf 97
 Racoon 77
 Timber 6
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 Bermudas l 930
 Tykes 18
 Tea l 250
 Tar Last 5 Bar 340
 Termerick l 7986
 Wine Rhenish Fats 32
 Port Tun 24 hhd 2
 Madera Pipes 4 hhd 1
 Canary Pipes 18
 Sherry Buts 7
 Allicant Buts 28
 Wares China par. 5
 Wax Bees C 231
 Wood Log Tun 764
 Wood Baselet Tun. 17

Box

and TRADE

Box Tun 14 C 4
 Red C 5
 Wyre Latin C 5
 Steel l 450
 Wool Spanish Bags 54

Cotton l 74162
 Yarn Mohair Sacks 7 and l 74162
 Cotton l 86239

Ships Inward.

From
 A Mterdam 3 Ships.
 Allicant 1
 Barbadoes 3
 Bridges 3
 Bremen 1
 Belfast 1
 Canaries 2
 Cowes 1
 Cadix and Leghorn 1
 Cadix 2
 Dunkirk 3
 Dort 2
 Downs 1
 Dublin 1
 Diep 3
 Figara 1
 France 1
 Frezland 1
 Gallitia 1
 Gottenbergh 1
 Haure de Grace 1
 Hamburgh 1
 Jamaica 1
 Lisbona 2
 Limerick 1
 Malago 2
 Middleburgh 1
 Madera 1
 New York 1
 Norway 1
 New-England 1
 Ostend 2
 Oporto 26
 Rotterdam 7
 Sivil 7
 Scotland 1

St. Sebastian 1

Scanderon 1
 Favilla 1
 Virginia 1

In all, Ships 93

Ships Outward.

A Mterdam 3
 Bourdeaux 3
 Barbadoes 4
 Bridges 1
 France 2
 Farro 1
 Flanders 1
 Gottenbergh 4
 Galitia 1
 Guiney 5
 Garnfey 1
 Gaunt 2
 Hamburgh 3
 Ireland 2
 Jamaica 2
 Lisbon 2
 Middleburgh 1
 Maseland Sluce 1
 Meuis 2
 Oporto 3
 Rotterdam 3
 Roan 3
 Sound 1
 St. Laurence 2
 Scotland 6
 Streights 1
 St. Mallos 1
 Zealand 1
 In all, Ships 62.

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0427

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Advertisements.

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A
COLLECTION
OF
LETTERS

For the Improvement of

Husbandry & Trade,

By JOHN HOUGHTON,
Fellow of the Royal Society.

The Second VOLUME.

London, Printed by J. Gain, for the Author John Houghton, and is to be Sold at his House, against the Ship-Tavern in St. Bartholomew-Lane, behind the Royal Exchange: By John Lawrence, at the Angel in Cornhil: By Moses Pitt at the Angel in St. Pauls Church-Yard: By William Cadman, at the Popes-head in the New-Exchange: By Dorman Newman, at the Kings Arms in the Poultry. And several other Booksellers, 1683.

A COLLECTION

OF LETTERS

AND DISCOURSES

BY JOHN HORTON

FELLOW OF THE ROYAL SOCIETY

THE SECOND VOLUME

LONDON, Printed by G. G. for the Author, in the Strand, 1733.

and TRADE.

To the Reader.

Reader,

FOR a reason hereafter mentioned, I have concluded this my first Volume within Twenty four Sheets; which yet, however small it may appear, is a Miscellany of such various useful Subjects, as will in the Theory justify it self to all Philosophical thinking Men, and in Practice, I doubt not, highly contribute to the Advance of the Wealth and Honour of our Countrey. To rehearse now the particular Tracts contained therein; as for instance, The Improvement of Barly, Preventing of Smut, Advantage of Clover, Exportation of Corn, Bank of Credit, East-India and Guiney-Companies, Enclosures, Linnen-Manufacture, &c. Would in effect be to transcribe the Index annexed to the last Sheet; which I therefore choose to refer thee to: and if the former Performance is at all acceptable, I dare without Vanity promise thee better Entertainment in the succeeding Volumes. For I have now a full Prospect and Comprehension of my Argument, and so shall be out of danger of Publishing any thing impertinent or trivial; I engage likewise to be so careful of Style, as to maintain it to a Degree above Contempt; and moreover, that these Papers for the future may not be barren of useful Argument; I have Printed a Letter, which, as I shall be recommended, I design to send to ten or twenty Thousand ingenious Persons, from whom, what account I receive, tending to the Increase of Husbandry or Trade, shall be faithfully Published, either with, or without their Names, as they please to signify to me.

With all my Correspondents I shall deal fairly and ingeniously; professing my self, excepting only some necessary Remarks and Transitions, to be meerly Editor; and I shall make every twenty four Sheets a Volume, that so any Person may more cheaply purchase those Parts which he is most concerned in.

A Token

A
Token for SHIP-BOYS,
OR

Plain-Sailing,

Made more plain and short than usually, in three particular Methods.

1. **B**Y Ordinary Numbers, so plain and easie, that by two little Tables that may without difficulty be comprehended in a small Octavo Leaf, a very Novice in *Arithmetick* may with much speed and exactness find the particular Differences of Latitudes and Departures of any Courses and Distances, together with the general (or total) Distance of Latitude; the Departure, Course, and Distance belonging to any Traverse, without any other Traverse-Table, Book, or Instrument whatsoever.

2. By Artificial Signs, Tangents, and Logarithms of Numbers, doing all the same Work in a new Method, together with the Reduction of Leagues and Miles of Departure into Degrees and Minutes of Longitude.

3. By Compasses and a cheap Scale, by help whereof, and a few Counters, one that cannot read may be taught to do most of the same Work in a Mechanical way, with much speed and competent exactness.

In a Letter to the Publisher from Adam Martindale,
a Lover of the *Mathematicks*.

To

To Mr. John Houghton, Fellow of the
ROYAL-SOCIETY.

Honoured SIR,

HAVING done some little at your Request towards the Improvement of Husbandry, I was sorry to think I could no way assist in order to the Advancement of Trade: but considering with my self, that as Navigation is the Soul of Trading with all Transmarine People, so Skilful Seamen in a due Proportion for Number and Quality, are the Bones and Sinews, as Morned Merchants are the Flesh and Blood, and well-Rigged Men of War, the Trunk and tearing Teeth of this great Elephant: I made account that Trading might well gain some little by it, if Plain Sailing, which is the Seamans A. B. C. were rendered more welcome to our Frie of Youngsters by such Methods as these Papers exhibit, being all designed to be Cheap, Short, Sound and Plain: As to the two former, Cheapness and Shortness, I appeal to any Man that hath Eyes and Brains; for the third, to all Artists; and for the fourth, to such of them as will take the pains to try them practically in the Instruction of Youth; and in the meantime to my Scholars, whereof some are (for their time) notable Seamen, others in a way in order thereunto: One of them being a Person of Honour, and resolved to serve his King and Countrey in Maritime Affairs (in due time) with his notable brisk Parts and Spirit; being by his Occasions summoned up to London before I had time to prepare him sufficiently, writes thus to me.

SIR, I would not omit the first opportunity to give you thanks for your Care in instructing me in so good

HUSBANDRY

good a Method, and I do not question, if I had stayed, but that I might have received as much Advantage from you as I can in this Place, for I find your Method, according to my Apprehension, to be more profitable, &c.

And yet this young Nobleman was instructed by me only in the second Method, which of the three has the most of Difficulty, and then more than now: for neither the first nor third, nor the Directive Figures and Letters in the first Table upon every Point, nor the Rules referring to them (which belong to all those Methods equally) were before our parting so much as thought of by me. But having had Experience for these many years of the Logarithmetical way, and being assured that the other two agree with it, I have sent you altogether, hoping they may be of more publick Advantage (if carefully Printed) than any Mathematical Contrivance of mine that ever yet saw the Light: And however, desiring to be furnished (without the pains of Transcription) with some Copies for the use of the Friends and Schollars of

S I R,

Your Humble Servant,

A. Martindale.

Concerning

I would not omit the first opportunity to give you thanks for your Care in instructing me in the

Concerning Plain-Sailing.

When a Ship Sails from any one Place to another, four things are considerable, whereof two are given, the other two required. The given Things are,

- 1. The Distance Sailed in Leagues or Miles, found by the Log-line, or otherwise.
- 2. The Course answering to some Rhomb or Point of the Compass, (or part thereof) as when we say, it sailed South South, East 51 Leagues: 51 is the Distance, and S. S. E. is the Course. Where note, that though Rhombs be Spiral-lines upon the Globe, winding by little and little towards the Poles: in such short Distances as we are concerned in the Deviation, is so little from Strait-lines, that we consider them as if they were perfectly Strait.

The Things required, are;

- 1. The Difference of Latitude, that is, how far in any Measures, as Miles, Leagues, &c. the Ship is gotten more North or South than the Place is from which she set Sail: for which, throughout this Paper this is the Mark, D. L.
- 2. The Departure, that is, how far the Ship is more East or West than the Place whence she sailed, reckoned by the same Measures that the D. L. is. The Characters for Departure being S. E. or Dep.

Concerning which take these Observations.

- 1. If a Ship sails directly North or South, the whole Distance sailed is D. L. without any Departure.

HUSBANDRY

2. If it sail full East or West, the whole Distance sailed is D.E. without any D.L.

3. If it sail North-East, South-East, North-West, or South-West, the D.L. and D.E. are equal, and each of them less than the Distance.

4. In all other Courses save those eight aforementioned, the D.L. and D.E. are unequal, and each of them (considered singly) less than the Distance.

5. If its Course be nearer to the North or South Point than either the East or West, the D.L. is greater than the D.E. But contrarily, if the Course be nearer the East or West Point than either North or South, the Dep. is greater than the D.L.

Which last Note is of singular use, not only to find out D.L. and Dep. but also Courses and Distances in some Cases, as will hereafter appear plainly.

In the Interim take notice of these following Tables.

A Table of Rhombs or Points of the Compass.

North.		East	
N. by W. 1. DL. N. DE. W.	N. by E. 1. DL. N. Dep. E.	W. by S. 1. Dep. W. DL. S.	E. by S. 1. DE. E. DL. S.
N. N. W. 2. DL. N. DE. W.	N. N. E. 2. DL. N. DE. E.	W. S. W. 2. DE. W. DL. S.	E. S. E. 2. DE. E. DL. S.
N. W. by N. 3. DL. N. DE. W.	N. E. by N. 3. DL. N. DE. E.	S. W. by W. 3. DE. W. DL. S.	S. E. by E. 3. DE. E. DL. S.
N. W. 4. DL. N. = DE. W.	N. E. 4. DL. N. = Dep. E.	S. W. 4. DE. W. = DL. S.	S. W. 4. DE. E. = DL. S.
N. W. by W. 3. DE. W. DL. N.	N. E. by E. 3. DE. E. DL. N.	S. W. by S. 3. DL. S. DE. W.	S. E. by S. 3. DL. S. DE. E.
W. N. W. 2. DE. W. DL. N.	E. N. E. 2. DE. E. DL. N.	S. S. W. 2. DL. S. DE. W.	S. S. E. 2. DL. S. DE. E.
W. by N. 1. DE. W. DL. N.	E. by N. 1. Dep. E. DL. N.	S. by W. 1. DL. S. Dep. W.	S. by E. 1. DL. S. DE. E.
West.		South.	

In whole Distance sailed is D.L. without any Dep.

and TRADE

In this Table the Point of Intersection near A. represents the Place whence the Ship sailed; the down-right Line from North to South, the Meridian of that Place; and the Traverse-line from North to East denotes that Parallel to the Equinoctial, that the Place whence she sailed is situate under. The Extremities of the Lines point out the four Cardinal Points or Rhombs of the Compass, East, West, North and South. The other intermediate Points being named in order as they stand on the Mariners Compass. The main use of which Table is this;

Knowing the former Marks for Difference of Latitude and Departure, and that E. stands for East, W. West, N. North, and S. South, find the given Course in the Table, and that which followeth its Name, satisfieth you of three things;

1. How many Points (1, 2, 3, or 4.) your Course is from the next Cardinal Point, by the Figure immediately following.

2. Whether the D.L. be N. or S. and the D.E. whether E. or W. by the Characters next After the Figure.

3. Whether D.L. or D.E. be greater by their Order, for the greater is ever named first, and the less after.

As in Example. If the Course be S. E. by E. by looking it in the Table we find it to be three Points from the next Cardinal Rhomb, Viz. E. for so the Figure 3, next after its Name in the Table tells you. The D.E. is E. and the D.L. is S. and the D.E. is greater than the D.L. as the order wherein they are set down shews.

180000	100000	100000	100000	100000
100000	100000	100000	100000	100000
100000	100000	100000	100000	100000
100000	100000	100000	100000	100000

A Table

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 II. Table of Sines, Cosines, Tangents, &c. fitted to every quarter of a Point from 1 quarter to 4 Points (inclusive) which are all that we need in this Method of working.

The First Part of the Table

R	Q	DL & DE for 1	A. N.
1	1	488	9988
1	2	978	9952
1	3	1466	9891
1	4	1951	9808
2	1	2427	9701
2	2	2902	9570
2	3	3368	9416
2	4	3827	9239
3	1	4274	9041
3	2	4713	8820
3	3	5141	8577
3	4	5556	8314
4	1	5955	8031
4	2	6343	7731
4	3	6715	7410
4	4	7071	7071

The Second Part of the Table

D	M	Ar. Sines	Ar. Cosines	Ar. Tangen	Ar. Cotang
2	48	8. 688892	9. 999481	8. 689381	11. 310619
5	37	8. 990560	9. 997910	8. 992750	11. 007250
18	26	9. 166307	9. 995278	9. 171029	10. 828971
15	15	9. 290236	9. 991574	9. 298562	10. 701338
14	03	9. 385192	9. 986899	9. 398383	10. 601617
16	52	9. 464516	9. 980904	9. 481712	10. 518288
19	41	9. 527400	9. 973852	9. 553548	10. 446452
22	30	9. 582860	9. 965615	9. 617224	10. 382776
25	18	9. 630792	9. 956208	9. 674584	10. 325416
28	07	9. 673268	9. 945463	9. 727805	10. 272195
30	56	9. 710997	9. 933369	9. 777628	10. 222372
33	48	9. 744739	9. 919846	9. 824892	10. 175108
36	33	9. 774899	9. 904898	9. 870601	10. 129999
39	22	9. 802282	9. 888237	9. 914044	10. 085956
42	11	9. 827049	9. 869818	9. 957231	10. 042769
45	00	9. 849485	9. 849481	10. 000000	10. 000000

This

and **TRADE**

This Table is divided into two Parts, whereof the first Part is all that I shall commend to the present consideration of my young Seaman, that understands nothing of Logarithms, but intend to speak a little for the use of them that are versed in such Things, towards the end of this short Discourse.

In the first part of the Table are only five small Columns, the first and second are marked at the top, R. for Rhombs, and Q. for Quarters; where they begin with 1 Q. and with 4 R. For though the famous Sturmy (as I remember) affirmeth, that never any man steered nearer than to half a Point; yet because Quarters are mentioned in Traverses, I have made the Table twice so large as it needed to have been, upon that Supposition, that all seeming ground of Complaint, for want of Exactness, might be prevented. In the third and fourth Columns you have the Difference of Latitude and Departure answering to one single League or Mile, or other measure upon every Point, and Quarter-Point in the Table; and in the fifth, noted at the head with A. N. (that is, Angular Numbers) you have such Numbers as will readily help you to find the Angle of the Course (reckoned from the next Cardinal Point, E. W. N. or S.) the D L. and D E. being given. I choose rather to give these plain Names to those Columns, which my young Seaman is liker to understand, than to tell him of Natural Sines, Cosines and Tangents, and how these agree and disagree with such as he may find in some Mathematical Books, which to him would be perfect Gibberish. Let us then without any more ado, come to the Uses; and the first great One is as followeth:

1. Part. Having the Course and Distance sailed

B 2

to find D.L. and D.E. look the *Course* given in the former *Table*, and by direction of the *Figure* immediately following its Name, find it in the first (or first and second) *Column* of the second *Table*, and taking out the numbers over against it in the third and fourth *Column*, multiply them severally by the *Distance* given, and from both *Products* separate four figures towards the *Right Hand*, with a *prick* of your *Pen*, a *short line*, or any other *Distinction*; so shall those *Products* be one the D.L. and the other D.E. answerable to that *Course*, accounted the number before the *Pricks* or *Lines* to be whole *Numbers*, and those after them *Decimal Parts*.

But then to know whether is D.L. and which the D.E. and whether D.L. be N. or S. and D.E. E. or W. the viewing again of your *Course*, that which follows it in the same line, must inform you.

Examples to make this *Plain*.

Example 1. If a *Ship* sail *West-North-West* 43 *Leagues* or *Miles*, I find in the first *Table*, that *W. N. W.* is attended by the figure 2. (shewing it is only two *Points* from the next *Cardinal Point*, *Viz. W.*) and looking 2 *Rhomb*s in the first *Column* of the second *Table*, I find over against it 3827 and 9239. In the third and fourth *Column*, which being multiplied severally by 43 (the *Distance* given,) and four *Figures* cast off towards the right-hand, they give 16.4561 and 39.7277, whereof one must signifie D.L. and the other *Dep.* And viewing again my *Course* in the first *Table*, I find the D.E. is W. and D.L. N. and that the D.E. is greater than D.L. (being first named

3827	9239
43	43
164561	27717
15308	36956
164561	397277
DL. N.	DE. W.

in that *Course*) and therefore I mark 39.7277 for *Dep. W.* and 16.4561 for D.L. N. as in the *Margine*.

Examp. 2. Suppose the second *Course* be W. by S. 51 *Leagues*, the *Figures* following its Name in the first *Table*, directs me to 1 in the first *Column* of the second *Table*, and that to 1951 and 9808 in the third and fourth; which being used as in the last *Example*; that is, multiplied by the *Distance*, and the *Rhomb* in the first *Table* again consulted, I find the D.L. to be 9.9501 S. and the D.E. 50.0208 W.

1951	9808
51	51
99501	500208
DL. S.	DE. W.

Examp. 3. Suppose the third *Course* be directly N. 35 *Leagues*. Then by the first *Rule* before the first *Table* 35, will be all North D.L. and no *Departure*, which I thus mark.

Examp. 4. Suppose she be carried by a *Current* directly East 29 *Leagues*. Then by the second *Rule* before the first *Table*, the D.L. will be 0. and the *Dep.* 29. E. as here I have set it in the *Margine*.

Examp. 5. Suppose she bears up N. W. by W. N. 11 *Leagues*. I find N. W. by W. (by the first *Table*) to be three *Rhomb*s distant from the next *Cardinal Point*, *Viz. W.* and $\frac{1}{2}$ *Point* more.

0	29
DL.	DE. E.

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N. makes it 3 Rhombs and 2 Quarters which sought in the first and second Column of the second Table, directs me to 6343 and 7731, which severally multiplied, gives 70.4073 and 85.8141. And now consulting my Table, I find that N. VV. by VV. is but three Points, from the West, consequently N. VV. by VV. $\frac{1}{2}$ N. can be but 3 points, 2 quarters, which must needs be nearer to W. than N. (N. W. which is 4 points, being the exact middle) and consequently by the last Rule before the first Table 70.4073 denotes D.L. N. and 85.8141 D.E. W.

Examp. 6. Then supposing the Sails South-West $\frac{1}{2}$, West 19 Leagues; Finding S. W. in first Table, and following it (shewing that it is equally distant 4. Points both from S. & W.) I conclude that $\frac{1}{2}$ more to the Westward, being abated from 4 Points, her Course being only 3 Points (or Rhombs) and $\frac{1}{2}$ from the West, whereas it is 4 Rhombs and 3 Quarters from the South; and this tells me before-hand that the departure West will be greater the D.L. S. and to try what they will be, I knowing the Numbers 5955, and 8033, to be answerable to 3 Points, 1 Quarter in the second Table, multiply them by 19, and find their Results to be 11,3145 D.L. S. and 15.2627 D.W.

Examp. 7. Suppose she be driven by a contrary Wind, (notwithstanding indeavours to bear up against it) almost a quite contrary

6343	7731
III	III
6343	7731
6343	7731
6343	7731
70.4073	85.8141
DL. N.	DE. W.

5955	8033
19.	19.
5.3595	72297.
5955.	8033.
113145.	15.2627
DL. S.	DE. W.

and TRADE.

contrary Course, viz. N. E. by N. $\frac{1}{2}$ N. 11 Leagues. It appears by the first Table, by Inspection, that N. E. by E. is but 3 Points from N. and therefore $\frac{1}{2}$ nearer to the N. brings us within 2 points and 3 quarters; and over against 2 Rh. 3 Q. in the second Table, I find 5141. 5141. 8577. and 8577. which upon Multiplication, give me 5.6551 D.E. and 9.4347 D.L. N. comparing the Products with the last Rule before the first Table. Having thus showed in all necessary Varieties, how the D.L. and D.E. may be truly found of every single Course in a Traverse; The next work must be to bring them all into one, that the D.L. and D.E. of the whole Traverse may appear: To effect which make a Table with 7 Columns, in the first whereof put Letters representing the particular places, where and whither the Ship sailed; In the second, the Courses; in the third, the Distances, and in the other four, noted with E. W. N. S. the D.Ls. with Deps. found, that is E. D.E. in the E. Col. W.D.E. in the W. Col. And so likewise N. D.L. under N. and S. D.L. under S.

[But observe by the way, that you need not to put down all the Decimal Fractions (for such they be) which you were directed to separate from the rest of your Products by a prick or short Line; but only two of them after every prick, for the other two are very inconsiderable.]

Having

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Having thus set them in their due order, sum up every Col. and observing whether the sum of the East or West departure is Less, subtract it from the Greater; and do the like by the sums of the N. and S. Dist. of Latitudes: So shall their differences or remainders show the D E. and D L. of the whole Traverse, as appears in this Example, being the computation of the 7 Courses before-mentioned.

Places.	Courses.	Leag.	E.	W.	N.	S.
1. From A. to B.	W. N. W. 43	43	39.72	16.45	09.95	
2. From B. to C.	W. by S. 51	51	50.02			
3. From C. to D.	N. 35	06.00	00.00	35.00	00.00	
4. From D. to E.	E. 29	29.00	00.00	00.00	00.00	
5. From E. to F.	N. W. by W. 71	71	85.81	70.40		
6. From F. to G.	S. W. 21	19	15.26		11.31	
7. From G. to H.	N. E. by E. 21	50.65		131.28		
			156.16	21.26		
			34.65		140.02	

Here it is apparent, that in the whole Traverse the Ship is more Northerly by more than 110 Leagues than the place A. and more to the West by 156 Leagues and more.

Note,

and TRADE

Note, That in all these 4 Columns we sum up the Leagues and Parts, as if they were all whole Numbers, and subtract likewise as if they were so, only keeping Leagues and Parts distinct by pricks: And if any one that knows not how to do it, be desirous to understand how to turn such Parts as these into Quarters of Leagues, or Miles (if the measure be given in Miles) let him Multiply any such Decimal Parts by 4, and if the Product consist of any more Figures, than those Parts did before they were so multiplied, the first Figure in the Product shows the number of Quarters; but if not, then the Decimals contained no quarter in them. Thus the sum of the East Column being 34 Leagues, and 65 parts of a League, if you multiply 65 by 4, the Product will be 260, which being a number of 3 Figures, reckoning the Cypher, as in these cases we always must) whereas 65 before it was multiplied, consisted only of two; the first Figure of 260, viz. 2, shows that 2 Quarters were contained in the 65, but in the differences remaing by Subtraction, 16 belonging to 156 and .02 belonging to 110, there is no quarter contained; for, 16 multiplied by 4, is but 64, and .02 multiplied by 4, is but .08 neither of which consist of any more Figures than they did before they were multiplied. In the same manner Decimal parts of Miles may be brought into Furlongs, being multiplied by 8, and Leagues into Furlongs by multiplying them by 24.

2. The next work that this Table is useful for, is to direct to find the Course, the D L. and D E. being given, which may be thus done: Annex four Cyphers to the lesser of them, and divide by the greater, then seek the Quotient or next Numbers you can find to it in the fifth Col. of the

C

second

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Tangents; and therefore I shall be brief in my Notes concerning it, being these,

1. Here are all the Artificial Sines, Cosines, Tangents, and Cotangents, with the Degrees and Minutes of the Quadrant prefixed to them, answering to all Points and Quarters, from 1 Quarter to 4 Points, which if the Artist will but examine once by a good Table, to correct the Errors, if any should be committed by Transcription or Printing, he hath all the Artificial Sines, Cosines, Tangents and Cotangents, before him in this little compass, that there is any occasion for in working a Traverse; yea, the Cotangents might be spared, save to make the Table more compleat and useful to other ends.

2. According to this short Method there is no occasion to mention any more than 4 Points; no Course being more than so from the next Cardinal Point.

3. Whereas Youths are oft sore puzzled in their Conceptions about their Rules, in the common way of teaching, viz.

As Radius, to the Distance; so is the Sine to D.E. Not easily apprehending (as I have sufficient experience) when and why the D.L. and D.E. must be taken as the work produceth them in some cases; and when, and for what Reason they must be counter-changed in others. The first Table, with the Rule next before it, and the Practice upon them hitherto, (which is as applicable to the way of working, as the former) makes that Case so plain, that without suppine negligence, an Error that way can scarcely be committed.

4. To

and TRADE. 21

4. To find the D.L. and D.E. (the Course and Distance being given, and former Rules understood) add to the Artificial Sine of the Course, the Log. of the Distance, and from their Sum, either subtract 10.00000, or cast 10. from its Index; Do the like also by the Cosine, so shall the remainders of those Sums be the Logarithms of the D.L. and D.E. which that you may the better understand, and see the agreement of this work, with the former, I shall go again over 5 of the 7 Examples foregoing; for two of them, viz. the 3d and 4th need not farther Consideration, till they come to be placed in Table.

Example 1. W. N. W. 43 Leagues.

Sine 22. d. 30. m.	9.582840	Cosine 22. d. 30. m.	9.965615
Log. 43.	1.633468	Log. 43.	1.633468
<hr/>		<hr/>	
D.L. N. 16. 45	1.216308	D.E. W. 39. 72.	1.599083

Example 2. W. by S. 51 Leagues.

Sine 11. d. 15. m.	9.290236	Cosine 11. 15.	9.991574
Log. 51.	1.707570	Log. 51	1.707570
<hr/>		<hr/>	
D.L. S. 9. 95	0.997806	D.E. W. 50. 02.	1.699144

Example 5. N. W. by W. 111 Leagues.

S. 39. 22. 9.	802282	Cosine 30. d. 11. m.	9.888237
Log. 111.	2.045323	Log. 111.	2.045323
<hr/>		<hr/>	
D.L. N. 70. 40.	1.847605	D.E. W. 85. 81.	1.933565

Example 6. S. W. 19 Leagues.

S. 36. d. 33. m.	9.774899	Cos. 36. d. 33. m.	9.904898
Log. 19.	1.278753	Log. 19.	1.278753
<hr/>		<hr/>	
D.L. S. 11. 31	1.053652	D.E. W. 15. 26.	1.183651

Example

HUSBANDRY

Example 7. N. E. by N. 4 N. 11 Leagues.
 Sine 30. 36. 9. 933369
 Log. 110. 02. 2. 041471
 DE. E. 5. 65. 0. 752390. D.L. N. 9. 43. 0. 974762

This you see here, there is a perfect agreement between this Method and the former, and consequently if these Examples, together with those two that needed no working, were made into a Table, and summed up, and subtraction made as before, the DE. and DE. of the whole Traverse would be as before, viz. 156. 16 L. DE. W. and 110. 02 L. DL. N.

5. Having thus obtained the DE. and D.L. This is the Rule to find the Course,
 As the greater to the Log. 110. 02. 2. 041471
 less, so is the Radius Radius. 10. 000000
 to the Tangent of the Course. 12. 041471

So adding Radius to Log. 156. 16. 2. 193569
 the Log. of 110. 02. and 9. 847902
 subtracting thence the Log. of 156. 16 and
 the remainder being 9. 847902, being sought amongst the Tangents in the second Table, I cannot find it exactly, but I see it is more than 9. 824892, which answereth to the 33. d. 45. m. or 3 Rhombs, and less than 9. 870001, which is over against 36. d. 33. m. or 3 Rhombs, and 1 Quarter. So I take it for 3 Rhombs to which it is near, though somewhat more, and conclude it to be about N. W. by W.

6. Having thus the Course and the Number 110. 02, to which it answereth, the distance may be found by this Rule;

As

As

As the Sine of the Course is to the lesser Number, (whether D.L. or D.E.) so is Radius to the Distance: I therefore add Rad. to the Log. of the lesser Number 110. 02 and the Sine of the Course, viz. 33. d. 45. m. or 3 Rhombs being then subtracted, the Log. 110. 02. 2. 041471 difference is the Log. of Radius 10. 000000 the Distance, viz. 198, as here is evident, S. 33. d. 45. m. 9. 744739

Thus the agreement Log. of 198. 2. 296732 of these two Methods, per omnia, is easie to be perceived; but my brisk Young Artist, that understands Logarithmical Operations, will perhaps take it ill, that I teach him to do nothing by his Logarithm Book, than a junior in Arithmetick cannot do as truly without (if not as quickly) by the help of this short Paper only. I will therefore gratifie him, by showing how his DE. and DE. may be turned into Degrees and Minutes of Latitude and Longitude, according to Mr. Philips his way, (Mathm. Man. pag. 119. 120.) for the Main though in some small Circumstances differing, but in nothing dissenting.

1. Then to turn the D.L. into Degrees and Minutes of Latitude, is very easie, for multiplying it by 3, and dividing by 60, the Quotient gives Degrees, and the remainder Minutes, (and if it had been given in Miles (according to his supposition) only dividing by 60, had done the business) by which Rule, the D.L. 110 Leagues being multiplied by 3, and divided by 60, gives 5 Degrees, 30 Minutes, as here; And this holds true under any Meridian all the World over. But

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But care must be taken, that on this side of the Equator D.L.N. being brought into Degrees and Minutes, be added to the Latitude of the Place where the Ship sailed, and D.L.S. subtracted from it: But quite contrary beyond the Equator, for there D.L.S. must be added, and D.L.N. subtracted.

2. The Departure being also brought into Degrees and Minutes after the same way, is 7. d. 48. m. And if this were at the Equator, the account were very near the truth; but the further off the Equator, the fewer Miles make a Degree; and therefore when we are at any considerable distance from it, we must turn our Leagues of D.E. into Miles, as before, by tripling them (whereby 156 Leagues become 468 Miles) but must not turn them into Deg. and Min. till they be certified; concerning which there are two Cases:

1. When the Ship sails in a pure Parallel Course, E. or W. (as in the 4th Example fore-going) making no D.L. at all. In this case, this is the Rule,

As the Cosine of the Latitude to Radius; so the Miles of Departure to the Minutes of Longitude in that Latitude. So if that had been the Case, and the Lat. (for example) had been 50 d. 00 min. I must have added the Log. of 468 Miles to Radius, and subtracted from their Sum, the Cosine of 50 d. (which is the Sine of 40.) So there difference or remainder would have been the Log. of the

156
3
60) 468 (7
420
48

and TRADE.

the Minutes, as here it is manifest they would have been 728 Minutes, that is by Reduction 12. d. 8. m. But this is done rather to make that Case plain, than to suite our own.

2. When the places, from whence, and to which the Ship hath passed, (as in our Traverse from A. to H.) are of different Latitudes, as well as Longitudes. To understand which Case fully, let us suppose A. to be in the Lat. 50. d. on this side the Equator (that is of N. L.) and consequently H. whose difference of Latitude from A. is 5. d. 30 m. to have Northern Latitude 55 d. 30 m. and the Miles of departure to be as before computed 468. Now these Miles must not be reckoned in the Latitude of A. nor yet in the Latitude of H. but in the middle Latitude between them, which by dividing the D.L. 5. d. 30. m. into two equal Parts, (where of each is 2. d. 45. m.) and adding one of them to Lat. 50. d. is quickly found to be 52. d. 45. m. with which we may make our Porportions in the same manner, as in a Parallel Course with its own Latitude thus;

As Cos. 52. 45. to Radius; so 468 Miles to their proportionable Minutes in the Latitude 55. d. 30. m. So adding the Log. of 468 (as I did formerly) to Radius, and from their Sum subtracting the Cosine of 52. d. 45 m. (which is the Sine of 37. d. 15. m.) the difference is 2. 888280 the Log. of 773 m. which being divided by 60, gives 12 Deg. 53 Minutes; all which is manifest by the work in the Margin.

R. 10. 000000
L. 468. 2. 670246
12. 670246
C. 52. 45. 9. 781966
L. 773. 2. 888280
60) 773 (12
60
173
120
53

D

Therefore

Therefore I conclude that the Ship, when she is at H. is 5 Degrees, 30 Minutes in Latitude towards the N. and 12. D. and 53. M. in Longitude towards the West, more then when she was at A. according to these Hypotheses.

I shall conclude all with this one Crotchet more, which is, that I believe such a Mathematical Instrument-maker, as Mr. Atkinson, who is both an able Mathematician, and an ingenious Workman, might easily contrive a Scale that would be very cheap; and yet so plain, that any ordinary Capacity might easily conceive so well of it, as by the help thereof, and a pair of ordinary Compasses, to perform most of the Work in this Paper truly enough for ordinary use, though he that so used it, had little or no Judgment at all in Arithmetick; yea, possibly (with a little teaching) though he could neither Write nor Read; and this with very much speed and ease. I pretend not to skill in that Trade, but shall adventure however to give some Hints, which skilful Persons may further improve.

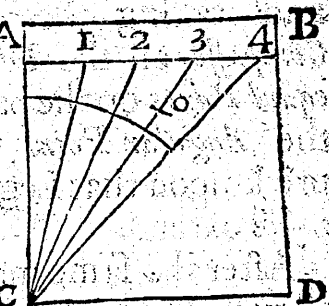
Let there be a Diagonal Scale of 100 in an Inch, made in the usual manner, only let there be a Space of an Inch and a Quarter left void at the higher end, above the Diagonalled Inch, for a little Quadrat of an Inch every way, and a small row of Figures above it; as I have indeavoured (though rudely) to express it, in the Diagram A. B. C. D. which is divided by a Diagonal Line from C. to B. and upon the Center C. an Arch reaching between the Lines C. A. and C. B. divided into 4 equal Parts by Points, trough which the Lines 1, 2, and 3, are drawn, which together with the Diagonal, represent 4 Rhombs,

Rhombs, reckoned from A C. which stands for any Cardinal Point of the Compass. The Space between every one of these Lines should be divided again upon the Arch into 4, for quarters of Rhombs, and very small Lines drawn through them, whereof the middle Line for half-Rhombs should be pricked for distinction sake. And though my Method requires it not, yet to sute other Mens, it were good that the other half of the Quadrant from B. to D. were divided after the same manner to 8 Rhombs.

On the back-side of the Ruler may be any usual Lines, such as of Numbers, Sines, Tangents, &c. But the most necessary for this use, are Lines of equal Parts, especially one good long one of 30 in an Inch, with a Line of Chords, and another of Rhombs & Quarters exactly fitted to it, which are usual things. So that there needs no extraordinary thing to be upon it, but the Quadrant only. It were good to have it of Brass, though one of Box with a Stud, for the Center at C. may tolerably suffice.

The Use hereof.

1. The Distance being given take it off the Diagonal Scale, between the Points of your Compasses, and setting it from C in its proper Point or Quarter (as suppose to 0. on the third Rhomb) then from that Point, take the nearest Extension both to the Line A. C. and to the Line C. D. which being measured upon the same Diagonal Scale, one of them will be the D L. and the other the D E. But remember that if your Distance be above 140, it



D 2

it

it is good to divide it into two or more parts, and work it at several times : as if this Course with its Distance were given N.N.W. 260 ; it may be divided into twice 130. And when you have found the D.L. and D.E. of one, set it twice down in your *Traverse-Table*, or double the Numbers. But if it be an odd number, as 199, you may divide it into 99 and 100, or any way else truly, and work it at twice, as if N.N.W. 199 were given, first take N.N.W. 99, and find D.L. and *Dep.* of that *Course*: then do the like by N.N.W. 100. And it shall be the same in effect, as if you could have dealt with it all at once. For this is but to break a longer *Course* into two shorter, imagining one to begin where the other ended, and to continue upon the same *Rhomb* or *Quarter*.

2. When you cast up all the *Parts* of your *Traverse*, (which a mean *Arithmetician* may soon learn to do with his Pen, and one that cannot read by Counters) and have found the D.L. and D.E. of the whole *Traverse*: You may find the *Course* and the *Distance* easily thus; Make a large *Rectangle* and taking the *difference* of the *Latitude* with *Compasses* off the *Diagonal Scale*, or the *long Scale* of equal *Parts* on the back side of the *Ruler*, set it from the *Angular Point* upon one of the *Legs*, making a prick upon that *Leg* at the place, whither the *Compasses* extend.

After the same manner, from the same *Scale*, take off your D.E. and set it on the other *Leg*, making a prick at the end of its *Extent*, drawing a *Line* between the said *Pricks*; The length of which *Line* (usually called the *Subtense* or *Hypothense*) being taken off with your *Compasses*, and applied to the same

same *Scale*, gives the *Distance*: And the least *Angle* being measured by a *Line of Chords*, and applied to a *Line of Rhombs*, fitted to it, shews the *Course* in *Rhomb* alone, or *Rhomb* and *Quarters*; that is, it will shew to a *quarter* of a *Rhomb* (and sometimes less) how far it is distant from a known *Cardinal Point* or *Rhomb*.

Sir, I could have done this Work in far less compass, (though these Leaves are not many, considering that so comprehensive a Subject is handled three several wayes.) But I had rather be smiled at by the Judicious for too much Plainness, than blam'd by the Unlearned for unnecessary Obscurity. Give me leave also to add, that I had thought to have subjoyned hereunto a *Specimen* of a *Table of Logarithms*, comprizable in a small *Octavo-Leaf*, that will at first view give the *Log.* of any *Number*, from 1 to 300, and upwards, and by help of common *Differences* to 3000, and above: That so a young *Artist* that works by *Logarithms*, might have been able to go through any *Traverse* in that Method, without any other *Book* or *Table*, save three little ones, that a quarter of a *Sheet* of ordinary *Paper* would well contain. But considering that small *Logarithm-Books* are so easie to be procured, I forbear to insert it; though I have it ready by me, almost finished. The rest is,

That I am,

Sir, yours, to serve you.

A. M.

30 HUSBANDRY,

A Proposal to supply the Defect of Small Money, from the great Incourager of Trade, Mr. Thomas Firmin, of London.

Whereas there are great Inconveniencies in Commerce and Traffick, arising from the want of a ready Exchange of Money, occasioned by the Non-coynage of small Pieces of Silver, and the failure of a sufficient supply of Copper-Farthings, to the interruption of Trading, hinderance of Business, and loss of time in seeking Exchange, and frequent Trouble and Vexation to Tradesmen and Shopkeepers, when haste and business are pressing and urgent upon them.

It is therefore humbly offered to the Consideration of such as have the Honour and Opportunity of Address to the Kings Most Excellent Majesty, whether they might not do a very great piece of Service to their Countrey, if they would Represent this Grievance to his Royal Wisdom for Redress, which would redound to the Benefit and Advantage of so great a number of his Subjects.

The Coynage of Groats, Two-Pences and Single-Pence having been, not without cause, disused, because the trouble and charge thereof doth out-balance the Advantage, and they are inconvenient and troublesome for the Payment of great Summs. If there may be found out such a Piece as will both serve for the Payment of greater Summs, and for exchange in lesser, it must needs be very beneficial and advantageous to all.

Now it is humbly offered to Consideration, whether the Coynage of TEN-PENCE in Silver, would not be useful to relieve his Majesties Subjects in great part from the former Inconvenience, and serve excellently to both these Ends. VIZ. For

and TRADE.

For Exchange in Small Summs, and Payment in Greater. 1. This Piece will serve for Exchange, and supply the want of Groats and Two-pences, as appears by what follows.

If	}	must be paid.	2 d.	Give one of these Pieces, for a Shilling.
			4 d.	Receive a Six-pence, for one piece.
			8 d.	Give two of these for a Shilling.
			14 d.	Two Shillings for one of these doe it.
			16 d.	One of these with a Six-pence doe it.
			20 d.	Two Pieces pays it.
			22 d.	A Shilling with one of these doe it.
			2 s. 2 d.	Two of these and a Six-pence doe it.
			2 s. 4 d.	This with a Shilling & six-pence doe it.
			3 s. 4 d.	Four of these Pieces doe it.

It will serve also in the Exchange of odd Money, not only by the help of Nine-pences, but also when a Trader hath but four Farthings (which often falls out when he hath not eight) this Piece may do him a great Pleasure for the Payment of these odd Summs, Viz. 11 d. 17 d. 21 d. &c.

Vitruallers and Retailers, from whom a great part of the Duty of Excise belonging to his Majesty doth arise, will receive much Benefit and Ease hereby.

2. This Piece will also be of good use for the Payment of greater Summs, which will be sooner told than in Six-pences.

For	}	24 of these will make 20 s.
		18 of these will make 15 s.
		12 of these will make 10 s.
		6 of these will make 5 s.
		3 of these will make 2 s. 6 d.

Thus will it serve to the Payment of all Summs, jointly, or severally, alone, or mixed with others; so that it will run aptly into Summs of all Denominations, while 24 make a Pound, 16 a Mark, 8 a Noble.

What Ease and Convenience this will afford to his Majesties Trading Subjects (which are a Multitude) is not hard to be understood.

HUSBANDRY

I am desired by my very good Friend, the Honourable Robert Fitzgerald Esq; to advertise here what before was done in the Gazette, Numb. 1821, as followeth, Viz.

His Majesty having been humbly given to understand by the Honourable Robert Fitzgerald, Esq; and some other Gentlemen, that they had found out the Art and Mystery of reducing the Salt Water of the Sea into good, perfect, and wholesome Fresh Water, in quantities sufficient to serve all the uses of any Ship at Sea, and that this Secret was to be performed without mixing any unwholsome Ingredient at all, whereby to endanger the Lives or Healths of any Person that should make use of it; which Proposal his Majesty received with a great Grace and Favour, and was pleased to command the Honourable Robert Boyle Esq; to attend him within some few days after, who upon due Consideration fully satisfied His Majesty of the Wholsomeness and Usefulness of the said Water; that His Majesty having received full Satisfaction therein, hath been graciously pleased for the publick Good (and to encourage so useful an Undertaking) to give the said Mr. Fitzgerald and his Partners a Grant of the same; who do intend from time to time by themselves, or Persons to be appointed by them, to meet at Times and Places hereafter by them to be named, to receive such Proposals as may be reasonable from any Persons, who intend to have the Benefit and Use of their said Invention.

I Presume (beside letting the World know of it) the Name of that Great, Good Man, the Honourable ROBERT BOYLE Esq; will be enough to give it Encouragement.

FINIS.

Place this in the Token for Ship-Boys, being the first Number of the second Volume of Collections of Letters for Improvement of Husbandry and Trade.

ERRATA.

Page 7. l. 5, 16. for strait r. straight. p. 8. the fourth line from South upward in the Table of Rhombes, should be thus, S. W. 4. DE. W=DL. S. S.E. 4. DE. L=DL. S. p. 9. l. 4. r. Transverse. l. 6 r. situate. p. 11. l. 10. r. they begin with 1 Q. and end with 4 R. p. 12. l. 12. r. accounting. p. 13. l. 27, 28. r. N.W. by W½N. p. 12. l. 16. r. Course, and that. p. 15. The particular Products of 5141 and 8577 multiply'd by 11, are to be thus placed in the Margin. p. 16. l. 3. and often elsewhere; *substract* and *subtraction*, are by mistake put for *subtrakt* and *subtraction*. Ibid 50. 65. in the Table, in the Colume, marked with E. should be 5. 65. p. 20. l. 23. r. As Radius to the Distance, so is the {Cosine } to {DL. } p. 24. l. 4. r. whence. {Sine } to {DE. } l. penult. r. 728. p. 26. l. penult. r. through.

5141.	8577
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Vol. 1. [1733] 12th Number

COLLECTION OF LETTERS

For the Improvement of
Husbandry & Trade,

The Contents.

An Account from the Reverend R. G. of Barling near Walfleet in Essex of a New manner of Plowing, whereby he hath done as much in three days with two small Bulls, and one Man, as his Neighbours could do with four stout Horses and two Men in eight days. A 2d. Experiment from the ingenious Mr. John Worlidge of Petersfield, Author of Systema Agiculturne, about Fining and Preserving of Syder. Some Experiments of Port-Sea Salt, from Mr. Cragg, sometime Husband to the Royal-Fishery.

An Account from the Reverend R. G. of Barling, near Walfleet in Essex, of a new manner of Plowing, &c.

Honoured S I R,
I Cannot but return you thanks for your *Collection of Letters of H. and T.* which you was pleased to send me by the Reverend Mr. Fuller. As these *Collections* cannot but be of great Advantage to the Nation, none that is a Well-wisher
E to

to it, will refuse to help you, as far as he can, in so good and needful a Project. And as I am one of those, I shall answer you to that part of your third Inquiry; by which you desire to know what manner of *Ploughs* are used in our Countrey, by giving you only an account of those that I in particular make use of, and for which I am beholding to those poor *French Protestants* that fly over unto us for shelter; which I hope shall be one of the least benefits this Nation shall receive by their flocking over to us, and our wellcoming them with so much Charity as we have done.

Though I have but a little parcel of Ground, which I hold of the Church with thankfulness; I make use, for the managing of it, of three sorts of *Ploughs*, that go upon Wheels.

The first, is much after the fashion of most of our *English Ploughs*, and particularly, like those that are used about *Huntingdon, Lincoln, and Northampton-shires*; and it serveth me to give the first *Tilt* or *Turn* to my Ground.

The Second, which is for the second or third *Tilt*, hath two Side-boards, with which it throweth the Earth both ways, and so breaks it much better than our ordinary *Ploughs*, since that by these means the Ground is twice stirred, whereas an ordinary *Plough* stirreth it but once.

The Third, is like the Second, except that the Side-boards of this are a matter of four foot long, whereas those of the other are but of two.

By the benefit of this last sort of *Ploughs*, one may plough in one day, with four *Bullocks* (as I am informed they do in *Poitou* in *France*) ten or twelve Acres of Ground with ease.

If

If four *Horses* (which I do not believe) can do as much work again as four *Bullocks*, pray reckon what dispatch they will make in a Field in one day? This (though not comparable to that) I did towards the latter end of *October* last past, when the days began to be pritty short. I caused twelve *Acres* to be plowed in three days, with only one pair of small *Bullocks*, and only one *Man*, both to drive, and to hold the *Plough*.

Had I hired my *Plowing* (as I did use to do before I had this way of plowing) it had cost me forty eight shillings, which is after the rate of four shillings an *Acre*; and I reckon that it did not stand me in above five or six shillings.

But will the *Crop* be worth any thing? This I have been often asked: God knoweth, I say: this I know, that as for yet, it proves full as well, if not better than that of my Neighbours, though they were at a far greater Charge; since that they could not do in less than eight days, though they had four stout *Horses*, and two *Men* to their *Plough*, that which I did easily in three, with a couple of Creatures that go but little faster than *Snails*.

These any one will find *Faisable*, when they shall come to understand; first, that we went two Journeys a day, and for the space of five or six hours every Journey: and these, *Bullocks* are better able to perform than *Horses*; because these can take a good Bait in far less time than the other.

Secondly, That instead of going four times to make a *Ridge*, as in *Essex* they generally do, my *Man* went but once; so that he went no more times about to plow six *Acres*, than others did to plow but one *Acre* and a half.

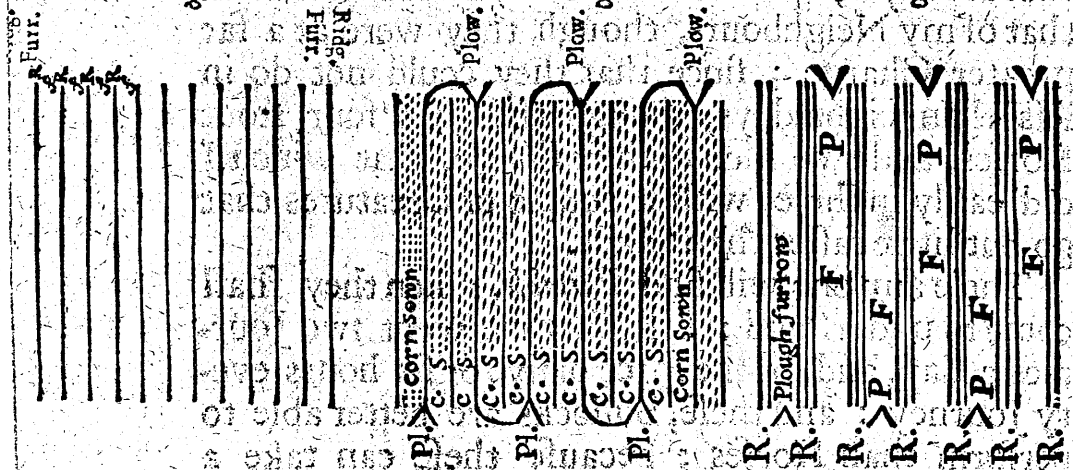
E 2

How

How this may be done, no doubt you will be glad to know. But how, herein to satisfy your Curiosity, is a hard matter for my Pen to undertake. Nevertheless, I will endeavour to do my best; hoping that if you can but understand me, you will be pleased your self so to express my meaning, that it may be understood by others.

After a good *Summer-Fallow*, before we sow our Ground, we *harrow* it; when it is well *harrowed*, we *plow* it with our second sort of *Ploughs*, spoken of before, all in small *Ridges*, equally distant one from another: so that the Ground lyeth much after the same manner, as when you have given your Field half a *Tilt* or a *Strike*, as we call it here; or much after the manner of this first Figure.

1. Figure. 2. Figure. 3. Figure



The Ground being thus made ready, we sow it with a *broad Cast*, or *Sprang* it, as others do term it: most of the *Corn* thus sown, falleth into the *Furrows*, as the second Figure doth shew.

The Ground thus sown, cometh the third sort of *Ploughs*, with which we part each other *Ridge* into two, and so cover at one time two *Furrows*. The

The going of the *Plough* in each other *Ridge*, is to be seen in the second Figure.

And the third Figure sheweth you (though imperfectly) how the Ground is laid into broad *Ridges*, by the *Ploughs* throwing the Earth of each *Ridge* both ways. So that you may perceive, that we go but once to make one broad *Ridge*, and here others go always four times.

This is all that I have now to say concerning my manner of *Ploughs*, which all they that have seen it (and many are come on purpose to see it) confess, that it is the best, and the least chargeable way that ever was heard of.

My way of plowing with *Bullocks* yoked by the *Horns*, is of no less advantage to the *Husbandman*: but because I cannot describe you the manner of the *YoaK*, I shall mention at present nothing of it. Notwithstanding, if you desire to be Informed about it, command.

Honoured SIR,
Your most Humble Servant,

R. G.

From Barling in Essex, April 30th. 1683.

A 2d. Experiment from the Ingenious Mr. John Worlidge of Petersfield, Author of *Systema Agriculturae*, about Fining and Preserving of Syder.

S I R,

MY last to you about the *Fining of Syder* published in No. 14. p. 163 of the first Volume: being short, by reason that I had not fully perfected some Experiments that I was then in hand withal: I am now willing further to gratifie you (if you please so to esteem it) with what I have since observed.

I remember that I then acquainted you, that I did improve or edulcorate the Liquor of the seeming hungry *Redstreak*, with an addition of that of *Sweet-Apples*; which then did appear to have enrich't it: but making *Syder* of other Fruit, equally, or rather more jejune than the *Redstreak*, without such addition of *Sweet-Apples*, and at the same Season, and *Fining* it only by *Precipitation* of the *Feces*; it proved to be so pleasant, that it needed not any Composition or Mixture of a sweeter Juice: and the only fault that *Syder* (which was so improved by the *Sweet-Apple*) had, was, its being a little too luscious (by many, not esteemed a fault.) However, it is easily prevented; and in all probability, time may so qualifie it, that it may yet prove an Advantage.

The same Autumn I made *Syder* of *Deux-ans*, or *John-Apples* only, a Fruit much more rough and acid than the *Redstreak*, yet by a nimble precipitation of its *Feces* or *Lee*, without any addition whatsoever, and drawing it off, it retained its natural Sweetness: and although at first it seemed to be a pale and thin Liquor, by time it improved it self to be, not on-

only of a bright *Canary* colour, but of a more rich and dilicate gust than any other *Syder*, I have yet tasted.

I also then made *Syder* of other sorts of *Apples* singly, for experiment sake, which after the vulgar method of making and fining it, usually yielded a mean *Syder*; but by a little timely precipitation of its *Feces* or *Lee*, and ordering of it, it proved to be in every respect very near in value to the best.

From which Experiments I have observed, that the *Fermentation* of *Syder*, as to its raising a Froth or Scum, is not of that necessity, as is the precipitation of its *Feces* or *Lee*, although a *Fermentation* in a few days after its making, may be advantagious, and doth much accelerate the designed precipitation: for after I had made a Vessel of *Syder* of mellow Fruit, which did not ferment, but remained thick for five or six weeks: I added some bruised Apples to it to beget a *Fermentation*, which succeeding not to that degree I expected, I drew it out into Bottles, where the *Feces* did in a little time subside. And the *Fine* being drawn off, proved as I desired.

Therefore the only way I have yet discovered to make *Syder* to retain its first and purest taste, and obtain the true and proper colour and beauty, that must render it acceptable to the eye, is a timely precipitation and abstraction of its *Feces*; which remaining long in it, putrifies, heats, and thereby begets frequent Fermentations; which not only impoverish it, but give it an ill savour.

To discover the manner, how to effect this Precipitation, hath set many heads and hands at work, and several ways have been found, which are needless here to repeat. But all mixtures, of what nature

ture or kind soever, other than what proceeds from the Apple, are to be avoided; seeing that the same end may be attained much more to the advantage of your Syder, without any Forreign Additions (as in my last I hinted to you) Now after a full experience of the truth of it, I may confidently averr, that bottling of Syder, after it hath stood three or four weeks on the Lee, whether it be through fine, or not, will cause a Precipitation of the Feces, and render it very pure: so that it is but having a stock of glass Bottles, the larger, the better, according to the quantity of your Syder you intend to fine; and you may (in two months time after the grinding your Apples) have them filled with the finest Syder for taste and colour, and fit to preserve for your use.

But if your stock of Syder be too great for your Bottles, then will it be necessary to rack it from its Lee into other Vessels: and in case it doth not fine in Wooden Vessels so well as you desire, for want of that coldness that glass Bottles have; then you may take Pebble-stones or Flints (washed clean, and dried) and put a convenient quantity of them into your Syder, in at the Bung; which is said (and with great probability also) to have much accelerated the Precipitation of the Feces: and the applying of a Bag of Salt on the out side, under the Vessel, hath been affirmed (by its extraordinary coldness) to beg the like effect. But these (having my self not had the experience of them) I only commend to the curious, as probable ways to save great quantities of Syder from being impaired: for it doth appear, that Cold doth make that Liquor more Thin, and more easie to let the groffer parts fall: and that

that warmth doth, (as in many Philosophical Operations) cause it to retain that which is mixt with, or dissolved in it.

Therefore the diligent Artiff in these Operations, will find, that the colder his Vessels are in which he disposeth his Syder, and his Cellars or Repositories, wherein he placeth his Vessels; and the sooner he divideth the pure from the impure, the better will his Liquor be: and a Vessel of such (mechanically improv'd) Syder, will very much exceed either that which rests long on its Feces, or that is refined by Forreign Additions.

But that you may not be to seek in the method of drawing off Syder from one bottle into another, without raising the settling in the bottom, which usually happens in Decantation. I will give you a Draught of the way I so often mentioned.



First, Place the Bottle out of which you extract the refined Syder on a Table or Shelf, as at b.

Then take the Syphon, and put it into the Bottle, as at (a.)

About that Leg of the Syphon that is to go into the Bottle, whip a Ring of blue, red, or the like, Yarn or Worst-ed, which will slide up and down as you please; as at (d.)

Then hold your Receiving-Bottle (c.) with a Funnel (e.) under the out-ward

F ward

ward Legg of the *Syphon*: and first, whilst one holds the *Syphon* with his Fingers, at (d) let another suck at the lower end of the outward Leg of the *Syphon*, till he perceives the Liquor approach; than let him take away his Mouth, and apply the *Bottle* and *Funnel*.

Or he may have a small *Glass Pipe* turned, as at (f) which may be applyed to the end of the *Syphon*, wipt about with a little *Worsted* or *Tarn*; and so he that holds the *Receiver*, may draw the *Syde* into the *Syphon* without touching it with his mouth.

But before you draw, let the strait Leg of the *Syphon* sink into the *Bottle* till it touch the bottom; and place the Ring of *Worsted* or *Tarn* even with the mouth of the *Bottle*: then lift it up gently about an *Inch*, or till you think it be somewhat above the *Feces* or *Settling*, and there hold it between your *Thumb* and two of your *Fingers* at the mouth of the *Bottle*, then draw, &c. And as the *Syde* runs into the *Receiver*, through your transparent *Syphon* (when you think it is near the bottom) let the *Syphon* sink between your *Thumb* and *Finger* by little and little; so may you easily perceive the least Cloud arise, then let it sink no more, but run as it will, till all that is *Fine* be out.

At any time when your *Receiver* is full, stop the lower end of the *Syphon* with your *Finger*, whilst he that holds the *Receiver* changeth it for another.

Thus may be drawn off many *Bottles* in an hour, and with great Expedition, when once you have settled your self to it.

To make one of these *Syphons*, take a Pipe made of *Chrystal*, or *Flint-Glass*, such as is usually made and sold at the *Glass-Shops* for a *Barometer* or *Weather-Glass*

Glass for *Quick-silver*; for those are the thickest, strongest, most transparent, and most easie to turn in the Fire; then make a *Charcole* Fire on some plain *Hearth*, and put that end of the *Pipe* that is usually Hermetically sealed or closed up, into the Fire; and when it is hot, put it about an *Inch* into *Cold Water*, and it will soon break off, then is your *Pipe* open throughout.

Then lay the *Pipe* across the *Fire*, (by a gradual access, least sudden heat crack it) that about five or six *Inches* near the middle may be *Red-hot*, yet so that one end may be two or three *Inches* longer than the other; when it is thus hot, holding your *Pipe* at each end with each hand, you may bend it to the form described at (g) then cool it (by a gradual taking it from the *Fire*, least the sudden cold air break it) and when it is cold enough to handle, put the longest Leg into the *Fire*, and when it is hot, turn it into the form as at (h) but because the end will be too hot to touch with your hand, you may manage that end with a pair of *Tongs*.

As to the wideness of the inside of the *Pipe*, you may have them of what size you think good, and for the length, according as the depth of your deepest *Bottles* require.

As to the choice of Fruit, and manner of grinding, and pressing it, which much conduceth to the making this curious Drink, I would have given you some Observations about it at this time, but shall referre it to another Opportunity; fearing I have been already too prolix herein. Thus only from,

June 25, 1683.

Yours to command,

J. W.

Some Experiments of PortSea- Salt, from Mr. Cragg, sometime Husband to the Royal Fishery.

S I R,

I Cannot but commend your good design in publishing your *Collections for Improvement of Husbandry and Trade*: may the Success be as great as you desire it; and to help on, I have sent you some of my *Notes and Observations* about *Salt*, which I had occasion to remark, as being several years in the Service of the *Royal-Fishery*.

To define what *Salt* is, or give an account of all the native and factitious *Salts*, is not my purpose; but the *Salt* I shall speak of, is such, as is commonly used for *Curing or Saving Flesh, Fish, Butter, Cheese, &c.* And of this there are divers sorts, as *Spanish and Portugal*, which are not much different; *French, English* and *Scotch*, with some others, not to my purpose; and also *Salt upon Salt*.

Spanish and *Portugal Salt* are made by the heat of the *Sun*, and appears in ragged forms from small pieces to those as big as ones hand; and in its kerning much filth of the *Sea* and *Sand*, is imbodyed with it. Of this *Salt* thus only made, the *English* and *Dutch* use but little, and then 'tis mixt with smaller *Salt*. I suppose that the *small* may save the Provision for present, and the *larger* dissolve by degrees for a longer Preservation: But their chief use is to make *Salt upon Salt*; of which anon.

French Salt is made like the other, but of far lesser *Kern*, and much worse, as appears by its foul colour, and fulness of filth, and *sand*; by which, upon *Refining*, a quarter part is lost, as I know by my

own

own Experiment; and it is a great Argument that the *Spanish* and *Portugal* is better, or else the *Dutch* would not go so far for it, when they can have the *French* much nearer and cheaper.

French Salt usually in 3, or 4 Months makes *Fish* or *Flesh* eat hard, and look of an ill muddy colour, and in less than a years time it begins to corrupt, and shortly after rots; 'tis very rare that it fares better: and although some may say otherwise, I question not but it will be found that some white *Salt* was mixed with it; and this I have often tried.

Scotch Salt, and that of *New-Castle*, are made by boyling *Sea-Water* without any previous preparation: but the first, *Viz. Scotch* is reckoned the better, I suppose, by reason of some better Care or Art of preparing, it is of a larger *Kern*, and will go farther. But if *New-Castle* would enlarge their *Kern*, and clear it from its *Bittern*, then this *Salt* would be of excellent use.

There are also in *England* several *In-Land Salt-Works*, proceeding from *Brine-Springs*, which with a little Care and Study might be made of great use, and in very great Quantities.

Salt upon Salt is made of forreign *Salts*, brought hither, or carried to *Holland*, and dissolved in *Sea-liquor*, by settling and clarifying, and boyling of which they purifie it in a great measure from its dirt and sand: and this *Salt* the *Dutch* highly esteem, for saving of their *Summer-Herrings*, and all other *Fish* they are curious in.

A

A Salt much like this, made at Once from Sea-Liquor, well settled and refined, is the Salt I chiefly design to speak on, *Viz.* That which is made at Port-Sea Island and Places adjacent, in Hampshire: an account whereof you may see at large in Mr. Collins's ingenious Treatise of Salt and Fishery, printed in 1681, which may be afforded very cheap; and by reason of its convenient Scituation for Flanders, and all that is East of it, and its capacity of affording very great Quantities, gives hopes of Englands supplying it self and them with Salt.

Of this Port-Sea Salt I'll tell you some of my own Observations.

Upwards of three year ago, the Royal Fishery Company used altogether this Salt to cure their Island Cod with; which made it look so white, dry and firm, that Mr. Paxton and his Partners (Fishmongers in New-Fishstreet) declared, that they hardly ever before that time, saw any of that sort of Cod look so well, and prove so good, and also preferred it before any of that sort of that year, by forty shillings the thousand.

Herrings were saved also with the same Salt, and proved as well as any Dutch that ever were seen. I my self had a small Cask of them; some of which I kept two years in the Pickle, they were first salted in, and they were then exceeding good, and the Pickle as good, which I consumed as Sauce for Mutton, not inferiour to an Anchovy.

This Salt at Port-Sea is afforded at 10d. the Bushel; I suppose, cheaper than can be had any where else of the same goodness; and I question not, but if a good

good Stock were raised, Means enough might be found to afford it for half the Money.

I my self, in Feb. 79. made a strong Brine with this Salt, so strong, that no more Salt would dissolve, and in it put two Porkets, some of which I kept till July following, and boyled with Beans, which proved full of Gravy, very Red, not over Salt, and in my mind, exceeded any English Bacon that ever I tasted.

In the same Brine, which I kept without boyling for two years, I sunk a Brisket of Beef eight days; about February, then took it out, and hung it in a string by the Wall, in a temperate open place for six weeks, and then dressed it with a boyled Sallet, which had as many good Qualities as the abovesaid Pork.

About the same time I sunk an other piece of Beef for 20 days, and afterward hung it up in an open place for the whole Summer, and at Michaelmas it was very good.

My speaking of these things to some of my Acquaintance, they laught at me, but Mr. Biddle, Fishmonger at the Kings-head in New-Fishstreet, would try an Experiment, and in the beginning of the Dog-Days bought a Leg of Mutton, and sunk it in Brine, prepar'd as afore, all Night, then hung it in a string, in defiance of the Season and Flies for ten days, and after dressed it, inviting his other Companions to help eat it, and 'twas excellent good, and so fresh, that they eat Salt with it.

Here is enough said to help those that live far from Market, or kill their own Beef; and I question not, but if any body would send me some Venison so ordered from any part of the Kingdom, it will come good to my hand.

Sir,

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Sir, 'tis probable, if this pleases the World, I may furnish you with more Examples: *Interim*, I subscribe, your Loving Friend,

Rob. Cragg.

Advertisements.

FORasmuch as all natural Knowledge was originally produc't, and still eminently depends upon *Experiments*; and many, or most *Experiments* are couched among *Handy-Works*: and also that *Handy-Works* may be improved, there hath been one Volume, Entitled, *Mechanick-Exercises*, Printed and set forth, containing four *Trades*, VIZ. The *Smiths*, the *Joyners*, the *Carpenters* and the *Turners*. Price 9 s. 4 d.

The second *Volume* treating of *Typographic*, or the whole Art of *Printing*, is under hand; and three *Exercises* of it now Printed and Publisht. Price, 1 s. 8 d.

In these *Exercises* all the *Tools* and *Machines* are delineated in their shapes, and curiously engraven on *Copper-plates*, and their *Demensions* described in the Matter of the Book, and manner how the *Operators* use them, exprest in *Workmens Language*.

To which is added at the latter end of each *Trade* an *Alphabetical Dictionary*, explaining the meaning of *Workmens Terms* and *Phrases*. By *Joseph Moxon*, Member of the *Royal-Society* and *Hydrographer* to the Kings Most Excellent Majesty. Sold by *Joseph Moxon* at the West-side of *Fleet-Ditch*, at the Sign of the *Atlas*, London, 1683.

AT a Village called SEEN in *Wiltshire*, a Mile and a half from the *Devises*, and 10 or 12 from *Bath*, are excellent Medicinal Springs, of the nature of those at *Tunbridge*, and approved by several Physicians of *London*. It hath done great Cures for the *Spleen*; cooling of the *Reins* and *Stone* for *Hectique* Persons. Here are several good Houses for Accomodation.

London, Printed by *J. Gain*, for the Author, *John Houghton*, and is to be Sold at his House, against the *Ship-Tavern* in *St. Bartholomew-Lane*, behind the *Royal Exchange*: By *John Lawrence*, at the *Angel* in *Cornhil*: By *Moses Pitt* at the *Angel* in *St. Pauls Church-Yard*: By *William Cadman*, at the *Popes-head* in the *New-Exchange*: By *Dorman Newman*, at the *Kings Arms* in the *Poultry*. And several other Bookfellers, 1683.

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Numb. 3

A
COLLECTION
OF
LETTERS

For the Improvement of

Husbandry & Trade,

TUESDAY, November 6th. 1683.

The Contents.

An Essay to prove, that if no Wood for Fuel, or Timber grew within twelve Miles of a Navigable River within this Kingdom, 'twould be its great Advantage. A Relation of the Culture, or Planting, and Ordering of Saffron: By the Honourable Charles Howard, Esq; Extracted from the Philosophical Transactions, No. 138.

An Essay to prove, that if no Wood for Fuel or Timber, grew within twelve Mile of a Navigable-River within this Kingdom, 'twould be its great Advantage.

S I R,

MY Last being an Account of an extraordinary profitable Plough, learnt from the French Protestants. Of Fining Syder, without Addition; from Mr. Worlidge, the Author

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of

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of *Systima Agricultura*; and several great Experiments of the Use of *English Salt*, from Mr. *Cragg*; being in *July* last.

I should before now have given you this, but my other private Affairs hindering, I hope you'll excuse it; I presuming you look on this, to be done as my Recreation, not my Business: but to make you part of Amends, here are four Sheets instead of two; and, if you have four and twenty within the Year, 'twill be as good as two each Month.

SIR, I am not unsensible of the great Fondness the generality of *English men* have for *Wood*: wherefore, if I meet with Censures for this my bold Attempt, 'twill be no more than what is expected; but if they'll be pleased to have so much Patience, as to read and consider what follows, and then give some reasonable Answers, they'll be very obliging, and I shall be as willing to acknowledge my Mistake, and for the future, strive to promote the contrary.

The Method I intend to pursue, in making good my Proposition, shall be to shew you, that the contrary thereto, *Viz. Encouraging the Growth of Wood within the twelve Miles aforesaid, will greatly prejudice the Private and Publick Wealth; and, as the Consequence, the Navigation, Popularity, and Strength of this Kingdom*: then I shall strive to answer what *Objections* shall occur, that I think material, and conclude with a Submission to better Judgments.

First, I'll consider the prejudice done to private *Wealth*; and in order thereto, tell you a story, but a true one.

There

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There lately was a Person of great Honour, of this Realm, who among his other *Demefnes*, had a *Wood*, containing about thirty *Acres* of Land; which his *Honour* designed to have had grub'd up; thinking it, so, most for his Advantage: about this Affair, he consulted with his *Steward*, as one of the fittest to advise him (he being such an one, as I take to be very honest, a good Servant, and as wise in *Countrey Affairs* as most of his Neighbours) this *Steward* advised his Lord to the contrary, as a thing would be much to his Damage. He being one time particularly in my Company, and discoursing about *Countrey Affairs*, he told me this: I told him, I thought he had damaged his Lord, and I could prove it: in order to which, I ask't him the value of the Whole, when newly cleared of the *Underwood*: and he told me, for the *Stems*, or *Standels* that were left, he might have had the Ground cleared and plowed, and two hundred pounds in Money; and the Land being Inclosed, would *Annually* Lett for five Shillings the *Acre*: but if it were permitted to stand, the *Stems*, or *Standels* would be improved in thirteen Years (the Time for the next Fall of the *Underwood*) a hundred pound more, *Viz.* three hundred pound: the *Underwood* would also sell for six pound the *Acre*; which, for the thirty *Acres*, is one hundred and eighty pounds more; in all, four hundred and eighty pounds: all the Profits could be made in this thirteen year, except to put in a few *Calves*, or the advantage of a few *Acorns*; which he valued at little. When I had this Account, we parted; and at my leisure, I calculated the *Interest* of the

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two hundred pounds he might have had for the *Standels*, if grub'd up, and the *Interest* of the *Interest*, then the five Shillings an *Acre*, *Viz.* seven pound ten Shilings a Year *Rent*, & its *Interest*: and by this means I found, that in the thirteen Years time, he prejudiced his Lord about seventy pounds: had this been received by Half-Years, or Quarters, it would have been more; and the Advantage of often fingering Money, brings sometimes more Profit than Common *Interest*.

I also considered, that had this Wood been gone, the other that his Lord had thereabout, would have sold for more, and so much more 'twould have added to the Loss: the *Wood* made little, or no Employment till the thirteen Years were out, and then, not much; but otherwise, whether *Pasture*, *Arable*, or *Garden*, it Annually, if not Dayly, found Employment for many, by means of *Wool* or *Hydes*, *Hair*, *Tallow*, *Flesh*, *Corn*, *Hay*, *Garden-stuff*, or such like; & 'twas likely that this Land, with the Labour of those that must be, otherwise, idle, or not fully employed (because no other Work would cease, but might be more advantaged) might yield two, three, four, or more pounds a year, according as 'twas Husbandred. This must needs have increas't or improved his *Tenants*; but might have undone the *Poor*, by making of them *Richer*, and by means of their Employment, enabled them to have procured *Wood*, or *Coals* farther off, and have left them *Money* in their Pockets to boot.

This is the Case which I sent to my Friend the *Steward*; who, when I met him, and at several times since, hath granted what I said, to be true; but, what will be done at the end of the next Thirteen years, I know not. If

If the former Account be any ways grateful, then I pray you to accept another of my Considerations.

If no *Wood* for *Fuel*, or *Timber*, grew within Twelve Mile of a *Navigable River*; then I humbly conceive, that the necessary Consequence thereof, would be a great want, both of *Fuel* and *Timber*: and also, if men love their Interest (which seldom lies) an Increase of *Corn*, *Cattle*, or something else, as advantageous. Now if the clear Profit of this *Corn*, *Cattle*, or something else, shall be able to purchase as much *Fuel* and *Timber*, as was wont to grow upon this Ground, then it will plainly appear, that the destruction thereof will be no Prejudice.

That this may so appear, I'll suppose, that Two *Gentlemen* should purchase for each of them an Estate of three Thousand *Acres* of Land, which should joyn together, and be either of them distant Twelve Mile from a *Town*, upon a *Navigable River*, which should be the *Market* for their *Corn*: I will also suppose, each of these Estates to have an Hundred Families on it, with Imployment enough for them; and also one Thousand *Acres* of *Wood*, and so much alike, that it should not be worth five pound for the advantage of choosing first.

One of the *Purchasers* I'll call A. the other, B. and the *Market-Town* on the *River*, C.

As soon as these Gentlemen were settled, I'll presume, A. immediately cuts down all his *Wood*, which as the Consequence thereof, presently puts Money in his Pocket, as a Tool to work with more than B. hath, who is resolved to take care of his *Wood*, according to the Custom of his fore-Fathers: By this means it certainly follows, that there will be an Imployment on A's Estate, for People and Teams to fetch

fetch *Fuel* and *Timber* farther off. If they burn *Wood* still, it's likely they must buy it from *B.* as the nearest Neighbour, which may increase *A's* People according to its Proportion; and in the mean while, *B.* sells his *Wood* a little dearer, which amounts but to a small Matter.

But 'tis likely, *A.* troubles *B.* for very little of his *Wood*, especially for *Fuel*, *Fir-Timber*, or *Wainscoat*, because he finds out a better way to supply his Occasions; viz. He carries a Load of *Corn* to *C.* the Market-Town, on the *River*; the Carriage whereof he values at eight shillings, so likewise doth his Neighbour *B.* and I'll suppose, that under, it cannot be afforded. *B.* by reason of his great plenty of *Wood* at home, carries nothing back: but *A.* to supply what he much wants, carries a Load of *Coals* or *Timber*, which Load carrying is valued at six shillings; so that *A.* makes fourteen shillings of his Journey to the Market, and *B.* but eight shillings. The Sight of this Profit presently gives Incouragement to some Tenant of *A's*. to get him another Team; and that he may have Employment, he offers to carry the *Corn* for his Landlord or Neighbour, at seven shillings; which if he doth, the rest of his Fellow-Tenants must do the like, or otherwise must be employed only with his Refusals; which, rather than they'll do, they'll offer to carry it for seven, or six, or five shillings: and by this meanes, *A.* sells his *Corn* cheaper and quicker than *B.* and gets home sooner, to do some other business.

B. seeing all this, bethinks himself, why should he give eight shillings for carrying a Load, when his Neighbours will carry it for him cheaper, he will not give it, but hires his Neighbour's Teams, which

necessitates his own Tenants Decay; and by Consequence, on his Land he'll have less *Manure*, less *Corn*, and less *People*; while, on the other side, by an Increase of Teams, and People to manage them, they every day augment their Plenty.

Beside this, another Advantage belongs to *A.* his Tenants seldom are caught stealing of *Wood*, because there is none, and they must also get some money beforehand to buy *Fuel*, or else a Cold Winter undoes them, and they must pinch severely: But with *B.* 'tis quite contrary, if there be a *Hatchet* to be gotten, *Firing* will be had.

But a greater Advantage than this, hath *A.* for instead of his *Wood*, he hath added a thousand more Acres of *Pasture* and *Tillage*, to what he had; and thereby, according to the first Proportion of a hundred Families, to the two thousand Acres, he must needs add fifty more Families to them. This New Increase makes a greater Consumption of what the Artist makes, or the Shop-keeper sells: wherefore some will adventure from other Towns, to live here, till they have made this Place like a Famous City: which increases *Rent*, *Manure*, and *Improvements*. And the only Abatement that I see to this, is, the Decay of a few *Woodmen*.

Neither is *A.* profitable only to himself, but also a considerable Gain to the Kingdom; for his Market is increas'd by the Product of his thousand Acres, and Ships will be employed to fetch him *Coals* and *Timber*: but how many Ships, if all within the twelve Miles should do as *A.* I wont determine; yet, reasonably suppose, as many as are employed for the Supply of *Coals* and *Timber* to London; and I am credibly inform'd, that of *Coals* are Annually brought

brought three hundred thousand *Chaldron*. This might frighten our Neighbours from making War with us; and with that, bring a further Advantage of an Honourable Lasting Peace.

I have not willingly, in this my *Supposition*, strained any thing beyond its proper strength, but have fairly endeavoured to shew the Damage may be done in some Places to Private Persons, by encouraging the Growth of *Wood*. I'll now go to my Second Head, and consider the Prejudice it may do to the Publick.

In Order to which, I desire it may be granted, That if a Man can have *Fuel & Timber* as convenient and cheap from other Places, as from his own Land, then, whatsoever he destroys from his own Land, will be no Prejudice; but whatever Profit he can make of his Land, more than he made of it when 'twas full of *Wood*, by so much he is a *Gainer*.

If this shall be granted, as I perswade my self, it may, then I affirm, that all the ground within the twelve Miles of a Navigable River, that *Fuel* grows on, and will bear other Matters; by Exportation of which, Profit may be brought into the Nation; or by using which Matters at home, other Matters may be produc't, which will bring in Profit: I say, that such Ground is in effect, lost, because it hinders the burning of *Coal*, of which we have enough for every body, and it costs the Nation nothing; which may easily be understood, by considering the Nation as one Man, in one Joynt-Stock; and so, I presume, the *Parliament* always consider it. By thus doing, it will appear, that what one pays to another in *England*, amounts to the Publick, no more than the putting a Crown out of my *Right Pocket* into my *Left*, doth to enrich

rich me. So *Coals*, being they belong to *England* already, will cost *England* nothing but Labour; and that is worth nothing, because it only employs such as would otherwise be idle, or such as would be employed only in consequence of this Employment; and I challenge any body to tell me, how Employments for others cease, for want of the People herein busied, seeing we have abundance of People still, that want Employment: and it is a plain Case, that thus finds work for a great many People, particularly, as I hinted before, if the *Port of London* spends three hundred thousand *Chalder* of *Coals* a Year, it doth employ to fetch them, as I am certainly told, fifteen thousand men, if they went but one Voyage in a Year: for the Rule is, one man to twenty *Chalder*; but I'll suppose they go six times a Year, some few eight times; nay, I'll grant, all eight times, then the number will be but eighteen hundred, seventy, and five, besides all that are employed in digging these *Coals*, bringing them to the *Water*, carrying them in *Keels*, and *Shipping*; all the *Crimps*, *Meeters*, *Lighter-men*, *Carmen*, and others, that are employed to carry them from the *Ships* to the Place of *Consumption*; as also, what are concerned about Building and Storing *Ships*, and supplying Provisions for this great number of *Seamen*, and others: had we the number of all these People, 'twould be very great.

Now, if the *Port* of *London* consumes so many *Coals*, I cannot but think, that all the People within the aforesaid twelve *Miles*, would consume as much, if not many more; but for fear I should think too many, I'll abate as much as can reasonably be desir'd,

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but do believe, that some will be granted, and so many as will, add (suppose, no profit to the Whole, because serving our selves) yet at least, a great *Naviga- tion*, and bring a great Strength to our Countrey; and if it will not be readily granted me, that such an Increase of *Shipping* and *Employment* for People, may enrich us, I won't now dispute for it.

But if our having so many *Seamen* extraordinary, and so many *Landmen* extraordinarily employed, by reason of such a new *Coal-Trade*, shall be the means of our *Exporting* any *Coals*, or our getting any thing by any other *Forreign Trade*; then, so much as we do get, so much will *England* be advantaged; and if by our being stronger in *Men* and *Ships*, our Neighbours shall have the less mind to quarrel with us, or the more desire our *Alliance*, by so much we may be the happier, at least, though no Riches should succeed.

The number of *Ships* that must now be employed to fetch three hundred thousand *Chalder* of *Coals*; supposing them, one with another, to be of two hundred *Tun* Burthen, or to carry ten Score *Chalder*, and to go eight times a Year, would amount to the number of one hundred eighty seven *Ships* and a half: but if this should be doubled, *Viz.* three hundred seventy five, what a brave *Fleet* of good *Ships* would it be? Especially, if it was joyn'd to the *Ships* that are now employed in Serving other *Ports*, in *England*, *Scotland*, and *Ireland*, with the others, in which we carry *Coals* to our Neighbours.

Thus much for *Fewel*, which costs the Nation nothing: but *Timber* comes under another Consideration.

tion; for if all within twelve Miles of a *Navigable-River*, were destroyed, we must have it further off, from *Home*, or from *Abroad*; if from *Home*, it will cost us no more than what the Growth of it will hinder other Productions, and that, I suppose, will be but small, because the Places within the twelve Miles where it doth grow, will produce as much of any other useful thing, as the Places farther off, where it may grow; and if it must grow somewhere in *England*, the Learned *John Evelyn*, Esq; in his excellent Book, called *Sylva*, will shew how men may husband so their *Woods*, as to have much more on an *Acre* than usually they have.

But if it shall be more a *Private Interest*, to fetch *Timber* from *Abroad*, then from the *In-Land* Countrey; I believe 'twill be done; but then 'twill employ another sort of *Shipping*, and increase us in some measure like the *Coal-Trade*: but thus it will cost some Money; it's likely it will; but what then? It will also get some Trade for *Tobacco*, *Stockings*, *Wastcoats*, *Course Cloths*, and several other things in those Parts. And in the second number of the first *Volume* of these *Collections*, treating of the Matter and Use of *Money*, I have shewn, That if we do not Export our *Money*, 'twill do us no good. And I pray, how do we get our *Money*? Why, truly, we carry our *Product* or *Manufacture* to *Spain*, and there for it get *Money*; and this *Money* we carry to *Norway*, and Swap for *Wood*; and what the difference is, (except a little more Employment for *Ships* and *Seamen*, which we reckon *Happiness*) between this, or carrying our *Manufacture*, or *Product*, directly to *Norway*, I profess, my *Understanding* won't direct me to.

I think here is enough said, to shew that this destruction of *Wood* within twelve *Miles* of a *Navigable River*, will be no *Loss* to the *Publick*. Now it will be necessary to shew, that a *Gain* will follow.

I reasonably believe, that in the Place where *Wood* now grows, if it were grub'd up, *Corn*, *Cattle*, or somewhat else as profitable to the *Private Man*, would quickly be. If *Corn*, then it will follow, that if we have enough already, we may *Export* some; and whatsoever we bring in for that, will be clear *Profit*. But if by reason of the *Plenty* of *Corn* Abroad, it shall hardly be worth the *Private Man's* while, to *Export*; yet, if we *Brew* more *Strong Beer*, *Ale*, or *Mum*, *Breed* more *Horses*, *Fatten* more *Swine*, or do any thing of the like nature, and *Export* them, it will turn to a *Publick Profit* as well, perhaps better, than if we had *Exported* our *Corn*. But, if this Increase of *Corn* should still cheapen it, and by that means give a *Discouragement* from *Sowing* it within these twelve *Miles*, or some other Places, I cannot yet believe, that this will cause the *Land* to be given away, or to lye quite waste; but rather it will put Men upon considering, how to improve it to better Purposes, and that in likelihood will still find Employment for more People, and turn to some publick Advantage; for it will supply us with *something* we quite want, or increase us *something* we have not enough of, or enable us to supply our Neighbours with *something* that we have too much on.

If we increase in *Cattle*, it will do the like as in *Corn*; particularly, we shall, if they be Cheaper, so much more hinder the *Importation* of them from Abroad, If any comes; and have the more *Wool*, *Hair*, *Horns*, and *Hydes* for a further *Manufacture*: and whatsoever we fetch in for these, or such like *Products* or *Manufactures*, will be so much more *Gain*, than would be by the standing of *Wood*; though I must also confess, that if by an *Excize*, *Allowance* for *Exportation*, a *Higher* Manner of Living, making of *Stronger Drink*, or any other Contrivance, we could make our *Plenty Dear*, 'twould be a great Advantage; for then our *Poor* will stoutly work; but otherwise it never agrees with them.

Now I have said thus much for the Destruction of *Fewel* and *Timber* in all Parts of *England* that are within twelve *Miles* of a *Navigable River*, I will, to make this Matter more plain, endeavour to answer such *Objections*, as I find to seem against it.

And first, I'll consider what is said by my very good Friend, the Ingenious Mr. *John Worlidge* of *Petersfield*, in *Hampshire*, one, who for his great Pains and Industry in promoting the *English Husbandry*, deserves a Name as lasting as *Virgil*, or *Columella*. This good Man, in the 72d. Page of his Second Edition of *Systema Agriculturae*, being the sixth Chapter, and treating of *Woods*, saith thus; 'What can be more profitable than *Woods*, or *Trees*? 'Which will thrive and increase on the most *Barren* and *Unfruitful Land*, be it either *Wet*, or *Dry*, *Cold*, *Mountainous*, *Uneven*, *Remote*, or never so unapt for 'any other manner of *Culture*, where neither *Corn*,
'*Grass*,

‘*Grass*, or any other necessary, or useful *Vegetable*
 ‘will hardly grow, yet may we there perceive the
 ‘*Lofty Woods* flourish, far exceeding in Value the
 ‘Purchase of the Land without them; and instead
 ‘of injuring the *Land* whereon they stand, it is much
 ‘bettered and capacitated to bear *Tillage* at the Re-
 ‘moval of the *Trees*; also the other Bordering
 ‘*Grounds* yield a greater Increase of *Corn* or *Grass*,
 ‘by their Defence from the Extremity of the *Cold*,
 ‘and *Bitter Blasts* in the *Winter*, and the *Schorching*
 ‘*Drought* in the *Summer*.

That which I’ll say to this, is, I have shewn already in the fore-going History, of an *Honourable Person* and his *Steward*; that *Corn* ordinarily is much more profitable, both to *Private* and *Publick Wealth*, than ordinarily *Wood* is, (extraordinaries I’ll consider anon) and I have lately met another Story, from the Mouth of a worthy *Gentleman*, a very good Friend of mine, within seven Miles of *Bedford*; who, possesseth as fine a *Wood*, as any of his Neighbours, but the *Underwood* yields him but six pounds once in thirteen Years; by Perswasions of a *Tenant* of his, he grub’d up forty *Acres* of this *Wood*, for which, *Viz. Timber* and *Underwood*, he put a good Summ in his *Pocket*, and hath Lett a *Lease* of the *Land* for one and twenty Years, at fourteen Shillings an *Acre*; and is told by his *Tenant*, that when his *Lease* is out, ’twill be worth a Pound an *Acre*. And the thirty *Acres* of *Wood* I before gave you an Account of, is not many Miles from this Place; and I know not why it might not have Lett for as much as the other, although my Friend would not suppose it to Lett for more than five Shillings the *Acre*.

I will not deny, but some sort of *Trees* may thrive and increase on any manner of *Land*, but that there should be any Place where *Trees* will flourish, & hardly any other useful *Vegetable* grow, I much question; for *Potatoes* grow in *Barbadoes* between the *Rocks*, where hardly Earth appears; *French Furzes* on *Sand*, that was thought fit for nothing but Mischief; *Grass* on *Sands* in *Norfolk* and *Suffolk*, that were wont to flow *Forward* and *Backward* by the *Winds*, as *Water* doth by *Tydes*, as I have shewn in the first *Volume* of these *Collections*. Is it not common for high *Plants*, to grow on old *Stone-Walls*, and tops of *Houses*? *Juniper*, *Thorns* and *Thistles*, almost any where? And ’tis said of *St. Foyn*, *If it be Sown on the Poorest and Barrenest Land we have, it will thrive, and raise a very considerable Improvement; for on Rich Lands the Weeds destroy it; besides, it meliorateth and fertilizeth the Land whereon it hath stood for many Tears, and not Barreniseth it, as is usual with Annual Seeds. You may break it up, and sow it with Corn till it be out of Heart, and then Sow it with St. Foyn, as formerly; it will thrive on Dry and Barren Grounds, where hardly anything else will, the Roots being great and deep, are not so soon dried by the parching heat of the Sun, as of other Grasses, they are.*

I’ll grant, that *Trees* may better the worst sort of *Land*, and capacitate them to bear *Tillage* at the Removal; but would it not also improve that *Ground*, if there were only some Rows of *Trees*, and some other more profitable *Vegetables* cultivated between; and might not some *Pear-Trees*, or other, that bear *Fruit*, serve as well as those that are only for *Fewel* or *Timber*: truly, I see no reason to the contrary: and I query, whether upon some sides
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of these barren *Hills*, would not grow *Vines*? And on other sides, some other *Fruit-bearing Shrubs*? I wish some well-minded Gentleman would make the Experiment.

Mr. *Worlidge* gives several Instances of great Profits made by *Wood*; particularly, a *Hill*, for *Corn*, or *Grass*, not worth five Shillings an *Acre*, that in twelve years time, the very *Coppice-Wood* hath been sold for twenty pound an *Acre*; and at the next seven years end, 'twas likely 'twould yield the same value. And from Mr. *Blyth*, he quotes a new *Plantation*, that in eleven years time, made sixty pound an *Acre*: and others, of *Poplar*, *Willow*, and *Sallow*, that yield five pound an *Acre* at seven years Growth. These are great Advantages; and what Mr. *Worlidge* affirms of his own Knowledge, I believe; and what from others, I don't question: but surely they grew in some Places where *Wood* was extraordinary scarce, or they did not think of being supplied with *Coals*, or the *Wood* was fit for *Pike-Staves* in time of *War*, *Hop-Poles*, *Coach-Poles*, or some other extraordinary Occasions, or the *Land* was extraordinarily fit for it; but however it was, if I had such, I believe I should except it from my *General Rule*: yet let the Profits be what they will, there are Examples of Profits from very contemptible Land, from new *Husbandries*, that will vie with them: but for ought I can learn, there are very few Places now in *England*, unless by great *Towns*, where the *Coppices* will yield by the *Acre*, one year with another, more than ten Shillings a *Year*, and a great many Places where they won't yield that. And of this, those that have the Curiosity to enquire, may

In the mean time, I question not, but you eagerly expect to hear what may be said in Answer to Mr. *Evelyn's Sylva*. There, he seems to be quite of another Opinion, and to give many Instances of Profits from *Woods*, so great, that few other Parts of *Husbandry* can equal them.

I must confess, Mr. *Evelyn* is a great Man, One that I have the Honour to be acquainted with, and happy is he that is so; he is a Gentleman of great *Piety*, *Modesty*, and *Complacency*, and also endowed with such an universality of useful Learning, that he may very well be esteemed a *Darling of Mankind*. But he is particularly well vers't in the Affairs of the *Woodman*, and his *Sylva* is so good a Book, that I have not heard of any thing written on the Subject like it. To answer it, I'll not pretend; to gainsay what he affirms, I can't; for I believe he loves *Veracity* more than *Life*: I'll only make some *Observations*, and if my *Sentiments* differ from his, I know he'll pardon me, he being well inclin'd to allow freedom of *Thought*; and also well vers't in a *Motto*, NULLIUS IN VERBA.

Now, I first observe, the Reasons why this *Sylva*, or Discourse of *Forrest-Trees*, was delivered to the *Royal Society*. It was, as I am told, in the Title-Page, upon Occasion of certain *Queries* propounded to that Illustrious *Assembly*, by the Honourable, the Principal Officers and Commissioners of the *Navy*. What these *Queries* were, do not altogether appear; but by the Discourse, one of them seems to be; *How*
I *Tim.*

Timber might be propagated in his Majesty's Dominions? An Answer to this, our Ingenious Author hath bravely given. But my Considerations are not, *How, or how not to propagate Timber*: but a Query, *Whether 'tis best, within certain Limits, to Propagate it, or no?* A Thing quite beside his Design. Indeed, in his *Introduction*, he, like a very good English Man, laments the notorious Decay of our *Wooden Walls*; which he thought likely to follow, when our then present *Navy* should be worn out, or impaired: and I must confess, when he considered the great Destruction of our *Wood*, that had been made (in the foregoing twenty Years) by some through *Necessity*, and others through ill Ends and Purposes, together with our not being used to fetch much *Timber* from Abroad, and a general Cry, that none could furnish us with any (for *Shipping* especially) so good as our own; with the addition of what amounted to a *Complaint*, from the Honorable *Commissioners* of his Majesties *Navy*: when he considered all this, I say, every good Man will rather commend than blame his *Zeal*. But now, since that destruction of our *Timber* hath forc'd us to look out for a more convenient Supply, to *London*, and some other Places, and our having greater Experiences of *Sea-Fights*, than ever we had before, other things are known. And 'tis believed, to my certain Knowledge, by some of the *Commissioners* of the *Navy*, and others that have been greatly concerned in building of *Ships*, that there is some other *Timber* in the World, that will build *Ships* as well as ours: for Instance, the *French Ruby*, that we took from *France*, when he joyn'd with *Denmark* and *Holland* against us, had such good *Timber* in it, that as I have
been

been told, *England* never had better; the *Bullets* that entred this *French Ship*, made only round holes, without *Splinters*; the thing our *Timber* is valued for; and it was so hard, that the *Carpenters* with their Tools, could hardly cut it, 'twas like a piece of *Iron*: I fancy it some of that *Oak M. Evelyn* speaks of in his forecited *Sylva*, Chap. 3. Pag. 25. 'There is (saith he) a kind of it so tough, and extreemly Compact, that our sharpest Tools will hardly enter it, and scarcely the very *Fire* it self, in which it consumes but slowly, as seeming to partake of a *Ferrugineous*, and *Metallin* shining Nature, proper for sundry Robust Uses.

These last thirty *Ships* that were built, have a great deal of *Forreign Timber* in them; and altho there is some Decay in them already, yet, I am told, that the Fault is not attributed to the *Forreign Timber*, but rather to the hasty Building, the King having not a *Stock* before hand, the *Timber* had not time enough for a *Seasoning*.

For these Reasons, and what I said before about the Increase of *Seamen*, perswades me to believe that such means will never lessen our Strength; and, I question not, but that for our *Money*, we may be furnished sufficiently from Abroad. But more of this hereafter.

In the thirty fourth Chapter of the aforesaid *Sylva*, are a great many Examples of Immenfe Profits from *Wood*: upon Consideration of which, I would advise our *Wooded Men* to make Calculati- on much after the Rate as I have done with the Person of Honour's *Steward*; and if they find, that the Sowing for *Wood*, is likely to prove more Advantageous than otherwise, let them do it in God's

Name ; but I would advise them to compare extraordinary Profits by *Wood*, with extraordinary Profits by *Corn*, or other *Husbandries* ; and take notice, that if according to Captain *Smith's* Account (in Page 248 of *Sylva*.) an *Acre* of Land that hath several Rows of *Trees*, will yield ninety *Bushels* of *Corn* in three years, at five Shillings the *Bushel*, besides *Straw* and *Chaffe*, &c. Then the same *Acre* of Land, if the *Trees* be grubbed up, may yield upwards of seven pound, ten shillings a Year. And if the Person of Honour's thirty *Acres* of *Wood-land* before mentioned, had, (if grubbed up) instead of a *Crown*, been supposed at this rate, what a Summe would it have amounted to !

Besides what is already said, I find several other *Objections* ; and the first is, *If all our Wood within twelve Miles of a Navigable River should be destroyed, it will make Fewel and Timber very dear.*

To this I answer, That if it doth, and the Ground where *Wood* useth to grow, will yield a greater Profit, it is no Matter ; but we see the contrary ; for where there are abundance that Trade in one Commodity, and independent one of another, there will be several, whose Necessities will oblige them to sell *Cheap* : and this we see in *Coals* ; for, notwithstanding the *Duty* of three Shillings a *Chalder*, they are commonly delivered to our Houses in *London*, in *Summer* time, for nineteen, or twenty shillings the *Chalder*, that is, sixteen, or seventeen shillings besides the three Shillings. And although I knew *London* some years before this *Act* for three Shillings

lings was made, I never knew *Coals* cheaper. And for *Timber*, notwithstanding the great Consumption hath been made, in building the City of *London*, the Town of *Northampton*, our thirty Men of *War*, other Merchants *Ships*, &c. Yet by reason of our many independent *Timber-Merchants*, we have more Plenty than ever, and I am told, much cheaper than usually it was wont to be ; and the reason is plain, for when there is a great Trade for a *Commodity*, every body strives to get it ; and he that can afford to sell *cheapest*, sells *most*, and gets *most* ; wherefore he hunts out all Places where he can get it cheapest, and likewise studies all the ways that may be, to bring it home at the cheapest Charge, and others strive as well as he ; and at the Places of Growth they are at strife too, who shall sell cheapest, that they may have the Trade from their Neighbours : and thus it will ever be, only in *Commodities* that can be had from some one Man, or one Combination of Men, and no where else. But here it is not so, we can have *Timber* from divers Places. But if his Majesty should be pleased to resolve to have none but *English Timber* for his Royal *Navy*, what hurt, I pray, would it be to the Kingdom, to fetch it more than twelve *Miles* from a *Navigable River* ? What Loss would it be, if when the *Parliament* think fit to give the King six hundred thousand Pound to build *Ships*, they, upon this Consideration, should give seven hundred thousand Pound ? Would it not be spent among our selves, and find Employment for a great many *Cattle* and *Lazy People* ? It might be the means to make more *Rivers* Navigable ; and our bad *Roads*, if possible, to be amended.

An other *Objection* is, *We shall want Wood for Iron-Works, Flint Glasses, &c.*

This, I scarce believe, for *Billets, Faggots*, and such like, we may be, and are furnished withal from Abroad, as well as with *Timber*. But rather than fail, we may take *Mr. Evelyn's*, and *Mr. Worlidge's* Advice, and improve our barren *Lands* and *Wastes* in the *In-Land* Countyes.

A Third *Objection* is, *What shall we do for Bark for Tanners?*

To this, I answer as before, the *Inland* Countrey is enough to furnish us; but if it were not, we might very well be supplied from Abroad, 'tis only rasping, and breaking of it small, and the *Freight* will amount to no great Matter: and 'tis a great Question with some, whether we are necessitated for *Oak-Bark*, to *Tann* with, as our *Plenty* makes us suppose: I have heard, *Tobacco-stalks* will do it very well: and *Mr. Evelyn*, in *Chap. 3d.* of the aforesaid *Sylva*, pag. 27. thinks 'That the *Cupps* of our *Acorns*, would *Tann* *Leather* as well as the *Bark*; and wonders, no body makes the Experiment. In *Chap. 16.* pag. 69. the *Tops* and *Loppings* of *Birch*, is call'd *Mr. Howard's* new *Tann*. In *Chap. 25.* pag. 127. 'tis said, That the *Cork-Tree* hath, beneath the *Cortex*, or *Cork*, two other *Coats*, or *Libri*, of which, one is *reddish*, which they strip from the *Be* when 'tis fell'd, oily; and this bears good Price with the *Tanner*. And in *Chap. 30.* pag. 177. he saith, They have in *Jamaica*, the *Mangrove*, *Olive*, and a *third*, whose *Barks* *Tann* much better than do ours in *England*;

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land; so as in six *Weeks* the *Leather* is fit to be employed to any Use.

If these things be true, then I do not much question, but by Enquiry might be found out, what Quality in the *Oak-Bark* it is, that causes the *Leather* to be *Tann'd*; and if that be found once, we might, I believe, quickly find out a great variety of other things, fit for the same Purpose.

The fourth *Objection* is, 'I will pull down the Price of our other *Lands*.'

What care I for that, if all together, they'll yield a greater Employment, and yield any thing more: if this *Objection* should be minded, we must forbear all other sorts of *Improvements*, and the *Fenns* must be let into the *Sea* again. But there is a way to remedy even this *Complaint*, and one that we have Experience of, *Viz.* If the *Parliament* will think fit to present the *King* with a *Month's Tax* of *seventy thousand Pound*, once a Year, to bear the Charge of an Allowance, as formerly, for the *Exportation* of *Corn*, for then it did cost the *King* almost as much; I am sure, in one Year, upwards of *sixty thousand pound*; for I have seen the *Account* from the *Custom-House*. Methinks, if any *Gentleman* will promote a *Bill*, this may easily be done, seeing it is so much for the *Subjects* Benefit; and if the *Countrey Gentlemen* will not encourage their *Representatives* to it, by my Consent, they shall not be pitied, although their *Tenants* should fail in their *Payments*.

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A fifth, and more material *Objection* than all the rest, is, *That if our Neighbours will confederate, we may be put to streights for a Supply in Time of War.*

As I said before, no greater streights, than to fetch a little further, from the *In-land* Countries. But, I pray, what Reason is there for this our Fear? 'Tis plain, that the more we want *Wood*, the better we may be stored; witness, our great Plenty in the *Timber-Docks*, and on the *Wharfs* on the *River of Thames*, since the *Fire*: and 'tis commonly said, That the *Dutch*, who have hardly a *Stick*, but *Willows*, growing in their Countrey, are far better supplied with *Wood*, than most of their Neighbours. And *Box*, *Lignum-Vite*, *Sassafras*, *Logwood*, and a great many others we abound with.

'Twill be very hard, if all the *World* should agree against us at once, and that Profit should tempt none of them to betray the other: it doth not use to be so; neither are we, as I can hear, much concerned, for fear they should combine, to hinder us of *Masts*, *Cordage*, *Pitch*, and *Tarr*; and a stop of these, by their *Confederacies*, may undo us, as well as a stop of *Timber*. But I hope none of these will happen: before we make a *War*, we shall supply our selves with sufficient Stores; and then, a *Fig* for any shall dare to Attach *Us*.

Much more might be said on this Occasion, but I am loth to tire my self, or you: yet pardon me a little, to tell you, that although I have endeavoured to shew you what I think, will be for the Profit of the Countrey; yet I am not unsensible, that
if

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if a Man hath more Money than he needs, then, whatsoever honest thing delights him, is better to him than that *Money*: therefore, for my part, I would incourage, rather than dehort *Countrey Gentlemen* to have about their Seats, *Woods*, for Ornament, Shade, and Shelter; I would also allow them for *Hedge-Rows*, for Fence and Shelter to the *Ground* and *Cattle*; for I would have no *Place Waste*; and to what better use to put these *Hedge-Rows*, I know not, unless we could be perswaded to fill them with *Fruit-Trees*; which I think much better.

Water-sides I also allow, where they hinder not the bringing up of *Boats*, or *Barges*, for there will grow *Oziers* for the *Basket-man*, and other *Trees* of quick Growth, and great Advantage for several *Manufactures*, some *Faggots* for our *Chambers*; and the *Bankes*, by help thereof, will be well supported.

I also approve to have *Woods* on such *Lands*, where nothing else will grow, if there be such; which I much doubt.

And *Parks*, which although they are for the most part, very ill Husbandred, yet, they generally belong to *Rich Persons*, and are not altogether without their Use; particularly, to their *Owners*, they make, or preserve a *Grandeur*, and cause them to be respected by their poorer Neighbours; they preserve and increase *Venison*, a *Rich* and *Estimable Food* for the greatest *Princes*; and what bears good Price, and keeps good Friendship within the *Cities*, *Towns*, and *Villages*: they make a *Recreation*; without which, most of our *Improvements*, and *fine parts* intem, of all our *Trades*, are insignificant: they
K breed

breed up young *Cattle*, and are most excellent for the *Rearing* of *Colts*; they, very much improving, on a hard *Ground*, and a large *Circuit*, thereby exercising their *Heels* and *Breathings*. These *Parks* keep among us, an esteem for good *Hunting Horses*; and would, if free from other *Excesses*, preserve to their *Masters*, very great *Health*, and good *Complexions*; and may there, if any where, within the twelve *Miles*, be increas't *Oaks*, for the *Glory* and *Strength* of our *Kingdom*; and *Acorns* to fatt our *Hoggs* with; the *Beast-Skins* of these *Parks*, make us a great *Manufacture*; and *Hounds* in a *Wood* are none of the least part of our pleasant *Musick*. Many other *Advantages* may hence accrew; but I think, here are enough, to make us allow of some *Parks*, till a *Popularity*, and *Want* of good *Ground*, doth urge the *Contrary*.

Upon a serious *Consideration* of all that hath been said, I think it will appear, that the *Destruction* of our *Wood* every where within twelve *Miles* of a *Navigable-River*, would be advantagious, both to the *Private* and *Publick Wealth*, and that it will increase our *Navigation*, *Popularity*, and *Strength*. But however, I humbly submit it to the *Censure* of all *Honest* and *Ingenious Men*; promising, that I shall be very ready to change my *Mind*, when ever they'll be pleased to shew me good *Reasons* to the contrary; But if they cannot, and will still go on, to increase, or preserve their *Woods*, they must pardon me, and others, if we should happen to think, that they are *Men* void of *Reason*, or that love their *Humours* before their own *Profit*, or their *Countrey's Welfare*.

In

In this, and all other of the like *Nature*, I hope, you'll pardon the *Failures*, and accept of the *Good-Will* of, Sir, your humble *Servant*, &c.

A Relation of the Culture, or Planting and Ordering of Saffron; by the Honourable Charles Howard, Esquire; extracted from the Philosophical Transactions No. 138.

SIR, Although this *Account* be already *Printed* by the *Ingenious Dr. Nehemiah Grew*, yet presuming it may be of great *Use*, and fall into many hands, where those most excellent *Treatises* will not, I having leave, offer it to you, as follows.

Saffron heads, planted in a black, rich, Sandy Mold, or in a mixt Sandy Land, between white and red, yields the greater Store of *Saffron*.

A Clay or Stiff ground, be it never so rich, produceth little *Saffron*; though increase of Heads or Roots, if the *Winter* prove mild and dry: but the extremity of cold and moisture will rot them. So that the finest light Sandy Mold, of an indifferent fatness, is esteemed most profitable.

Plough the *Ground* in the beginning of *April*, and lay it very smooth and level.

About three weeks or a month after, spread upon every *Acre* twenty Loads of rotten *Dung*, and plough it in.

At *Midsummer*, plough it again, and plant the *Saffron* heads in rows, every way, three Inches distant one from another, and three Inches deep.

The most expedite way of planting, is to make a Trench

Trench the whole length of the Field, three Inches deep with a Spit-shovel.

The Spit-shovel is to be made of a thin streight Iron, ten Inches long, and five Inches broad, with a Socket in the side of it, to put a staff or handle. Lay the *Saffron*-heads three Inches distant in the Trench, and with the shovel spit up three Inches of Earth upon them.

Observe this order in planting whole Fields, whereby the Heads will lie every way three Inches square one from another. Only Paths or shallow Trenches are to be left two or three yards asunder, which serve every year to lay the weeds to rot, that are to be weeded and pared off the ground.

As soon as the Heads begin to shoot or speer within the ground (which is usually a fortnight before *Michaelmas*) howe, or pare the ground all over very thin: and take lightly all the Weeds and Grass very clean, lest it choak the Flowers, which will soon after appear; and are then to be gather'd, and the *Saffron* to be picked and dried for use.

The Ground must be very carefully fenced from Sheep or Cattle, which by treading, break the *Saffron* grass, and make the Chives come up small.

In *May* the *Saffron*-grass will be quite withered away, after which, the Weeds and Grass the ground produceth, may be cut or mowed off from time to time, to feed Cattle, till about *Michaelmas*; at which time, the Heads will begin to speer within the ground.

Then howe, pare, and rake the Ground clean, as before, for a second Crop. The like Directions are to be observed the next year for a third Crop.

The *Midsummer* following, dig up all the *Saffron*-heads, and plant them again in another new Ground (dunged

(dunged and ordered as aforesaid) wherein no *Saffron* hath been planted, at least, not within seven years.

The Flowers are to be gathered as soon as they come up, before they are full blown, whether wet, or dry.

Pick out the *Chives*, clean from the shells or flowers, and sprinkle them, two or three fingers thick, very equally, on a double *Saffron*-Paper. Lay this on the Hair-cloth of the *Saffron*-Kiln, and cover it with two, or more *Saffron*-Papers, a piece of Woolen cloth or thick *Bays*, and a Cushion of *Canvas*, or Sack-cloth filled with Barly-straw, whereon lay the Kiln-board.

Put into the *Kiln*, clean, thoroughly kindled Charcoal, Oven-coals, or the like, keeping it so hot, that you can hardly endure your fingers between the Paper and the Hair-cloth.

After an hour, or more, turn in the edges of the Cake with a Knife, and loosen it from the Paper. If it stick fast, wet the outside of the Paper with a Feather dip'd in Beer, and then dry the Papers. Turn the cake, that both sides may be of a colour.

If it stick again to the Paper, loosen it, and then dry it with a very gentle heat, with the addition of a quarter of 100^l. weight laid upon the Kiln-board.

The *Saffron*-cake being sufficiently dry'd, is fit for Use, and will last good many years, being wrapt up, and kept close.

The best *Saffron* is, that which consists of the thickest and shortest Chives, of a high, red, and shining colour, both without and within alike.

Saffron is oftentimes burnt, and in knots, spotted and mixed with the yellows that are within the shells.

It's usually observ'd, that one Acre doth yield, at the least, 12 pounds of good *Saffron* one year with another, and some years 20 pounds.

Good *Saffron* is seldom, or never, sold at so low a rate as 30 shillings *per pound*, frequently at three pounds *per pound*, and upward. Wherefore one Acre bearing 12 pounds at 40 shillings the pound, cometh to 24 pounds *per annum*.

The gathering and picking of one pound of *Saffron* is worth one shilling, which cometh to twelve shillings *per Acre*.

The Fire and care of drying, may come to 3 shillings more, at 3 pence the pound; which is in all 15 shillings.

The Grass that is mowed and cut off the ground for the use of Cattle, will be very near worth as much as will countervail the picking and drying the *Saffron*; the Soyl being enrich'd, not only by the Dung, but the *Saffron* it self, as appears by the rich Crops the ground yields for several years after, without any other Manuring or Improvement.

Sixteen Quarters of *Saffron* heads, are sufficient to plant one Acre. A Quarter of these heads is usually sold in the place for 10 shillings, which comes to 8 pounds *per Acre*.

Twenty Loads of rotten Dung laid on the ground, may be worth 40 shillings at 12 pence a Load for the Dung, and as much for carriage into the Field.

For thrice ploughing the ground, 20 shillings.

For planting the heads about 4 pounds, which in the whole makes 14 pounds, the charges of planting an Acre, which will bear three crops.

So that all things reasonably computed, it appears, that an Acre of *Saffron* will be worth, notwithstanding

ding all Casualties, one year with another, over and above the 14 pounds charges, for the first years planting (at the least) 20 pounds *per annum*. Besides the great increase of the *Saffron* heads, which will be as three for one.

The Kiln.

It consists of an Oaken-Frame, lathed on every side, twelve Inches square in the bottom, two foot high, and two foot square at the top; upon which is nailed a Hair-cloth, and strained hard by wedges, drove in to the sides; a square Board and a Weight to press it down, weighing about a quarter of a hundred.

The insides of the Kiln cover'd all over with the strongest Potters-clay, very well wrought with a little Sand, a little above two inches thick.

The bottom must be lined with Clay four or five inches thick, which is the Hearth to lay the fire on: herewith is to be made a little hole to put the fire. The outside may be plaister'd all over with Lime and Hair.

Ad.

Advertisement.

Through want of sufficient Care there are some Errata's in the First Number of this Second *Volume*, Entitled, *A Token for Ship Boys, or, Plain Sailing made more Plain*, By *Adam Martindale* of *Cheshire*, which *Errata's* shall be Printed by themselves for the Conveniency of those that have or shall have them Papers only; and they may be had where the Books are *Gratis*.

The Author and Collector hereof sells by the pound, *Chocolate* of several sorts, so good that he thinks none sells better: and one sort especially that is made with the best sort of *Caracca Nutts*, and but with a very little *Sugar*, without *Spice* or *Perfume*.

London, Printed by *J. Gain*, for the Author, *John Houghton*, and is to be Sold at his House, against the *Ship-Tavern* in *St. Bartholomew-Lane*, behind the *Royal Exchange*; By *John Lawrence*, at the *Angel* in *Cornhill*; By *Moses Pitt* at the *Angel* in *St. Pauls Church-Yard*; By *William Cudde*, at the *Popes-head* in the *New-Exchange*; By *Dorman Newman*, at the *Kings Arms* in the *Poultry*. And several other Bookellers, 1683.

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COLLECTION OF LETTERS

For the Improvement of Husbandry & Trade.

TUESDAY, December 11th. 1683.

The Contents. Enquiries relating to Husbandry and Trade, drawn up by the Learned Robert Plot, LL. D. Keeper of the Ashmolean Museum, and Professor of Chymistry, in the University of Oxford, and Secretary of the Royal-Society of London. A Account of the manner of making Brunswick-Mum. An Account of a great Improvement of Mofsie Land, by Burning and Limeing, from Mr. Adam Martindale of Cheshire.

Enquiries relating to Husbandry and Trade, &c.

SIR, IN my former Volume, No. 1. pag. 6, 7, 8, 9. I gave you some Enquiries concerning Agriculture, drawn up by that great Philosopher, and Incourager of all useful Learning, the Honourable Robert

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Robert Boyl, Esq; which I extracted out of the *Philosophical Transactions*, No. 5. pag. 79. To which *Enquiries* I have received several *Answers*, as, About *Purzes* in No. 2. pag. 28. in Vol. 1. Remedies against the uncertainty & loss of *Crops, Smuts, Meldews, Lodgings of Corn*, and its being eaten up by *Birds*: from Dr. Robert Plot, in No. 3. pag. 31, 32, 33, 34. *Smuttiness in Corn*: from Mr. John Smith, in No. 5. pag. 47, 48. The manner of Improving *Land by Marle*: from Mr. Adam Martindale of *Cheshire*, No. 6. pag. 55, 56, 57, 58, 59. As also, a second account about *Marle*, from the aforesaid Mr. Adam Martindale, in No. 11. pag. 120, 121, 122, 123, 124, 125, 126. A great Improvement of *Land by Parsly*, from Mr. John Worlidge, of *Petersfield*, in *Hampshire*, the Author of *Systema Agriculturae, Systema Horticulturae, and Vinetum Britannicum*, No. 12. pag. 136, 137, 138, 139. And in No. 2. of this second Volume, pag. 33, 34, 35, 36, 37. There is an Account from the Reverend R. G. of *Burling*, near *Walsfleet*, in *Essex*, of a new manner of *Plowing*; whereby he hath done as much in three days, with two small *Bullocks*, and one *Man*, as his Neighbours could do with four stout *Horses*, and two *Men* in eight days; or, as much for five, or six *Shillings*, as used to be done for eight and forty *Shillings*.

And besides these, by degrees, I hope to have several more *Answers*, according as *Gentlemen*, who wish well to their *Countrey*, shall fall to the *Consideration* of these *Papers*; and that they may so do, I pray recommend all your *Friends*, to the perusal of those *Enquiries*.

Now, that I may see other men at work, who may

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delight in things not there mentioned, I'll give you some more *Enquiries*, being what, I think, relates to my business of *Husbandry* and *Trade*; and they are extracted from the *Enquiries* drawn up by the Learned *Robert Plot*, aforesaid, to be propounded to the most Ingenious of each *County* in his *Travels* through *England* and *Wales*, in order to their *History of Nature* and *Art*.

Concerning Waters.

Have you any *Salt Springs* in this *County*? To what *Uses* put? And how ordered?
 Are there any *Medicinal Waters* near this *Place*, of any unusual *Smell*, or *Taste*? and what *Effects* have they wrought? Do they tinge the *Stones*, or *Earth* near their *Exit*, of a *rusty*, or any other colour? Do they loose their *Vertues* in *Carriage*, or no? or let fall any *Sedement* in standing, and thereby become enervated? In general, What *Proportion* hold the *Waters* of this *County*, as to *Gravity* and *Levity*, comparatively among themselves, and with the *Waters* of other *Counties*?

Of these, it is probable, I may make good use, in order to the Improvement of the *Place*, as of *Epsom*, *Tunbridge*, *Dullidge*, *Bath*, &c. And also in order to *Dying*.

Concerning Earths and Minerals.

What *Variety* of *Earths* are there in this *County*? and how lye the *Beds* of the *Mould*, *Clay*, *Sand*, &c. one above another? Have you any *Sands*, or *Earths* of use hereabouts, such as *Sands* for the *Glass-houses*,

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for Improvement of Land, Fullers Earth, Boles, Peats, Oshers, Tobacco-pipe Clays, Black Chalk, Ruddle, Umber, Clays famous for Brick, or Tyle; or other Earths remarkable for their Colour, Weights, Smell, Taste, &c. What Marles have you in this County? How deep do they lye from the Surface of the Ground? what the depth of the Marles themselves, and what their Colour? Upon what Grounds are they chiefly used, and at what time laid on? How many Loads to a Statute-Acre? What Grains will Marled-Land bear best, and how many year together? How such Marled-Land is to be used afterwards? Is there any Cole dug hereabouts?

Have you any Minerals found, or dug in this County, such as Sulphur, Arsenic, Orpiment, Calamy-Stone, Black-Lead, Vitriol, Alum-stone, Cole, Amber, Jet, Niter, Salt? Or doth there any Naphta, or Petroleum swim on the Water, or distill from any Rock hereabouts?

Concerning Stones.

Know you of any Stones, not common, in this County, such as Hyacinths, Emeralds, Ashats, Jaspars, Christsals, Emery, Spars, Marbles, Serpentine, Manganese, Magnets, Atites, or Eagle-Stones, Gold-stones, transparent Pebbles, &c? Are there any Stones found here, curiously wrought by Nature, either like Animals, as Oysters, Cackles, Escatops, Serpents, &c. Like Vegetables, as Branches, or Leaves of Plants, Melons, Olives, Apricots, Peaches, Pease? &c. Like Inanimate Things, as Spears, or Arrow-heads, Crosses, Globes, Stars, Drops of Water, Cakes, Sugar-Plumbs, Letters,

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of the Alphabet, Geometrical Figures? &c. What Quarries of Free-stone are there in this County? are they of a fine or course Grit, brittle, or tough? Whether good Fire, or Weather-Stone, or both? In what Order do the Beds lye? Do they dip, or lye in plano Horizontis? Whether better surbedded, in Work, or laid as they grew in the Bed? Are there any Quarries of Mill-stones, Grave-stones? &c. Of Lime-stone, or Salt-stone, near this Place, and what are the signs of their Goodness, or Badness? — Are there any Alabaster, or Quarries of Marble in this County? If so, of what Colour, or Hardness, and whether lineated with Veins of a different Colour from the Body of the Stone? Whether it be apt to cleave one way rather than another — Know you of any Body that hath invented, or is Master of any curious Plaster, Cement, or knows any excellent Earthen Materials, or Artifice for flooring of Barns, or other Rooms, Garden-Walks, &c. that shall not crack, or wear much in a very large time? Or, know you of any other Materials of this kind, of excellent use in Building, and wherein they excel.

Concerning Metals, &c.

Is there any Gold, Silver, or Electrum dug or found in this County: any Copper, Iron, Tin, or Lead Ores, any Bismuth, Antimony, Quick-Silver, Bell-Metal, Zink or Spelter, Zaffer, Manganese, Chrysocholla, or Native Green, Caruleum, or Native Blew, Cinaber, Lignum fossile, Amianthus, Fossile-teeth, or any kind of Ore, unknown to you.

Con-

Concerning Plants.

With what unusual Plants doth this County naturally abound? What Vegetables naturally flourish best in Sandy, Chalky, Clayie, or Marly Earths? &c. and what may be the supposed Reasons, why some Plants will thrive best, where some others will not grow? VVhat Vegetables naturally prosper best (or at least will endure over Minerals, or the Metallick Soils of this County? Or others, that abound with such and such Vapours? VVhat Salts are most appropriate to each Plant, and what Quantity? The exceeding whereof renders the Earth incapable of producing, or preserving, what Plants? Know you of any strange or prodigious Plants, or Trees, extraordinary, either in their Growth, Fruit, Leaves, or time of Blossoming? Or, have you any undescribed Plants, or others of special note, naturally growing hereabout? VVhat Quantity of Timber-Trees have you here, and what Trees be they that are accounted Timber? VVhat Rent have you for Wood and Timber, and at what value per Hundred, Load, Coard, or Tun?

Know you of any body hereabout, skilful in Gardening, that has observed what Manure is most proper for this, or that natural Earth, or what Earths are best mixed together, and for what Plants most agreeable? Has he observed what Insects are peculiar to Plants, and whether the same Plants have not sometimes different Insects, especially, in dry and wet years? VVhat are your usual means of preserving and improving Woods in this County, or has there any body any peculiar way of improving them here?

At

At how many years do they usually fell their Underwood, and Tall-wood, what parts of it for Fuel, and what for Uses, such as Axel-trees, Hop-poles, Floops, Stakes, Hurdles? &c. VVhither do you draw your Woods, or fell them together? VVhich of these accounted best, and for what Reasons?

Has there any body hereabout observed the Diseases of Plants, or knows ways of Prevention, or Cure; especially of the Blebs or Blisters we find on the Leaves of many Shrubs and Trees? Thinks he them infected from the Air without, or by Juices within, or by both? And when by one, or the other, or both together? & for what Reasons has he observed, that the Blisters of some Plants have Insects in them; others, Funguse's on their tops; others, that have neither? Knows he these Plants distinctly, and whither these things be not so accidental, that they sometimes interchangeably alter? VVhat are the Diseases of your Timber in this Country, by what signs may they be known, whither any way to be Prevented or Cured? Can any body hereabout inform how it comes to pass, that of the Seeds of many Plants, such as Oak, Elms, Ash, Beech, Yew, Juniper, Hemp, &c. there will come some Plants again, that will never bear Seeds? Or is there any body knows any other thing considerable concerning Plants?

Concerning Husbandry.

How many sorts of Grain are there Sown hereabout? And first, How many sorts of Wheat do you Sow hereabout? Any Double Wheat, Red-bearded Kentish-Wheat, Red-Lammus with Ailes, Red-Lammus without Ailes, the Red-stalks Wheat, White-Lammus

Lammas with Ailes, White Lammas without Ailes, Mixt-Lammas, Cone-Wheat, with Ailes, Cone-Wheat without Ailes, Square-grey with Ailes, otherwise call'd Dunover, Duckbill-Wheat, and Duke-Wheat, Square-grey without Ailes, Aleppo-Wheat, Poland-Wheat, Not-Wheat, Pendult-Wheat? Know you of any other sorts of Wheat sown in this Country, distinct from these; and for Land, have you observed any of these, or other to be best; & wherein do any of them excel? What Barlyes sown here, beside the Common Barly? Have you the Rath ripe, Conleard, Sprig of Livonia, Winter, Naked, and Not Barly sown here, or any other Barlyes? If so, for what Lands have you observ'd them best, and wherein do any of them excel?

As for Pease, do you sow hereabout the Henly-Gray the Blew Pea, Sandwich Pea, Hampshire Kids, the Horn gray, Early-white, Latter-white, Blew and green Pea, Bow-dyes, Red-Shanks, Cotswould Pea, Parteridge Pea, Black-ey'd Whites, small Rath-ripes, the Rose-Pea, the Horn-Pea, large Huscods? And as for Beans, do you sow hereabout the great Garden French Beans, Red and White, the middle Sort, Red and White, the Field Horse-Bean, Black and White, the least Bean? As for Vetches, do you sow hereabout the Gore-Vetch, Pebble-Vetch, Winter-Vetch, Rath ripe Vetch, Dilks, or Lentills? And as for Oates, beside Common Black and White, do you sow any Blew Oates, Naked-Oates, Bearded-Oates of N. Wales, Poland Oates, or any other Pease, Beans, Vetches, or Oates distinct from these? And for what Lands have you observ'd any of these, or others to be best, and wherein do they excel?

What unusual Grains sown you in this County, such

such as Wold, Wood, Hemp, Flax, Line-seed, Rape or wild Turnip, Caruways, Bastard Saffron? Know you any other such sown in this County, for what Land best, how to be ordered, and wherein do they excel? How many sorts of Grasses (the usual name for any Herbage sown for Cattle) do you sow here, such as Clover, Sanctfoin, Ray grass, or everlasting Grass, Lucern, Buck-Wheat, Medic? Know you of any other Grasses sown in this County, distinct from these? If so, for what Land best, how to be ordered, and wherein do they excell?

Has there any body hereabout found out any new Improvement of Arable, or Pasture-Land, or other Curiosity in Husbandry? As in Plowing, Sowing, Harrowing, Rowling, Howing, Hedging, Ditching, Planting, Grafting, Gardening? What variety of Soyls have you hereabout? Are they Sandy, Gravelly, Stony, Chalky, Clayie, Maummy? Have you any Light Mould, Red-Land, Stone-brash, Sour-Land, Marish, Boggy, Fenny, or Cold Weeping-Grounds? What particular Preparations are used to each of these, for each kind of Grain? VVith what kind of Manure improved? When, how, and in what quantity is the Manure laid on? At what Seasons, and how often are each of these Plowed for each Grain, and how long are these several Grounds let lye fallow?

How many sorts of Plows, Carts, Harrows, Rolls, Rakes, Forks, Homes, Skrys, Fans, Shovels, Spades, Mattocks, or other Instruments of Husbandry, have you in this Place, and wherein do they excell? How many ways of Sowing have you

you here? How do you preserve your *Corn* in the *Fields* from *Weeds*, *Flys*, *Birds*, *Worms*, *Moles*? &c. Also from *Bliting*, *Smutting*, *Meldewing*, and what are conceived to be the *Causes* of these? How do ye order your *Corn*, when *green*, if too *Rank*? &c. Have you any particular ways of *Harvesting* your *Corn*, *Dressing* it, or *Preserving* it in the *Mow*, or *Stores*, from *Rain*, *Heating*, *Rats*, *Mice*, *Must*, or other *Inconveniencies*? Has there any body hereabout any new ways of ordering their *Horses*, *Oxen*, *Cows*, *Sheep*, *Goats*, *Hogs*, &c. in their *Feeding*, *Working*, &c.

How are the abovementioned *Soyls* prepared, when they are used for *Pasture*, or *Meddow*? What are the several kinds of *Grasses* naturally growing in such *Grounds*, in this *County*? And which are the best accounted of, and why so accounted? How do you preserve your *Pastures* and *Meddows* from *Weeds*, *Moss*, *Sower-Grass*, *Heath*, *Fern*, *Bushes*, *Briars*, *Brambles*, *Broom*, *Rushes*, *Sedges*, *Juniper*, *Gorse*, or *Furzes*? What kind of *Grass* is fittest to be preserved for *Winter-Feeding*? And what *Grass* is best for *Horses*, *Oxen*, *Cows*, *Sheep*, *Goats*, &c? What are the chief *Circumstances* observed in *Cutting Grass*, and what in the *Making* and *Preserving* of *Hays*? Know you of any Body that has any peculiar way of *Inning*, or *Draining* *Marshes*, *Boggs*, *Fenns*, or of *destroying*, or *improving* *Furzy*, *Heathy*, or *Broomy* *Grounds*, or has any other *Improvement* whatever in *Husbandry*?

Concerning

Concerning Animals.

Do you know any body in this *County*, studious in *Insects*, an *Observer* of the *Works* of *Bees*, *Silk-worms*? &c. Or has any peculiar ways of *Ordering* them? Is there any body that has been curious in observing the *Origin*, the *Perfection* and *Corruption* of *Insects*, their *Diseases* and *Cures*? Are there any *Birds*, *Fishes*, or *Reptiles* peculiar to this *County*, and know you of any thing remarkable concerning them? Know you of any *strange Beast*, *Sheep*, *Goat*, *Dog*, *Hog*, *Horse*, *Ox*, *Cow*, *Deer*, &c. of any *unusual Quality*, or *mixt generation*, of *great Age*, or *wonderful Bigness*, or any other *Animal* that has been attended with any *unusual Circumstances*?

Concerning Arts.

Is there any body hereabout, that has invented any thing, or made any *Improvement* in any of the *Liberal*, or *Mechanick Arts*? In *Physick*, *Anatomy*, *Astronomy*, *Geometry*, *Arithmetick*, *Musick*, *Architecture*? Are there any *Buildings* hereabout, extraordinary in the *Whole*, or *Parts*, such as *Churches*, *Colledges*, *Town-halls*, *Conduits*, *Dwelling-houses* of the *Nobility* and *Gentry*, *Barns*, *Stables*, *Malt-houses*, *Mills*, *Stair-Cases*, *Chimney-pieces*, *Windows*, &c. What *Trades* are there peculiar to this *Place*?

Know you of any stupendious, or curious *Engines*? Is there any body eminently Curious in this Town, or any body that has any thing peculiar to himself in *Clock-work, Lock-work, Carving, Painting, Graving, Etching, Dying, Weaving, Needle-work, Straw-work,* or any other Handicrafts? Where by the way, let it be noted, that the Undertaker of this design desires not to dive into the Myſtery of any Trade, but only to repreſent Matter of Fact, and ſo many of the Circumſtances as may be communicated without diſcovery of the Myſtery.

Finally, if any body deſire to be further informed in the nature of this Deſign, let him conſult the natural Hiſtory of *Oxfordſhire*, already extant.

Thus much I thought fit to extract from the Paper of Enquiries, drawn up by the aforeſaid Dr. Plot.

Now in order to make my *Collections* profitable to the Kingdom in general, and a great many men in particular. I hope, that all who have any kindneſs for this Undertaking, will give their beſt aſſiſtance to Sir; your moſt Humble Servant,

The

The Manner of making Mum, according to the Direction recorded in the Town-Houſe of Brunſwick. And is a Proportion for 63 Gallons.

THe *Water* prepared, muſt be boyled to the Conſumption of a *Third Part* at leaſt, and Brewed according to *Art*, with ſeven Buſhels *Wheat-Malt*, one Buſhel *Oat-Malt*, one Buſhel *Ground Beans*. And when 'tis Turned, let not the Hogſhead be too much filled at firſt. When it begins to work, put into it,

- Inner Rind of Firr-Tree*, three pounds.
- Tops of Firr and Birch*, one pound.
- Carduus Benedictus*, three handfulls.
- Flowers Ros-Solis*, a handful.
- Burnet, Betony, Marioram, Avens, Penny-royal, Elder-Flowers, Wild-Thyme*, of each, a handful and a half.
- Seeds of Cardamom*, bruifed, three Ounces.
- Barberies* bruifed, one Ounce.

Put the *Seeds* into the Veſſel, when the *Liquor* hath wrought a while, with the *Herbs* alſo. And after they are added, let the *Liquor* work over.

over the Vessel as little as may be. Fill it up at last, and when 'tis stopped, put into the Hoghead ten new laid Eggs, not broken, nor so much as crack- ed. Stop it up close, and drink it at two years end.

Dr. Egidius Hoffeman, added *Water-cresses, Brook- Lime,* and *Wild-parshy,* with six Handfuls of *Horse- Radish* rasped to every Hoghead. And 'twas ob- served, the *Horse-Radish* made it drink more quick than the other, in which was none.

William Richardson, Mer- chant, transcribed this out of the Town-house of Brunswick.

Our *English Brewers* use not all these Materials. They use *Cardamums, Ginger,* and *Sassafras,* which serves instead of the Inner Rind of *Firre,* also *Wal- nut Rinds, Madaer, Red-Sanders,* and *Enula Campa- na.* And some make it only of *Strong beer,* and *Spruce beer.* The last of which, if any would give us the Receipt, it would be very acceptable.

S I R,

An Account of a great Improvement of *Mossie-Land* by Burning and Liming, &c.

S I R,

I Think it is not impertinent to your business, to tell you, that in my Opinion, a mighty Im- provement might be made of *Mossie Ground,* in Countries that abound with *Lime,* above what is ordinarily known. To confirm which, I shall re- late to you a story, which an honest Gentleman of *Staffordshire,* some years since told me; and it was thus, so far as my memory is to be relyed on.

He having accidentally set on fire about ten *Acres* of *Mossie-Ground* (which burned to the very *Sand*) in the *Common* belonging to *W.* Sent his *Teams* six or seven Miles off (to *Walsall*) for *Lime,* which he mixt with the *Ashes,* and sowed the Plot of *Ground* with *Rye,* much against the Opinion of his Husband- men, whose *Objections* and *Jeeres* he could not otherwise silence; but by a peremptory Command, to hold their peace, and observe his Order. And the issue was, that though he was constrained to make a costly *Fence* about it, that *Crop* of *Rye* cleared all the *Charges* of the *Fence, Lime, Seed,* and *Husbandry,* with advantage to his Purse; and be- sides, turned a barren piece of *Moss* into a good *Close* of *Land.* I suppose, that upon a moderate ac- count, the *Close* may well be worth, for *Pasture* alone (besides the benefit of plowing it sometimes) five pounds *per annum,* or very near, whereas I cannot think it was worth a tenth part of the *Money* before this accident fell out, of firing it; for there is enough in our *County* to be taken as cheap as that comes to;

to;

to; and I my self would be glad of that rate for Land which I judge much better, during my *Lease*, for which I hold it with other Ground that I have Improved: though I am apt to think, no County about us (if any in *England*) charges the *Farmers* more deeply with *Rent*, proportionably to the probable Profits to be made of the Land, than this of ours. I am sure, many of our *Farmers* do not only say so, but make it to appear, they speak as they think, by removing themselves with their Families and Stocks, into other Countries; of which, of late years, we have too plentiful Instances. What Advantages then might be made, of some great *Mosses* in *Lancashire*, and elsewhere, that lye near to *Coal*, and *Lime-stone*, and therefore might well be spared, without making *Fewel* dear, and improved at a very small Charge, and for the present, yield little or no profit, save some *Grigg*, or *Heath* for *Sheep*, and young Cattle to feed poorly upon; and this oft in peril of their Lives: particularly, what abundance of this sort of Ground lies within a few Miles of *Clitheron* (the great Staple for *Lime*) which is good for little, or nothing in its present Condition, but to make the Country thin of Inhabitants. Accept this at present from

S I R,
Your Servant,
Adam Martindale.

London, Printed by J. Gain, for the Author, John Houghton, and is to be Sold at his House against the *Ship-Tavern* in *St. Bartholomew-Lane*, behind the *Royal Exchange*: By John Lawrence, at the *Angel* in *Cornhill*: By Moses Pitt at the *Angel* in *St. Pauls Church-Yard*: By William Cadman, at the *Popes-head* in the *New-Exchange*: By Dorman Newman, at the *Kings Arms* in the *Poultry*. And several other Booksellers, 1683.

A
COLLECTION
OF
LETTERS
For the Improvement of
Husbandry & Trade.

LONDON, Printed, January 29th. 1683.

The Contents.

An Offer to make it appear, That it is the Interest of the Subjects of England, and much for the Improvement of Husbandry and Trade, plentifully to supply their King. In a Letter to Roger L' EStrange Esquire. Together with the Value of the ROMAN Sesterce, compared with our ENGLISH Coyn now in Use.

An Offer to make it appear, That it is the Interest of the Subjects of England, &c.

Honoured S I R,
I Have here expoled my self to the Censure of all my Countrey-men, and therefore shall want Protection, and confidently presume by my Observations of your indefatigable Industry, for the Peace
N and

and Prosperity of your King, & not only his obedient, but also well meaning deluded Subjects ; that you will readily Patronize any thing that shall tend to the same end ; which is the design of these Papers: If you shall think favourably of them? For your sake, I hope all will peruse them ; some out of good Will ; and others, that they may do as by your *OBSERVATORS*, pick Faults : and if by any of these Means, my *Arguments* therein shall be considered, I hope, they will procure Approbation. I thank God, 'Twas my good Fortune to be born under a *Monarchy* ; and may this (as long as *Sun* and *Moon* continue) flourish : and I believe, a very good way for its so doing, is, to have it supported plentifully ; but, by so easy Methods, as each Member shall contribute its Proportion, hardly to be felt, and thereby be much advantaged : and such ways, I strongly perswade my self, may be found out.

I think this very pertinent to be incerted as a *Letter for Improvement of Husbandry and Trade* ; because, 'twill be a great *Wheel* to set them both on going : and if in this, or any other of the Letters that I have, or shall publish, I shall advantage my Prince, I shall have one of my great *Aims*, and gain a *Point* I believe I was born for.

S I R, I shall not fill this Paper with applauding your Vertues, your *WORKS* will do that : but without long Preface, come to my Matter, and endeavour to prove what is abovementioned, *VIZ*, That 'tis the Interest, of the Subjects of England, and much for the Improvement of Husbandry and Trade, plentifully to supply their King.

In order to do this, I think it will be necessary to consider, what it is the King will do with, this plentiful *Supply* : and the Answer is obvious, that he will either *hoard* it up, or *spend* it.

If he *hoards* it up, I think 'tis one of the worst Uses it can be put to, unless spending it in that which is sinful ; (because 'tis the Blessing of God that maketh *Rich* ; and Sin is not the way to get God's Blessing) but yet, as bad as 'tis, when considered, 'tis likely it may not appear altogether so faulty, as at first it may be thought for.

For if we consider the King as the Head of this *Political Body*, and the Subjects the Members of the same, then it will appear, that the Whole is nothing lessened, by the Head's having just what the Members were wont to have : the Body is of the same weight still.

But though this cannot be denyed, yet I foresee, that it will be objected, *That this Body must needs have the Rachites, or Rickets, for the Head will be too big, and there will be a Diminution of the other Parts, through want of a Return to the Members of what was sent above.*

I must confess, that if all that goes to the *Head* were there to *stagnate*, and none should revert to the benefit of the *Members*, there might be hazard of some ill things attending ; but in this Case I think it cannot well be, for the Prince must spend some shows, or else he cannot be supplied with necessaries fit for the Maintenance of Himself and his *Domesticks* ; and if he doth but that, and keeps for them a good Correspondency with their Neighbours, and gives them leave to use their *Heads, Hands, and Feet, VIZ*, their *Understanding* and *Labour*, this

Head may grow very great, and the Members may increase proportionably, the Body keep in perfect Health, and all do well.

And thus we see it hath done in many Places; David left a mighty Treasure for the Service of the Temple, and yet you see, his Subjects were able to offer much too. And this you may well understand, when I shall shew you what it was that David left. I'll transcribe the words of Sir Walter Raleigh, in his second Book of the first Part of the History of the World, Chap. 17. §. 9. pag. 417. 'It is written

(saith he) in the 22d. of the first of Chronicles, vers. 14. That he left Solomon for the Building of the Temple, an hundred thousand Talents of Gold, and a thousand thousand Talents of Silver, and of Brass and Iron passing all weight; which is more than any King of the World posselt besides himself, and his Son, to whom he left it: for it amounteth to three thousand, three hundred, thirty, and three Cart-load, and a third of a Cart-load of Silver, allowing two thousand weight of Silver, or six thousand pound Sterling to every Cart-load, besides three-score and seventeen Millions of French Crowns, or, of our Money, twenty three Millions, and a thousand Pound. This last Summe, I suppose, is what is mentioned in the 29th. Chapter of the 1st. of Chronicles, vers. 3, 4. Then David saith, Moreover, because I have set my Affection to the House of my God, I have of mine own proper Goods, of Gold and Silver, which I have given to the House of my God, over and above all that I have prepared for the Holy House.

Even three thousand Talents of Gold, of the Gold of Ophir, and seven thousand Talents of Refined Silver,

to overlay the Walls of the Houses withal. Besides all this, I find in the former 22d. chap. of Chronicles, that David had also prepared Timber, Stone, and Workmen in abundance, Hewers, and Workers of Stone and Timber, and all manner of Cunning-men for every manner of Work. Vers. 14. 15.

Now, I say, notwithstanding that David had hoarded up all this Treasure, yet his People lived so happily and plentifully under him; That The chief of the Fathers, and Princes of the Tribes of Israel, and the Captains of Thousands, and of Hundreds, with the Rulers over the Kings Work, offered willingly.

And gave for the Service of the House of God, of Gold, five thousand Talents, and ten thousand Drams: and of Silver ten thousand Talents: and of Brass, eighteen thousand Talents, and one hundred thousand Talents of Iron.

And they with whom precious Stones were found; gave them to the Treasure of the House of the Lord.

Then the People rejoiced, for that they offered willingly. As you may see, 1 Chron. Chap. 29. Verse 6, 7, 8, 9.

Now, whether this People that offered willingly in the ninth verse, were the Commons that were inferior to the aforesaid Great Ones: or whether it relates to the aforesaid Great Ones, I wont determine, because I would strain nothing, but I think, from what is said, it plainly appears, that even under this Arbitrary and Despotical Government, the Subjects lived mighty Happy and Richly, notwithstanding the King's being excessively Rich, and a very great Hoarder.

Solomon

Solomon also Hoarded up great Riches; and although he spent much, yet he left a great deal behind him; witness the Wealth, that Shishak King of Egypt took away from King Rehoboam, for he, as you may see in 1 Kings c. 14. v. 26. Took away the Treasures of the House of the Lord, and the Treasures of the Kings House, he even took away all; and he took away the Shields of Gold, which Solomon had made.

Now what this Treasure was we may see in some measure in 2 Chron. c. 9. v. 15, 16, 17, and 20.

And King Solomon made two hundred Targets of Beaten Gold: six hundred Shekels of Beaten Gold went to one Target.

And three hundred Shields made he of beaten Gold: three hundred Shekels of Gold went to one Shield.

Moreover the King made a great Throne of Ivory, and overlaid it with pure Gold.

And all the drinking Vessels of King Solomon were of Gold, and all the Vessels of the house of the Forest of Lebanon were of pure Gold.

None were of Silver: it was not any thing accounted of in the days of Solomon.

In 1 Kings Ch. 10. Ver. 17. 'Tis said, Three pound of Gold went to one Shield, which I take to be the same as three hundred Shekels; and put it down, that it may be the better reckoned.

What the Treasure of the Lords House was, you may guess, by what David left for it, and by the description of the TEMPLE, particularly, remember the Utensils of Gold, and the Parts that were covered with pure Gold, and we have no account at all, that any of this were melted withal in Solomon's Time, but reason to believe the contrary; for sure, he

he would rather have parted with his Shields, than have defaced his TEMPLE.

The Complaints made to Rehoboam, seems rather to be the Effect of Inconsideration and Wantonness, than of any real Cause they had for it: for Solomon's Time was the top of Israel's Glory; Silver was like the Stones in the Street, for abundance; and they had no Wars in his Time, either to put them to Charge, or Danger, neither were the Yokes so heavy, as to be thought worth while to reckon what they were; but God, for Solomon's Sin, had divided his Kingdom, and suffered this idle Complaint to be the People's pretence for the Desertion of Rehoboam.

But if it shall be objected, That David's Wealth was not Taxes laid upon his own Subjects, but Spoils taken from his Enemies. Then I'll ask, Who provided first of all, to fight with this Enemy, it could not be done without Charge, if they paid no TAX, but like our Trained Bands, went all to War on their own Charge; that Charge, if it had been valued, would have amounted to a very great Sum; and that they did go at their own Charge; I have the Opinion of the aforesaid, Sir Walter Raleigh, a little after my former Quotation, viz. in pag. 427. in these words.

In those dayes and places there were no wintering Camps in use, but at convenient seasons of the year, Kings went forth to War, Dispatching all with Violence, rather then with Temporizing; as maintaining their Armies, partly upon the spoil of the Enemies Country, partly upon the private Provision, which, every Souldier made for himself. So many Thousand at such a time, and so many at such

such a time, could not be kept for nothing. In *Joab* in 2 Sam. c. 24. v. 9. *numbered Eight Hundred Thousand valiant Men in Israel that drew the Sword, and Five Hundred Thousand Men of Judah*; in all Thirteen Hundred Thousand men. But in 1 Chron. c. 20. v. 5, 6. *The number of Israel are reckoned, Eleven Hundred Thousand men that drew sword, and Four Hundred Threescore and ten thousand men of Judah that drew sword. In all, Fifteen Hundred and Seventy Thousand men, besides Levi and Benjamin, which were not Counted.*

These numbers I say, or what ever part were used of them, could not be kept for nothing, beside the loss of their times.

Also it is to be considered, that at this time, in the Reign of *David*, when they fought with little else beside *Swords* and *Spears*; their Army might as aforesaid be managed. But how they could have done without making a Publick *Purse*, if they had had an occasion for *great Ordinance, Powder, Shot*, and such like on Land; *Ships of War*, and all belonging thereto at Sea: for my part, mine Eyes are not sharp enough to find out; and what the real difference is, between this bearing their own Charge, or paying so much mony to *David* to bear it withall, I can as little see as the other, unless it would have enabled him with fewer men well managed, to have done greater things and have given liberty to the rest, to have added as much *Wealth* to their Country by *Trade*, as ever he brought in by *War*.

Of *Solomons Wealth* it cannot be said as of *Dauids*, for although a great deal was brought in as *Presents, Tribute* and *Merchandise*, yet, instead of going to War,

and bearing their own Charges, he *Taxt* them, and kept up an Army. For in *Sir Walter Raleighs* words. 'He kept in *Garifons* Fourteen Thousand Chariots, (Fourteen Hundred in the Text) and Twelve Thousand *Horsemen*; Four Thousand *Stalls* of *Horses* he had for his *Chariots*, and other uses; and for the Twelve Thousand *Horsemen* of his Guard: for the Ten Thousand *Stalls* (Forty Thousand in the Text) in the 1 *Kings* 4. are to be taken but for so many *Horses*, whence in 2 *Chron.* 9. it is written, but Four Thousand *Stalls* or *Teems*, and in every *Teem* Ten *Horses*, as *Junius* and the *Geneva* understand it.

And this I presume was a great reason of his *Taxations*, as well as his *Wives* and *Concubines*; and the Advantages of these *Taxations* were very great to that People: for all *Solomons* time, in spite of *Jereboam* and his other *Enemies*, he kept them in Peace; when as presently after his *Discease*, by means of *Complaints* of those *Taxes*, they fell into *Divisions*, and by almost continual *Wars*, for many ages, devourd one another; which *Wars*, must needs spend their *Wealth*, and hinder getting more: I think by considering what hath been said, it will, appear, that although *Solomon Taxt* them, and *Hoarded* up a great *Treasure*, yet, the People lived very happy all his days.

Beside this, the great *Mogull*, 'tis common with him to amass great Sums in *Tanks*: which I take, not to be only for delight of *Burying* it; I am loth to think they take the pains they do, for that silly pleasure; but without doubt, 'tis only *Treasure* laid up in a place, that is thought safe, against a time of need; and this I have reason to believe, because not long since,

O here

here was a great Rumour, that the *Mogul* had opened a *Tank* to pay his Souldiers.

I must confels, I have not much enquired after the Manner of the *Indian-Government*, but we may reasonably think, that where there is so great and rich a Prince, every little body wont be making *War* on him; and *Peace* is no small Happiness to Subjects: but we certainly know, that of late years his *Trade* hath much encreased; and the *Banians*, and several other of his Subjects, 'tis commonly said, enjoy to themselves a very great *Wealth*, and their Happiness is no way impaired, but rather improved.

If we come nigher home, we shall find that the present *French-King* hath, when time was, *Hoarded* up great Sums, and yet his *Subjects*, for ought I can learn, have lived and thrived as well as they were wont to do before; and if you will believe what is said of him as matter of Fact, *much better*: for in a Treatise touching the *French East Indian-Trade*, translated into *English* 1676 and sold by *Rob. Boulter*, at the *Turk-Head* in *Cornhill*, you will find the present *French-King* thus represented: 'That since the year 1658 he has struck off twenty millions a year in Taxes, and since that, brought down the Price of *Salt*: In the Scarcity of 1661 (which threatened *France* with an inevitable Famine) he did out of his proper *Coffers*, provide for the Importation of Prodigious Quantities of *Grain*, to relieve the Necessities of his People, and particularly of *Paris*, where the number made the Evil the more dangerous.

In pag. 30 'tis said, 'That he (meaning the *French-King*) has heretofore had great Wars; his Treasury drained, his *Finances* mis-menaged, but in the midst of his Pressing Necessity, can any say he fingered any
Pub-

'Publickmony, or to order the *Receivers* of *Consignations*, to empty his *Coffers* in the hands of his *Treasurers*. In pag. 31 'tis said. In his Menage of Affairs of State, his Majesty is *Affiduons*, and *Indefatigable*, as to the ordering of his *Finances*, he looks after it himself, and understands the whole Business of his *Revenue*, no man better.

In pag. 33 'tis said. 'I do not speak of his universal Vigilance over all his Dominions; but of the special care he takes for the Protecting of his People in a *Forreign Trade*. It costs the King at least, four Millions a year, to entertain a Liberty of Ordinary Commerce, both in the *East* and *Western Ocean*: upon this Account is his Charge of a *Navy-Royal*, to suppress the *Corsairs* of *Algiers*: & another *Squadron* to defend our *Merchants* from the *Pyrates* of *Galicia*, and all this for the Support of a very ordinary *Traffick*.

Beside what is said in this Book, 'tis famously known, that he hath cut a great *River* from *Sea* to *Sea*, he hath improved their *Arts* by Magnificent *Buildings* and *Devices*, he hath encouraged the making of *Point*, *Tapestry*, and other Manufactures, and not spared his own Treasure, for the making his Subjects the greatest *Tradesmen*: he hath so much increast his *Fleets*, that his *Merchants* are every were respected, and he his now one of the great *Marine Princes* of the World.

Now to come nigher home, I'll consider our own King *Henry* the 7th the only Prince of *England*, that ever gathered up great Treasure to *Hoard*; that I can learn off.

Of this great King I'll give you some notes, I have taken from his History, written by the Great Vertuoso, the Right Honorable *Francis* Lord *Verulam*, Viscount *St. Alban*. O 2 And

‘And first of all, our Historian allows this King to be prone to *Covetousness*, and in order to get *Wealth*, he did hard things to some particular men; especially, while *Empson* and *Dudley* were Commissioned by him: I say there were done such things in his *Reign*, that if such should be done now, it would be thought very strange, but if they be considered with what was done in *Richard* the Third’s time, and several *Reigns* before, we shall find them to be tolerable. but in pag. 35 of the Edition of 1676 I find his *Chancelour*, In a Speech to the Parliament, use these words.

‘Because it is the Kings Desire, that this Peace wherein he hopeth to Govern and Maintain you, do not bear only unto you leaves, for you to sit under the Shade of them in Safety; but also should bear you Fruit of *Riches*, *Wealth* and *Plenty*: Therefore his *Grace* prays you, to take into Consideration matter of *Trade*, as also the *Manufactures* of the Kindome, and to repress the *Bastard* and *Barren* Employment of *Moneys*, to *Usury* and *Unlawful Exchanges*, that they may be (as their natural use is) turn’d upon *Commerce*, and *Lawful* and *Royal Trading*. And likewise, that our People be set on work in *Arts* and *Handicrafts*; that the Realm may subsist more of it self; that Idleness be avoided, and the draining out of our Treasure for *Forreign Manufactures*, stopped.

And in pag. 38 ‘According to the Lord *Chancellours* Admonition, there were that Parliament divers Excellent *Laws* ordained, concerning the Points, which the King recommended.

In pag. 43 ‘tis said, ‘The King thought he had not remunerated his People sufficiently with *Laws*, which

‘which evermore was his retribution for *Treasure*, and four lines farther. ‘Certainly his times for good *Laws* did excell. So as he may justly be celebrated for the best *Law-giver* to this Nation, after King *Edward* the First. For his *Laws* (whose marks them well) are deep, and not vulgar: not made upon the Spur of a Particular Occasion for the present, but out of Providence of the future, to make the Estate of his People more and more happy: after the manner of the *Legislators* in Ancient and Heroical times — — ‘He made a Law for Peace and Quiet in the private Possessions of the Subjects — — Another for Population — — Improvement of Land. Pag, 45 That *Wines* and *Woods* from the parts of *Gascoign* and *Languedock*, should not be brought but in *English Bottoms*; Bowing the Ancient Policy of this Estate, from Consideration of Plenty to Consideration of Power.

Another *Monitory* and *Minatory*, towards *Justices* of the *Peace*, That they should duly execute their Office, — — and that a Proclamation, which he had published of that *Tenor*, should be read in open Sessions, four times a year, to keep them awake — also Lawes for the Correction of the *Mint*, and counterfeiting of *Forreign Coyn* current. He made also Statutes for the Maintainance of *Drapery*, and the Keeping of *Woolls* within the Realm.

In pag. 90 Speaking of an Accommodation, between the *English* and *Flemish*, about *Trade* that had been Interrupted, ‘tis said. ‘But that, that moved him most, was, that being a King that loved *Wealth* and *Treasure*, he could not endure to have *Trade* sick, nor any Obstruction to continue in the *Gate-Vein*, which disperseth that Blood — — At that time

'time the *Merchant Adventurers* (being a strong
'Company and underfet with rich men and good
'Order) took off the *Commodities* of the Kingdom
'though they lay dead on their hands for want of
'Vent. A sign the *Merchant Adventurers* (which I
take to be the same as the *Hambrough-Company*.) had
a *Trade* with the *Flemings* at that time.

In pag. 106 He gives you an Account of 'one Se-
'bastian Gabato, a *Venetian*, dwelling at *Bristol*, that
'was earnest for the Discovery of the *West-Indies*, as
'you may see there more largely: And had not *Bar-*
'*tholomæus Columbus*, Brother to *Christopherus Co-*
'*lumbus* been taken by *Pirates*, in all likelihood, *En-*
'*gland* had had the Glory and Profit of that Discove-
'ry. Notwithstanding this sharpened the King so,
'that beside a Ship sent by *Gabato*; In the sixteenth
'and eighteenth years of his Reign, he granted forth
'new Commissions, for the Discovery and Investing of
'unknown Lands.

In pag. 119 After the marriage of his Eldest Daugh-
ter to the King of *Scotland*, 'tis said. 'At this time
'the King's Estate was very prosperous, secured by
'the Amity of *Scotland*, strengthened by that of
'*Spain*, cherished by that of *Burgundy*, all Domestick
'Troubles quenched, and all Noise of War (like a
'Thunder afar off) going upon *Italy*.

In pag. 132 'Tis said, 'that by Tradition it is repor-
'ted that the Treasure this Rich King left behind him,
'amounted to the Sum of near eighteen hundred
'thousand Pounds Sterling.

'He did also declare in his will, that his mind
'was, that Restitution should be made of those Sums,
'which had been unjustly taken by his Officers.

Beside these notes from the aforesaid great Lord, I
can-

cannot but take notice what is said of this King by
Sir *Winston Churchill* Kt. in pag. 286 of his *Divi*
Britannici, printed at *London* 1666 thus.

'We find he was sometimes content to part with
'his own Way and Will (which perhaps on good
'reason he loved well) for the more orderly Admi-
'nistration of *Justice*, leaving the disposition of his
'*Mint*, *Wars*, and *Martial Justice* (things of Abso-
'lute Power) not to say the Concerns of his unsettled
'Title, which was yet of a Higher and Tenderer
'Consideration, to the wisdom of his *Parliaments*.
'And lest the thing called *Propriety* should be
'thought to suffer in the least, he gave himself the
'Trouble of hearing many Causes at his *Counsel-*
'*Board*. 'Tis possible, he did this with Respect to
'the Splendour of his Court, and the Profit of the
'City: to which as he was always a *Friend*, so by
'this dispatch of *Justice*, while there was no other
'Court sitting, he drew such a Concourse of *Clients*
'to *Town*, as kept up a kind of *Term* all the year round,
'and so quickened *Trade*, that by adding to theirs, it
'increast his own Wealth.

In answer to what he saies of *Columbus*, I'll refer
you to what I have said above from the great Lord
Bacon.

And Dr. *Heylin* in pag. 1012 of his *Cosmography*
printed at *London* 1665 saith of *Christopher Columbus*
thus.

'On this Repulse (*viz.* from the State of *Genoa* in
'*anno* 1486) he sent his Brother *Bartholomew* to King
'*Henry* the 7th. of *England*, who in his way happen-
'ed unfortunately into the Hands of *Pirates*, by whom
'detained a long while; but at last enlarged. As soon
'as he was set at Liberty, he repaired to the Court of
Eng-

England; where his Proposition found such chearful Entertainment at the hands of the King, that *Christopher Columbus* was sent for to come thither also. But God had otherways disposed of his rich Purchase: for *Christopher* not knowing his Brothers Imprisonment, nor hearing any Tydings from him, conceived the offer of his Service to have been neglected; and thereupon made his desires known at the Court of *Castile*: where after many delays, and six years Attendance on the business, he was at last furnished with three *Ships* only, and those not for Conquest but Discovery.

And of *Cabot* in pag. 1014 the same Author saith thus: 'To him (*viz. Vesputius Americus*) succeeded *John Cabot*, a *Venetian*, the Father of *Sebastian Cabot* in behalf of *Henry the 7th.* of *England*; who discovered all the *North-East-Coasts* hereof, from the *Cape of Florida* in the *South*, to *Newfound-Land*, and *Terra di Laborador* in the *North*, causing the *American Royetelets* to turn *Homagers* to that King and the *Crown of England*.

I think from these Examples it may be concluded, that when Princes grow Rich, their Subjects ordinarily thrive with them: & that although a *Prince* should Hoard up a great deal of *Money*, yet it doth not follow that he, as the *Head*, must be too big, or the *Subjects* as the *Members*, must languish, even so, as to make the body Politick Labour with the *Rickets*.

But I pray, let's consider the Consequences of a *Prince* his Hoarding up mony; and first in Relation to himself, *Secondly*, to his Subjects.

And *First*, in Relation to himself, supposing him of equal Prudence to his Neighbours.

This

This Money will enable him to secure his People, from all *Affronts* can be put upon them, (by those with whom they Correspond) or at least, *Revenge* them. It will, in likelyhood, make all his Neighbour Princes court his Friendship, and think it their Interest, if they quarrel, to chuse him *Umpire*. And these are such *Advantages*, that 'tis hardly to be supposed, that ever the People of *England* can offer their *Sovereign*, so great *Sums*, that these will not repay.

But here's not all, if he loves Money, that his Subjects may add to his Heap, he'll be pushing on for new *Trades* and new *Discoveries*; as I have shewn in the History of *Henry the 7th.* and shall, in one of *Solomon*; that thereby he may enable his Subjects to get more for him.

I must confess, there is one thing that a great Treasure may tempt a Prince unto, that is, *Ambitious Wars*: But this wee have no great Reason to fear, because wee have not many Examples, our *Plantations* and *Trade* will imploy our People, if they be too numerous, and 'tis the *English Maxim*, that if they can keep the *Sovereignty* of the *Sea*, and be *Umpire* to their Neighbours, 'tis enough for them.

Beside, will a Prince that loves Money, quarrel without Reason, with a *Forreign Inland-Prince*? If he should, and Conquer, yet his *heaps* will soon be spent, and he will get but little; yet his Subjects having *Peace* at *Sea*, may *Trade* as much as ever, and there is no great Damage to them, but if with a *Mari time Prince* he should *War*, his Supplies will be stopt by the Stop of *Trade*, and his Gains will amount but to very little; 'tis hardly to be supposed, that any King of *England* should ever do thus. *Henry the 7th.* who, perhaps had the greatest Hoard that ever King of *England*

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had

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 had, yet, when he was tempted (as I have heard) to prosecute his Title to *France*, made Answer, that it was a very fine Country; but he thought *England* as fine a Seat for a Private Gentleman, as any was in *Europe*.

As to the fear of *Arbitrary Power*, If it be meant by it, that the *Prince* shall throw off all his *Laws*, and make the *Present* word from his mouth his *Law*: do as *David* did to the *Amalekite*, say, *Fall upon him and slay him*: I think, none but a *Mad Man* will ever fear it; for will ever *Prince* run the hazard of displeasing, not only the *VVorst*, but *Best* of his People, to gain that which he can much easier procure, by a way that shall stop the mouths of *Bad*, and exceedingly please all the *Good Men* in his Kingdom. I beleive it cannot be shewn, that ever *Prince* with the greatest force he could raise, could ever quiet a *Fermenting People*, so well and soon, as our present King hath done; only by a *Declaration*, that he would Rule according to *Law*.

This alone will be an Example for future Ages, and I hope an *Expedient* without any *War*, for ever to keep us *Quiet*.

As to the fear, that if the King wants no Money, wee shall have no *Parliaments*; I think it Causeless too; for I pray, why should a King who wants no Money (and knows for that reason he can Rule his *Parliament*) not oblige his People in those things that will do him no prejudice.

'Tis true, wee have not had many Examples of this kind, to try how it would be: I think of none, but *Henry the 7th.* and in his time it was, that *England* began to flourish, especially in *Sea Affairs*, for then as I have said above, was *Cabots* and other *Voyages*.

One

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One thing more I have to say, that is, if the King should *Hoard* up much Money, it would for the present make it *dearer*, that *Deareness* would make it be brought in more *plentifully*, and that would make it more plentiful then 'twas before: Thus wee see daily, that by Reason of the great *Exportation* of Mony by the *East-India* and *Turky* Companies, we swarm with Money more than ever; although it is a kind of *Hoarding* till the time of *Return*, as likewise is all our *Plate*: And 'tis certain, the more Mony we export, the more *Plate* wee use: The more *Silver* and *Gold* comes in: as will be testified, not only by our *Companies*, but also by most of our *Bankers* and *Merchants*, that are any way concerned in the Affair; and of the truth of this, I would not question easily to make Proof, and so may any body else, that will take but a little Paines.

From what hath been said, I think it will appear, that although *Hoarding* of Mony is ordinarily one of the worst Uses a Prince can put his mony to; yet, if he will take none but fairly by the *Law*, and what his Subjects shall willingly present unto him, his *Hoarding* of that up will never hurt them, especially, in a Country where the *Laws* are so mild, as to let them know what they must pay their *King*, and what they may call their *own*, and gives them leave to use what honest *Industry* or *Contrivance* they will to get more.

But by reason that we have but one single Example of any of our Kings, that have made a great *Hoard*, and no *Ill* came by it, we have very little reason to think we shall be prejudiced thereby now; wherefore I'll leave this part of my Observations, and go to the second propos'd, *Viz. What will be the Consequence,*

P 2

if the Prince should have a great deal of Money given him, and he again should Spend it?

It must necessarily follow, that if the Money be spent; it must be in Things *necessary* for the Welfare of the Kingdom, or in Things *superfluous*.

If in Things *necessary*; I am sure, there is no good Subject but will be of my Mind, and no ill one but will, I think, appear so, from the Teeth outward; but what the *necessary* Things are, a great many honest men, as well as others differ in, some through *Ignorance*, some through want of *Consideration*, and some through *Mis-information*. I make bold to mention some things, that I think very necessary for the Welfare of the Kingdom.

In the first Place, although I would wish to have the *Train'd Bands* of the Kingdom, to be the chief *Militia*, yet, I would not wish the King (through want of a little Army maintained by, and paid from himself) to be in the Power of any *Faction*, or sudden *Tumult*, I would not, for want of such, that we should run the Hazard of such an *Insurrection* as *Massanelo's*; neither would I desire (especially in a discontented Time) to see such another *Procession*, as was not long since, on Queen *Elizabeth's* Birth-day, when they burnt the *Pope* in *Effigie*; and the King to have no body about him, but such as we commonly call his *Beef-Eaters*. No, no, had it been so, for ought I know, we had not now had a King to give Money to, but more likely such, as would have taken it from us, in Spight of our Teeth; then the *Longest Sword*, not the *Safety* of the *People*, would have been the *Great Law*: for my part, I am much of *Machiavel's* mind, that, that Prince that holds the *Sword of Justice* in his hand, and expects some Fear, shall seldom or ne-

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ver want *Love* from his Subjects; but on the other side, that Prince that through want of Power, shall think to make his Subjects fear him, by means of loving and kind *Actions* and *Expressions*, shall fail of his Expectations.

But for all this, whether the *Guards* be enough, or want *Augmentation*, I wont determine, but leave it to *wiser Heads*; yet, this I am sure on, that if some of the *Foot-Souldiers* were made *Troopers*, it would be better for *Husbandry* and *Trade*; because a greater Sum of Money would be *hurried* about, we should have a greater *Breed* and *Market* of good *Horses*, and a greater Consumption of *Hay*, and *Provender*; and if *London*, and the *Country* about it, for 20 *Miles*, shall be against this, I wont say, they understand not their own *Interest*, but they must give me leave to think.

The second thing I think necessary is, a good *Fleet* of *Men of War*, and of these in the time of greatest *Peace*, I would wish a considerable Number to be always *Abroad* or *Cruising*: I would be sorry the *Algerines*, or any other should say, "They are unprovided, let's fall upon them: I believe the Charge of such a *Fleet* to prevent a *War*, will be far better *Husbandry* then to fall actually into a *War* and Conquer, 'tis a *Maxim* in *Physick*-

Principiis obsta, sero medicina paratur,

Cum mala per longas convaluere moras.

Which I'll thus English,

All Wars prevent, early your Ships go Rig,

Least by Delay, your Foe should grow too big.

Examples of this there are Abundance, but King *Edgar* is famous, for I find in *Hakluyt's* Voyages printed at *London*, 1598. pag. 7. in one place, 'That he year-

ly

ly set out 4800 Ships, *Viz.* 1200 to each of the four Seas. This he cites from *Flores Historiarum*; and a little below he saith thus, 'This peaceable King *Edgar* (as by antient Records may appear) his *Summer Progresses*, and *Tearly Chief Pastimes* were, His sailing round about this whole Isle of *Albion*, guarded with his grand *Navy* of 4000 Ships. And for this he quotes *Ranulphus Cestrensis*. A great many things are there said highly to his Commendation. He was call'd *Edgar the Peaceable*. I suppose, because none dare quarrel with him, by reason of his prudent Care and Government.

Mr. *Selden*, in his *Mare Clausum*, Englished by *Marchamont Nedham*, and Printed at *London*, 1652, in the 2d. Book, pag. 274, brings King *Edgar* in a Charter or Deed, by which he settled *Revenues* on the *Cathedral Church* of *Worcester*, Anno 964, saying these words: 'By the abundant Goodness of Almighty God, who is the King of Kings, I *Edgar*, King of *England*, and of all the Kings of the *Islands*, and of the *Ocean* lying round about *Britain*, and of all the Nations that are included within the Circuit thereof, Supreme Lord and Governour, do render Thanks to the same Almighty God, my King, who hath enlarged my *Empire* thus, and exalted it above the Royal Estate of my *Progenitors*; who, although they arrived to the Monarchy of all *England*, ever since the time of *Athelstane* (who was the first that by Force of Arms, subdued the *English*, and all the Nations that Inhabit *Britain*) yet none of them ever attempted to promote their *Empire* beyond the Bounds thereof. But the Divine Goodness hath favoured me so far, as beside the *English Empire*, to

inable me to subdue all the Kingdoms of the *Islands* in the *Ocean*, with their most stout and mighty Kings, even as far as *Norway*, and the greatest part of *Irland*, together with their most famous City of *Dublin*. All which (by God's Grace and Assistance) I have subdued, and made their Necks to stoop under the Yoke of my Command.

Dr. *Dec*, in the time of famous Queen *Elizabeth*, wrote a Book in *Folio* to this purpose: and *Henry Stubb*, in his further Justification of the present War against the United *Netherlands*, printed at *London*, 1673, between page 79 and 86, shews you a great deal of good Matter to this Purpose.

And in the aforesaid History of *Henry VII.* page 28. 'tis said of him, 'A *Fame of War*, he liked well, but not an *Atchievement*: for the one, he thought, would make him *Richer*, and the other *Poorer*.

The third thing I suppose necessary, is, to live in Honour and Reputation at home: and this he may in a great measure do, by keeping the *Reins* of Government indifferent straight, by having such *Guards* on foot, and *Fleets* abroad, as is before mentioned: but I am sure his necessitous over good *Husbandry*, is no way to increase it. The King is the *Father* of his Country; but for his Children to come to his House, and find no Bread; and as our *English Proverb* is, *To be more likely to break their Necks than their Fast*; is none of the ways to aggrandize his Honour; it doth nothing correspond with the *Antient* Glory of the *English*; which was, that none should go from them, but should have Cause to praise their *Hospitality*: but I will not altogether condemn this Change; because perhaps, it may be thought good *Policy*, rather to let every one shift for himself, than to depend on

on others: but the Court hath not now such good Opportunities to oblige the Country, nor the Country so many good ways to understand the good Designs of the Court. Neither is the Kings not paying his Servants, the way to increase his Honour; for although some Wise Men will be sensible of their Benefactor and Benefits, although their Cause be very remote, yet the major part of People judge of things only just as they appear before them, and they from whom do come their Money, shall be greatest in their Esteem.

As for his Exchequer and other great Debts, I will not determine, whether 'tis best they should all be paid, or no: but I very well know, that if his Majesty were able constantly to pay the Interest thereof without delay, 'twould be a very great Comfort to a great many of his Loyal Subjects, and perhaps satisfy them as well as Payment; although I think, were I concern'd in that Affair, I should earnestly endeavour to have such Members of Parliament chosen, as would eagerly busy themselves to have that great Debt Discharged.

A fourth Thing I take to be necessary, is his having a great Esteem in Forreign Courts; and although his Power of doing Benefits or Diskindnesses, is the main Matter considered in such Cases, yet the Splendour of his Ambassadors is no small means to gain him a Reputation; for 'tis outward shew, that ordinarily gains the Populace, and encourages them more readily to respect and Trade with his Subjects.

All the Money that is spent toward the Attainment of three of these necessary Things, and a good part of the fourth, (Viz. Embassyes) reverts, and is spent among the King's Subjects: and I hope, if it be

spent for such good Uses, and they have it again, they'll nere think much of it; and I strongly persuade my self, that those who seriously enquire into the Vastness of such Expences, will hardly think their Burdens grievous.

I shall in the next place, consider the Court as spending Money *superfluously*, i. e. spending more than needs must, in Building, or Adorning Houses, Fine Cloaths, Race-Horses, Gardens, Pensions, and such like; and I say, the more Money we give for these Uses, the better it will be for us. In order to prove which, I pray consider the Consequences.

His Majesty at a great Charge hath lately repaired and beautified Windsor Castle, which of necessity must have employed a great many men, which must have been idle, or have taken away the Work of some other, had not this been; for although I can easily see how, (beside these Workmen that were immediately concern'd) many others were employ'd, to supply them with Necessaries; yet I can in no wise see, that by reason of this, other Works were lessened. If so? Then it must follow, that this is the Cause of Employment for more People. If this be granted, and urged, *We are ne're the Richer, because 'tis only among our selves, and that adds nothing to the Nation.* Yet it cannot be denied, but that what Strangers spend extraordinarily (which is a great deal) upon viewing this, will be a Gain; and that by the same Rule, if it be no Gain, it can be no Loss. Wherefore, if we can have such Fine Houses without damage, would all the old Ones were soon pull'd down, but although this working within our selves, will be no Gain directly, yet collaterally,

it will be very considerable; and to illustrate this, perhaps hardly a better way, than to represent to you some of the *Actions* of the wise King *Solomon*.

This wise Prince, when he came to his *Throne*, God was pleased to offer him what he would ask; and he asked *Wisdom*: which pleased the *Almighty* so well, that 'twas granted, with an *Affirmation*, that none before was; and a *Promise*, that none after should be so *Wise*: and as a farther Reward of this his Request, was promised *Wealth* and *Honour* upon the same Terms, as in *2 Chron. 1.* But in *1 King. 3. 13.* 'tis said, *So that there shall not be (or, hath not been, as in the Margent) any among the Kings like unto thee, all thy Days.* The Story at large may be seen in the aforesaid *Chapters.*

My Business will be to enquire, by what means it was, that God gave *Solomon* his great *Wealth*; and I believe I shall find it to be by no *Miracle*, or *War*, but by a prudent *Management* of *Husbandry* and *Trade*: for although God had promised to *Abraham* and his *Seed* the Land they afterwards enjoyed, yet they had but little of it for many *Ages* after his *Death*. When they came from *Egypt* and the *Wilderness*, 'tis true, they received *Lands*, *Cities*, and *Towns*: but after what Manner they enjoyed them, may be seen in the Book of *Judges*: for after *Joshua's* *Death*, the *Hand of the Lord* was against them for *Evil* where-ever they went, *Judg. 2. 15.* And they were then, and were to be plagued with the Nations *Joshua* left among them; as in the same *Chapter*. For Instance, in the third *Chapter*, They Served *Cushan Rishathaim, King of Mesopotamia* eight years, and were delivered by *Othniel*. By whom they had Rest

Rest forty years. Afterwards they served *Eglon*, the *King of Moab*, eighteen years; and were delivered by *Ehud* a *Benjamite*; and had then Rest four-score years. And *Shamgar* also delivered *Israel*.

In the fourth *Chapter*, they were sold to *Jabin*, *King of Canaan*, and he mightily oppressed them twenty years; and they were delivered by *Deborah* and *Barak*; and the Land had Rest forty years: as in the next *Chapter*.

In the sixth *Chapter*, they were delivered to *Midian* for seven years, who Oppressed them very sore: at this time they were fain to make *Dens* in the *Mountains*, and *Caves*, and *Strong-holds*. These *Midianites* were so *Bitter*, that (when the *Israelites* had sown their *Corn*) they, with the *Amalekites*, and *Children of the East*, came and Encamped against them, and destroyed the *Increase of the Earth*, even to *Gaza*, and left no *Sustenance* for *Israel*, neither *Sheep*, nor *Ox*, nor *Ass*. And *Israel* was greatly *Impoverished*, till they cryed unto the *Lord*, who delivered them by *Gideon*: as may be seen in the 7th. *Chapter*.

In the 9th. *Chapter* you have an Account of *Abimelech's* *Conspiracy* and *Murders*, and a *Civil-War* that ensued upon it.

In the 10th. *Chapter* you have an Account of *Tola*, of the *Tribe of Issachar*, and *Jair*, a *Giliadite*, who Judged *Israel* Successively forty five years (I think, in *Peace*) but after this, for their *Ill Doings*, they were sold into the Hands of the *Philistines* and *Children of Ammon*; and part of the *Israelites* were Oppressed eighteen years, and the rest sore *Distressed*.

In the 11th. *Chapter*, they were delivered by *Jephthah*; in whose time also many *Ephramites* were destroyed: as in the 12 *Chapter*: and *Jephthah*, *Ibzan*;

Ibzan of Bethlehem, Elon, a Zebulonite, and Abdon a Pirathonite, Judged Israel in Peace (for what appears to the contrary) one and thirty years.

In the 13th. Chapter, the Israelites were delivered into the Hands of the Philistines forty year; and were helped by Sampson; who Judged Israel twenty years; as in Chapter 16.

In the 17th. Chapter, there was no King in Israel, and every one did what was good in his own eyes. And in the 20th. Chapter, the Israelites by a Civil-War, lost forty thousand; and Benjamin was almost quite Extirpated. In the Time of these Judges there was also a Famine: as appears in the first Verse of the Book of Ruth.

In the Times of Ely the Priest, Things were bad enough, his Sons were very Ill, the Ark was taken; the Israelites overcome by the Philistines; and Old Ely brake his Neck.

In the Time of Samuel, the Philistines were worsted, and a King was desired, and God appointed to them Saul, and declared him to them; (not by Election, but Lot) as in 1 Sam. Chap. 10. Vers. 21.

All Saul's Time was a Time of Trouble; one while so low, there were but two Swords in his Kingdom, and he had War against Moab, Ammon, Edom, Zobab, the Amalekites; and against the Philistines was a sore War all his Days; as in the 14th. Chapter.

At last, Saul fighting against the Philistines, lost his Army and his Sons, and he and his Armour-bearer kill'd themselves.

From this short Historical Account it will appear, that to the Death of Saul, this People of the Jews, in relation to Wealth, were very inconsiderable indeed, they were arrived to that, which they might think

think would be a Settled way of Government; and I believe, some Arts began to take place, beside what were for Necessity; the Men had not only Arms, but the Women appeared Glorious: witness David's Advice to them in 2 Sam. Chap. 1. Verse 24. Ye Daughters of Israel, weep over Saul, who cloathed you in Scarlet, with other Delights; who put on Ornaments of Gold upon your Apparel.

I must confess, David brought in a great deal of Wealth, as I have shewn before, having continual Victories over his Enemies. But they that will consider the probable Gains by War, and that which comes by a peaceful Trade, will hardly think they deserve a Comparison: we have a little Instance in the Case of Jamaica: and in likelihood David got no small part of his Wealth by Husbandry: for Sir Walter Raleigh in the aforesaid Chapter, about David's Wealth, saith, 'Much Land doubtles he gain'd by Conquest, from the Canaanites and Philistines, beside those fruitful Valleys near Jordan, in Trachonitis and Basan, and the best of Syria, and other Countries bordering the Israelites. These Demains belike he kept in his own Hands, and with his infinite number of Captives, which he took in his Wars, which were not able to redeem themselves, Husbanded those Grounds for his greatest Advantage. For it is written, 1 Chron. 17. That Jehonathan was over his Treasures in the Field, in the Villages, in the Cities, in the Towns: That Ezri was over the Labourers that Till'd his Ground: Simeon over the Vineyards: and Sabdi over the Store of the Wine: Baal-Hanan over the Olive-Trees: and Joash over the State of the Oyl: also that he had Hershonen, that had Charge over his Cattle, both in the High-Lands

Lands and in the *Plains*; over his *Sheep, Camels* and *Asses*. And this Custom was common among *Kings, Pharaoh, Uzziah*, and others there mentioned. Now concerning *David*, it is not unlikely, but that those *Captives* which were not employed in *Husbandry*, were many of them used by him in all sorts of gainful *Professions*; as the *Antient Romans* in like manner used their *Slaves*.

He also speaks of a *Poll* of fourteen pence a *Head*, of every man, *Rich, or Poor*: which, if so, was a great *Tax*: but since in *Holy Writ*, there is only mention of *Joab's* numbring the *People*, but of no *Money*, I'll refer you to his *Arguments*; I am willing to be as short as reasonably I can: but I must take notice, that he thinks a great part of *David's Wealth*, that he left, to be the *Wealth* of the *Sanctuary*, which had been collecting since they came from *Egypt*, and in all their *Disasters* had never been medled with.

By these ways, 'tis true, did *David* leave a mighty *Treasure*, but the *Main* of it was not left to *Solomon*, for 'twas wholly *Dedicated* to the *Service* of the *Temple*; although 'twas very good *Seed-Corn* for *Solomon* to draw a plentiful *Harvest* from; the *Employment* it gave his *Subjects*, was very considerable.

And now seeing *Solomon* had this *Seed* of a *Wealthy-Harvest*, he had *God's Promise*, That he should be *Rich, and have a super-abundant Wisdom*. Let us consider how he acquired his own great *Riches*.

As I have noted before, I find no *Miracle*; 'twas only his *prudent Management*. It is likely, that

although *David* might (as the great *Knight* saith above) imploy some of his *Captives* in *Trade*, as well as the rest in *Husbandry*, yet it doth not appear, that the *Israelites* were much imployed in *Manufacture* or *Marchandize*, neither is it likely they were, from what is said before: *Solomon* must be, I wont say, the *Beginner*, because of the *Tabernacle*, but the great *Pusher on*, the *Restorer*, or, almost the *Beginner*, or some other word, what you please, near it: and some of the *Manners* he did it, I find to be thus,

When *Solomon* came to his *Throne*, by *1 Kings, Chap. 3.* it looks, as if he quickly made *Affinity* with *Pharaoh King of Egypt*, and took his *Daughter* to *Wife*: and 'tis like he did so, because (as the said *Sir Walter* observes) some of the *Workmen* that *Solomon* imployed in building his *Temple*, were the *Vassals* of *Hiram*, and of *Vaphres, King of Egypt*, whose *Daughter* he makes *Solomon's Wife* to be; and *Solomon* began his *Temple* in his fourth *Year*; *1 Kings, Chapter 6. Verse 37.* Without doubt, this great *Queen*, at *Marriage*, and afterward, had great *Pomp* and *Attendance*, which necessitated a great *Trade*.

This great *King*, at *Gibeon*, Offered to the *Lord* a thousand *Burnt-Offerings*; as in *1 Kings, Chap. 3. Vers. 4.* and in *Vers. 15.* besides *Burnt-Offerings*, he Offered *Peace-Offerings*, and made a *Feast* to all his *Servants*.

In the fourth *Chapter* there is an *Account* of his great *Princes*, and twelve *Officers* to take *Care* of *Victuals*, for the *King* and his *Household*; and his *dayly Provision* was, *thirty Measures of Fine Flower,*
and

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and threescore Measures of Meal, ten Fat Oxen, and
twenty Oxen out of the Pastures, and a hundred
Sheep, besides Harts, Roe-Bucks, Fallow-Deer, and
Fatted Fowl.

He had forty thousand Stalls of Horses for his Cha-
riots, and twelve thousand Horsemen, with Barley and
Straw, for the Horses and Dromedaries. I refer you
to an Account of this, before.

An other great means of his Wealth, was, his
Learning and Philosophy; without doubt, he was a
great Vertuoso. He spake three thousand Proverbs,
and his Songs were a thousand and five; he spake
of Trees, from the Cedar to the Hysop, of Beasts, Fowl,
Creeping Things, and Fishes.

How should Solomon come to know the Nature of
these Things? Surely, it was not by Instinct, for no
such Thing appears; neither can I believe he copy-
ed others Writings, or took Things upon Trust, that
would have been below the Honour of so great a
Prince, that was so greatly fam'd for his Wisdom.
If none of these; then surely his Philosophy was Ex-
perimental: there is Proof enough of it in Ecclesiastes.
But I do not believe, that he went himself a Sampling
for the Plants and Animals, but rather, that he had
Dilicate Gardens for his Plants, Parks, Ponds, and
Repositories for the other Matters; and if he had not
Telescopes and Microscopes, Chambers for Anatomy, and
Laboratories for the Analizing of Simple Bodies, surely
his Natural History was but very Lame, and our pre-
sent Learning doth much exceed it; but be it as
'twas, what Solomon did, must needs employ a great
many People, and it got him a great Renown, for
in the last Verse of this Chapter 'tis said, There came

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of all People, to hear the Wisdom of Solomon, from
all Kings of the Earth, which had heard of his Wis-
dom.

An other Means of Solomon's Wealth, was his Mag-
nificent Buildings: these were so great, that in pro-
bability they found Employment (directly, or con-
sequentially) for most of his Idle People: For, for his
Temple, he employed upwards of one hundred eighty
three thousand People, one hundred and fifty three
thousand of these were Strangers, but he paid them,
and fed them with the Product of his own Land,
and made it equivalent, or more beneficial to him,
than if all that he had wanted had grown in his own
Territories: For Solomon gave Hiram yearly twenty
thousand Measures of Wheat, and twenty Measures of
pure Oyl, 1 King. 5. 11. But in 2 Chron. 2. 10. 'Tis
said, he would give him of Beaten Wheat, and of Bar-
ley, of each, twenty thousand Measures; and of Wine and
Oyl, of each, twenty thousand Baths. What these
Measures were, it is not material to enquire: with-
our doubt, 'twas enough to feed the Workmen; and
'tis probable, to pay for Materials also: and this must
needs employ a Multitude for its Production and
Carriage; and another Multitude to supply the Sup-
pliers; and so to the end of the Chapter. We
may something guess at this, by the bussle that was
made in our own Countrey, in time of War, only
to supply a Fleet for a few Months, with thirty or
forty thousand Men; and at a time when our Trade
hath been interrupted, and a great many diverted
from their ordinary Employments; but here was no
Divertisement from other Employments, only from
making of Swords and Spears; and that Trade, for
some Years had been useless too.

Well, what was the necessary Consequence of this great *Baffle and Building*? Why, of necessity it made a great City, and that of necessity must cause a great many new *Wants & Superabundancies*; & these must certainly increase *Artists*, and all these for a supply of *Provision*, must without doubt, imploy proportionably, more People than are imployed to supply the *Citizens of London*: for *We* have a great deal brought by *Water*, a *Carriage* that imloys but few; but their *Conveniencies* were not many such, they were forc't to have it by *Land-Carriage*.

This *Temple* was not like our *Fleet*, a *Work* of a *Summer*, two or three, but 'twas seven year and upwards a *Building*, as in *1 King. 6. v. ult.* Beside the *Building* of this great *Edifice*, it was fill'd with abundance of *Rich Utensils*; and when all was finished, *Solomon* Dedicated his *Temple*, and Offered no less than two and twenty thousand *Oxen*, and a hundred and twenty thousand *Sheep*, all, we must suppose of the *Best*, the *Worst* were not fit for *Offerings*; at 10 l. an *Ox*, and 40 s. a *Sheep*, 'twould amount to four hundred and sixty thousand, pound *Sterling*, beside *Drink*, and other *Necessaries* to such a *Feast*; and when the *Priests* were settled in their *Courses*, the *Ordinary* and *Extraordinary Offerings* were exceeding great. By reason of these, they could not choose but always have great *Stocks of Cattle*. Good God! What a *Trade* to this happy People did these Things of necessity afford! And what would they have had, if the *Forreign Trade* which *We*, or the *Dutch* have, had been joyned to this, or rather might not we joyn his *Magnificence* to our *Trade*, I see no *Impossibility* of the *Matter*; nay, a great
Pro.

Probability, if we would our selves, is plainly delineated in my *Imagination*; and I am no *Lover* of mad *Roamings*, but of *Truth* and *Sobriety*.

Truly, I am almost a weary to recount the great *Actions* of this *Prince*; but I can't forbear but to Hint what *Sir Walter* hath Collected to my *Hand*, in pag. 424, and 425. I do but Hint.

After the *Dedication* of this *House of the Lord*, *Solomon* Fortified *Jerusalem* with a *Treble Wall*, and Repaired *Hazor* and *Gaza*; he Build *Berathon*, *Gerar*, and *Millo*, as also *Megiddo* in *Manasse*, on this side *Jordan*, and *Balak* in *Dan*: also *Ihadmor*, which he bestowed great *Art* and *Charge* on, in respect of which he raised *Tribute* through all his *Dominions*, besides a hundred and twenty *Talents* of *Gold* received from *Hiram's* *Servants*; *Solomon* offered him twenty *Towns* near, or in the *Upper Galilee*; which he refused, therefore the *Territory* was called *Chabul*.

These *Refused Towns* *Solomon* Fortified, and made a *Journey* into *Syria Zobah*, and Established his *Tributes*. He then visited the *Border* of all his *Dominions*.

From all which I must observe, according to the Intent for which I have here Epitomised this *History*, that beside the Advantage, that great *Circulation* of *Wealth*, brought to divers *Particulars*, it Collaterally brought in a very great *Wealth* to the *Generality*.

For without doubt, beside for the *Love* of his *Wisdom*, came many to see his *Magnificence*: 'tis the nature of *People* to be desirous to see new *curious Things*; witness the many *Journeys* are made

see *Audly-End*, *Hampton-Court*, and *Windsor*, the Houses of our Nobles, and some of our Famous Churches, the Theatre and Colledges at Oxford, and the rare Chapel and Colledges at Cambridge, and Henry the VII's Chapel: What Numbers, for little else, run from hence to France and Italy: I have heard, that the Travellers in France is the best Trade that belongs to the Country: this flocking of Strangers to Jerusalem, could not choose but cause them to be provided with a multitude of Merchandizes; and 'twas the Interest of Strangers, to carry some away with them: However, for Provisions and Necessaries, a great deal of Money must needs be left behind; but beside Supposition, the Matter of Fact is, that he began his Trade to Ophir in the fourth year of his Reign, or little after; for the Pillars of the TEMPLE were made of *Almug-Trees*, brought from Ophir, 1 King. 10. 12. and the Ships went once in three years, and they brought four hundred and fifty Talents of Gold at one time, beside other Things; and I see nothing to the contrary, but this Trade held all Solomons Reign, which was forty years, which might make twelve Voyages.

Also, 'tis likely that Solomons Subjects had ingrossed the Trade of Egypt, for they had Horses and Chariots, Linnen and Yarn at a Price; and it was through their means, that the Kings of the Hittites, and of Syria, were thence Accomodated, 2 Chron. 1. 11, 12. From hence, I think, it will plainly appear, that the Collateral Advantages of a good Circulation, are very considerable.

I think these Instances, that I have brought from this Magnificent Wise Prince, and great Experimental Philosopher, the Peaceful Solomor, will be sufficient

ent to answer such as shall have contrary Apprehensions; especially, if they be Englishmen; for they generally revere the Scripture; and to Confirm these, and Convince others, I could at large shew you what hath been done in some other Places: but least it should be too tedious; For those who cannot see at large, or have not the leisure or humour to do it, I'll hint some Examples; and first, from the Old Romans. Dr. Hakewill, in his *Apology of the Power and Providence of God in the Government of the World*: Printed at Oxford, 1627; in Page 345. and Forwards gives Instances enough: in Page 346, 'Two pieces of Plate cost Lucius Crassus one hundred thousand Sesterces. Another had a Drinking-Cup for Wine, made of one entire Gemme or Pretious-Stone: one Murrin-Cup, sold for fourscore thousand Sesterces. Petronius, who had been Consul, broke one that cost three hundred thousand Ibid. They had Tables made of Citron-Wood, full of Knots (I presume, our Olive-Wood Tables are somewhat in Imitation) one cost fiveteen thousand Sesterces. Seneca himself, though severe and stoical, had four hundred of these Citron-Tables; I wont suppose them each of that Value. In the Time of Claudius, a Slave had a Silver Charger of five hundred pound weight, and eight more attended it, weighing fivety pounds a piece. Vitellius had one that cost a million of Sesterces, Pag. 348. Vitellius was Feasted at one time by his Brother, with two thousand of the choicest Fish, and seven thousand Fowl, p. 353. Vitellius had a Dish of Meat very Costly: and Aesop the Tragadian had one that cost him six hundred thousand Sesterces, pag. 354. and 355. Caligula, with all the Invention of himself

self and *Friends*, could not find the means of spending the *Tribute* of the *Provinces* at one *Supper*. And *Heliogabalus* was very *Excessive*, *Ibid.* *Asinius Celer* laid down for one *Mullet*, at least, six thousand *Sesterces*. *Lucullus*, of a sudden, treated *Tully* and *Pompey* with a *Supper* that cost five thousand *Crowns*, pag. 356. Some have given for two *Pigeons*, four thousand *Sesterces*, pag. 362. In the time of *Tiberius*, three *Mullets* were sold for thirty thousand *Sesterces*, pag. 363.

Our *Author* reckons these Things as *Crimes*; and I cannot deny, but they might be such, the *ill Designs* of the *Managers* made them so: but that they were *Ills, per se*, of themselves, I believe 'twill be too hard a *Task* for any one to *prove*: If they can, let them do it: I am, for my part, very loth to be led by the *Nose* with, 'Tis commonly said so. 'Tis good *Arguments* should *Convince* Men. I pray, (seeing my *Author*, in p. 365. saith, 'That they (meaning the *Romans*) as far exceeded us in this way (meaning of their *Excess*) as we come short of them in *Riches* and *Dominion*.) Why might not they send for their *Provisions* beyond their *Territories*, as well as we use *Sturgeon*, *Caveare*, *Anchovies*, *Mangoes*, *Coffee*, *Tea*, *Sugar*, & many things else that we have from *distant Places*: and was it ever thought a *Crime*, simply to use these Things? No, sure. If I have ten times the *Wealth* of another, why may not I *Treat* my *Friend* at the Charge of a *Piece*, as well as he at a *Dinner* of two *shillings*? I suppose, none, that are most *scrupulous*, will *gain-say* it, least some of their own *Associates* should be found *Guilty*: the great *Feast* of *Solomon* was not taxt as a *Crime*; and altho' I will not deny, but *Excess* may, (as my *Author* in the

the afore-cited Place, saith) decrease our *Strength*, *Stature*, *Age*, and *Duration*; yet it is the *Abuse*, not the good Use of God's *Blessings*; neither are we obliged, for fear of a *Temptation* to *Excess*, to avoid God's *Creatures*, particularly *Honey*, though *Solomon* advises, we should not eat too much.

My *Author* in the same place saith, 'Tis better to supply them that want *Necessaries*, than to pamper our *Bodies* in *Superfluity* and *Riot*. I grant it: but it is far better to relieve them that can work, by employing them, than it is to give them *Money* to keep them in *Idleness*: and whether this their *high Living*, did not find *Livelihoods* for thousands, that in likelihood might otherwise have been in a low *State*; I appeal, almost, to any body; I think, in this *Discourse* above, I have prov'd it: and of this *Subject* I have spoken already, in *No. 5.* and *No. 6.* of my first *Volume* of these *Collections*.

These Matters of the *Romans* I must not leave yet, something of *Building*. *Scaurus*, when *Edile* built a *Magnificent Theatre*, able to receive eighty thousand *Persons* to sit well at ease: What this might cost, is not mentioned, but so much of the *Surplusage* of the *Furniture* provided for it (besides the daintiest part of it used at *Rome*) was burnt at his *Country House*, as came to an hundred Million of *Sesterces*; yet this piece of *Building* was scarce to endure for a *Month*, pag. 367.

Such a piece of Work was *Caligula* his *Bridge*: and of like nature were those *Buildings*, set up by the Command of *Caracalla*, *Ibid.*

A *Permanent Amphitheater* began by *Vespasian*, but *Finished* and *Dedicated* by *Titus*, was so large, that it contained only upon the *Stepps* or *Degrees*,
suf.

sufficient and easie *Seats* for eighty seven thousand ; so as the vacant Places beside might well contain ten or twenty thousand more, pag. 368. The *Furniture* thereof was *excessive*. *Nero*, instead of *Sand*, strowed the Yard thereof with *Dust* of *Gold*, pag. 369.

Their *Baths* were large and *expensive*, pag. 372. Their *Temples* in *Rome*, four hundred and twenty four ; and without doubt, very *Magnificent*. Their *Capitol* was very *Rich*, in which *Augustus* bestowed upon the Seat of *Jupiter*, sixteen thousand weight of *Gold*, and five hundred times an hundred thousand *Sesterces* in *Jewels*, pag. 374. Upon the *Gilding* of it alone, was spent above twelve thousand *Talents*, p. 375. Next to this was the *Pantheon*, the *Temple* of *Honour*, of *Fortune*, of the *City*, *Strangers*, and of *Peace*, inferiour to none : the greatest and fairest of all the Works in the *City*, the most *Sumtuous* in *Ornaments* of *Gold* and *Silver* ; upon this *Temple* were bestowed all the *Rarities* which men before travelled through the *World* to see, of all choice *Preces*, the most *Excellent* were laid up here, pag. 376. Their *Statues* were numerous as their *Citizens*, and of *Marble*, *Ivory*, *Silver* and *Gold*. Ibid *Commodus* had one of *Gold*, of one thousand pound weight. Their private *Houses* were also very great, a *Kitchen* of two *Acres* of *Ground*, pag. 377. And as Consequents, thither they call'd the most skilful *Architects* of *Greece* and *Asia*, and all the Parts of the *Known World*, *Crassus* bought ten *Pillars* for one hundred thousand *Sesterces*, pag. 379. The *Glory* of the *Capitol* was but a *Trifle*, in Comparison of *Domitian's own House*, pag. 381. And *Nero's own House*, which he named *Domus Auream*, was very *Rich*, pag. 382. *Caligula*

la strived to excell. Ibid. Their *Beds*, their *Chariots*, and *Furniture*, were of *Gold*, and *Richer*. Their *Kitchen-Vessels* were of *Plate*, pag. 383. *Lucius Lucullus* gave two *Talents* of *Silver* for a *Picture* : and *Hortensius* for another, gave one hundred forty four thousand *Sesterces*, pag. 384. *Lucullus* had by him at a time five thousand *Cloaks*, pag. 387. and ten thousand *Sesterces* was given for one *Cloak*, Ibid. Their *Rings* were *Numerous* and *Costly*, pag. 389. *Lollia Paulina*, *Caligula's* *Widow*, had as many *Jewels* on at one ordinary *Feast*, as cost four hundred hundred thousand *Sesterces*, pag. 390. *Julius Caesar* bought one *Pearl* for *Servilia*, the *Mother* of *Brutus*, that cost him sixty hundred thousand *Sesterces*, Ibid. Their *Looking-glasses* in *Height* and *Breadth*, were answerable to their *Bodies*, pag. 391. Beside their *Adornment*. Their number of *Servants* were like *Armies*, pag. 394. Their *Gifts* and *Expences* were large. *Caligula* in less than a *Year*, consumed seven and twenty hundred Millions of *Sesterces*, that *Tiberius* had laid up, pag. 396. *Clodius*, a *Private Man*, dwelt in an *House* that cost one hundred, forty eight hundred thousand *Sesterces*, pag. 397. I think it may here also be granted, That a *Home Circulation* was the Cause of bringing into these *Romans* an *Excessive Treasure*. To this day, *Rome* fares the better for those *Structures*, many are the *Pounds* that *Travellers* yearly spend there, to see them. They do the like, to see the *Fineries* and *Splendour* of *France* ; and since our *King's* *Return*, our fine *City*, and other fine *Buildings* have cost no small *Expense* from *Strangers* in viewing them.

Have not the *Moneys* the *Court* have had, improv'd and increas'd among us many *Trades*? Yes, sure: and for Instance, a great deal of *Lace*, both with *Silver*, and *Gold*, and *Plain*; Rich *Silks*, with *Gold* and *Silver Flowers*; and to that degree, that the *Silver* and *Gold Wire-Drawers*, that not many years since were leaving off their *Trades*, as being so bad, that they would not keep them, are now the best sort of *Handicrafts-men* in the *Town*, and all that they can produce, can hardly satisfy their *Customers*; and the *Silk-Throsters* are full of *Employment*. *Carving*, we out do the *World* in; even the *French King*, if he will have a rare *Piece of Work*, must send to Mr. *Gibbons* for it: I have seen a *Piece* for him, wherein was a *Point-Cravat* in *Wood*, that would vie with the *Curious Needle-work: Tapistry*, I am told, we make as good as any in the *World*: and had not the *Needs* of the *Court*, discouraged Mr. *Pointz*, in all likelihood we had made a great step in that *Trade* by this time. Whether any excels us in *Painting*, I know not: When the *King* came in, we bought our *Looking-Glasses*, and in a great measure our *Drinking-Glasses* from *Venice*; but now by the fashion of using *Glasses* in *Coaches*, & other good Means, we easily enough serve our *Neighbours*. Many other *Advantages* accrew from this *Fountain*, the *Court*; which, if they, and the necessary *Consequences* were reckoned up, for my part, I am apt to believe, that all the *Taxes* we have paid, would appear *Trivial* to them.

Several Things we have lately learnt to make, have stop't in some measure, the *Importation* from *Abroad*, and not only so, but we also with such serve our *Neighbours*: a *Specimen* whereof you may see in the *Accounts* of *Exportation* of *Goods* I took from *Custom-House*

House Bills, in No. 14, and 15 of the 1st. Volume of these *Collections*; as *Silk*, *Agua Vite*, sixty Tun a week at least, in *London*, *Pearl Barley*, *Babies*, *Chocolate*, *Coaches*, *Mapps*, *Refin'd Sugar*, *Syder*, *Battles*, *Juggs*, *Clocks*, *Watches*, *Camlers*, *Iron-Guns*, *Perukes*, &c. And true will appear the *Motto*,

Sol Orbem radius, & Rex illuminat Urbem.

*The Sun by his bright Beams the Earth doth chear:
And Princes Favours, Cities great do rear.*

If these Things be so, which I take to be undeniable, then, were I a *Parliament-Man*, I should be very willing to give my *Consent* for a farther *Increase*, which will be by *Supplies*.

But methinks, to all this, I hear some *Objections*, which will be necessary to be considered: which are.

First, That altho the giving to the *King* a great deal of *Money*, if it be *Spent* again among us, be but like the *Reciprocation* of *Water* from the *Earth* to the *Clouds*, that from thence it may descend in *Rains* and *Dews*, to refresh the *Earth*: yet it may happen, as sometimes it doth in *Rain*, that some only receive its *Benefits*: an *Instance* whereof was once in *Hampshire*, in a *Dry Time*, a *Man* offered a parcel of *Hopps*, standing, for 30*l.* a *Shoulder* of *Mutton*, and a *Capon*: The 30*l.* was bid, but the rest would not be given, and so the *Bargain* broke: afterwards came a *shower* on these very *Hopps*, and no where else about, so that these *Hopps* were sold for 60*l.*

Such a *Case* as this, I must confess, may often happen in the *Circulation* of *Money*, upon one may come

a large *shower* : But suppose it so, I pray what will this Man do with it? Why, he usually buys *Land*, and then the *Money* disperses, as well as if he nere had the *fingering* of it; and the Man from whom he hath the *Land*, if he hath his *Price* for it, is not grieved: perhaps he may live *Generously* or *Extravagantly*: If so, all *Trades* are encouraged: as I have shewn in *No. 5. Vol. 1.* of these *Collections*: or he may joyn with others, to Improve some *Forreign Trade*, or *Plantations*: witness the *Stocks* of the *Nobility* and *Gentry* in the *East-India*, *Guinney*, and *Hudsons-Bay Companies*, the *Plantations* of *Carolina*, *New-York*, &c.

If the *City* by any of these means get *Money*, they presently live better, and consume more of the *Coun-try Provisions* and *Manufactures*, take their *Poor* into their *Services*; and nor seldom put them into a *Capacity* of being very *Considerable*; and oftentimes in exchange do give themselves and *Money*, they become *Coun-try Gentlemen*, and there spend the *Income* of their *Estates*; and often, by the help of their *Cash*, are the best *Improvers* the *Coun-try* meet with; I believe 'twould puzzle any man to shew the *Person* which turns but *5 l.* a year, that he hath reason to believe, doth not finger some of the *Money* that descends from the *King*.

Another *Objection* will be, That if our *Kings* should have great *Sums* of *Money* given them, it might tempt them to slight the *Advice* of their *People*, and in time grow up to a *Tyranny*.

I will not say, but this is possible, but 'tis the unlikelyest thing in the *World*: for was it ever known, that a *Prince*, when his *Subjects* were in good humour, and were willing to supply him with what he could reasonably desire, that he should then study to disob-

lige

lige them; no sure, I think it can hardly be imagined, we rather see the contrary, 'tis for want of *Money* they set their *Wits* at work for to *Raise* it, and all about them set their *Wits* on the *Tenters* also; how they may, though by the *Ex-tremity* of the *Law* increase the *Revenue*: and rather will *Princes* so be supplied, than to have *Parliaments* that shall think their *Supply* and *Quiet*, no part of their *Business*. 'Twas want of *Supply* that made the *Christian Emperour* loose *Con-stantinople*; 'twas *Necessity* that brought *France* to the *Ex-tremity*, that forc't the *Parliament* to yield the *King Power* to *Raise* what *Supplies* he thought fit, which he keeps ever since: 'twas the *Necessities* of *Charles* the First, that was the *Forerunner* of our *Civil Wars*; and it has been the plentiful *Supply* granted to our *Present King*, in the beginning of his *Restoration*, that made such a *Harmony* between him and his *People*, that they hardly cared for being asunder; and they both were in *Contest* who should be *Kindest*, the one to grant *Priviledge*, or any thing could be ask't by his *Sub-jects*, for their *Profit*; and the other, what in any wise could be requisite to *Support* the *Honour* of the *Crown*: our *Statute-Book* will prove all this: Then was there no *Fear* of *Arbitra-ry Government*, nor of the *People* desiring to *Invade* the *Pre-rogative*. The *Consideration* of this, methinks should change the *Thoughts* of such *Parliament Men*, if any such there be, who think, the *only way* for their *often Sitting*, is to keep the *King Bare*.

We have the least *Reason* imaginable, to fear our *King's* hurting us, by being over *Rich*; for I can learn but of two that were so, *Viz. Henry VII.* and *VIII.* And in the *Reign* of the First, began the *Common's Wealth*, for then were *Cabot*, and the *Voyages* I have shewn already; and the *Trade* at *distance* thence has it *Date*, &c. The *Second* spent the *Money* left him by his *Father* briskly, and by his *Pompous Turnaments* and *Shews*, encouraged the *Trade* at *Home*: and under neither of these *Princes*, did the *People*, as I can learn, loose any *Priviledge*.

Then it will necessarily follow, that if *Reason* be a *Con-clusion* from *Experiments* or *Premises*, we have no reason to fear any *Damage* from our *Prince*, if he lives *Plentifully*; because we have no *Presidents*, that any *Prince* by that means did hurt us.

Th

The *Summe* of what I have said, is this : If the *Head* by having what the *Members* were wont to have, be no *Prejudice* to the whole *Body* : If the *Head's* growing great, will not bring the *Rickets*, but of necessity the rest of our *Members* must grow proportionably with it : If *David's* great *Wealth* was so far from hurting his *Subjects*, that it *Enrich'd* them : and *Solomon's* *Wealth* did the like : as likewise hath that of the *Mogul*, the *Present French King*, and of our wise *King Henry VII.* with the addition of helping us to *New Discoveries*, *New Manufactures*, and such like : and withal, if it keeps us in *Peace*, and from *Offence* by *Enemies* : If for the *King* to have power enough, to preserve him at *home* in *Peace* and *Safety* ; and a *Fleet* in Imitation of *Edgar the Peaceable*, and the *Famous Queen Elizabeth*, to keep our *Seas* from all *Annoyances* : If for our *King* to live in *Honour* at *Home* and *Abroad*, to pay his *Debts*, and make much of his *Subjects*, be necessary : If the *Subjects* of *Israel* were *Happier* under *Rich Solomon*, than they were for the most part under the *Poor Judges* : If *David's* *Wealth* caused him to *Encourage Husbandry* ; and *Solomon's* found *Employment* and *Trade* for all his *People* : And his *Wisdom* and *Philosophy* made him *Renown'd* both *far* and *near*, and drew *Rich Strangers* to spend their *Money* in his *Countrey* : If his *Buildings* were *Magnificent*, and the *Consequence* thereof a great *Home* and *Foreign Trade*, that continued all his *Life* ; and that, by the help of his *Taxes*, kept him from *War* : If his great *Expence* in *Offerings*, kept them always well stored with *Provisions* ; and no less made an *Inland Trade* : And if the *Fortifying* his *Countrey* kept up his *Esteem* : If the great *Magnificence* and *Expence* of the *Romans*, made them *Renowned* over the *World*, procur'd them most of its *Curious Artists*, increas'd their *Trade*, and thereby enabled them for greater *Expences*, and the *Ruines* of it cause a great *Trade* still : and if the like is done in *France* and *England*, according to the *proportion* of their *Expence* : If the great *Gettings* of some *Single Persons* hurts very few, but does good to *Abundance* ; If the *Richer* the *City of London* grows, the better it is for the whole *Countrey of England* : If plentiful *Supplies* be the *Means* of frequent *Parliaments*, *Freedom* from *Oppressions* and *Arbitrary Government*, and the *Means* to have

good

good Laws : If there be no *Instances*, that ever we had *Hurt* from *Enriching* our *Kings*, but much, by *Impoverishing* them : (as involving both the *Honour* and *Safety* of the *Nation* in the *Consequences* thereof) *Finally*, if a *large, swift Current* of *Money* in a *Trading Nation*, be a necessary *Forerunner* of a great *Foreign Trade* : And all these *Things* have been, and may be gotten by a *plentiful Supply* ; and that *Supply* shall hardly amount to so much as the *Expence* of a *Fly* to catch a *Trout* : then, I hope, these *Papers* will not be altogether *waste* ; and *You, Sir*, and I, shall yet live to see what I dare say, is the *Desire* of both our *Hearts*, *Viz.* The *KING* in *GREAT HONOUR*, *PLEN-TY* and *PEACE*, and his *Subjects* the *Richest* and *Happiest* that the *Sun* shines on.

I thought not at first to have been so long, but know not what I could well have left out ; for what is not so well as it should be, I hope you'll *Pardon*, your truly *Loving Friend* and most *Humble Servant*,

I. H.

Of the Value of the ROMAN Sesterce, compared with our ENGLISH Coyn now in use.

Because I have often in these *Papers* mentioned the *Roman Sesterces* : I think it *convenient*, to give you an *Account* thereof ; and I'll do it in *Dr. Hakewills* words, mentioned at the latter End of his *Preface* to the *Book* I fore-mentioned Thus : 'I held it requisite for the better understanding of those *Summs* by such who are not acquainted with the *Roman Coyns* in this table to express the Value of the *Sesterce*, and withal to reduce some of their most noted *Summs* to our *Sterling* ; that so the *Reader*, desirous to know any particular *Summ*, may either find it expressed in this *Table*, or easily find it out by proportioning the *Summ* he desires to know, with the nearest unto it, either above or under.

'The *Sestertius* was among the *Romans*, a *Coyn* so common, that *Nummus* and *Sestertius* came at length to be used *promiscuously*, the one for the other, so called it was *quasi Semisestertius*. because of three *Asses* it wanted half a one, and is thus

thus commonly expressed 115, or thus HS, by which, is understood two Asses and an half. For the Value of it, ten Asses make a Denarius or Roman Penny, so termed, because it contained Denasera, which were the same with their Asses; so as the Sesterce containing two Asses and an half, must of Necessity be found in the Denarius four times; now the Denarius being the eight part of an Ounce, and an Ounce of Silver being now with us valued at five shillings; it follows from thence, that the Value of the Denarius is Seven-Pence Half-Penny; and consequently, of the Sesterce being the fourth part thereof, Penny, half penny, Farthing, half farthing.

Sesterces	are worth	in English Money.
Twenty		0l. 3s. 1d. ob.
A Hundred		0 15 7 ob.
Five Hundred,		3 18 1 ob.
A Thousand,		7 16 3 0
Five Thousand,		39 1 3 0
Ten Thousand,		78 2 6 0
Twenty Thousand,		156 5 0 0
Fifty Thousand,		390 12 6 0
A Hundred Thousand,		781 5 0 0
Five Hundred Thousand,		3906 5 0 0
A Million,		7812 10 0 0
Five Millions,		39062 10 0 0
Ten Millions,		78125 0 0 0
Twenty Millions,		156250 0 0 0
Fifty Millions,		390625 0 0 0
A Hundred Millions,		781250 0 0 0
Two Hundred Millions,		1562500 0 0 0
Five Hundred Millions,		3906250 0 0 0
A Thousand Millions,		7812500 0 0 0
Twenty Seven Hundred Milli.		21093750 0 0 0

A Talent is 750 Ounces of Silver, which after five Shillings the Ounce, is 187 pounds.

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COLLECTION OF LETTERS

For the Improvement of Husbandry & Trade,

TUESDAY, June the 16th. 1683.

The Contents.

The Culture and Cure of Safflower, from Henry Hall Esq;
An Account how to Rear Cattle, from Mrs. E. H. in Lancashire. The way they Fat Calves at Tring in Hartfordshire. The way they Fat Lambs for London Market at Hadly in Hartfordshire. Directions about Bees. An Offer to make it appear that this Kingdom will thrive more, and the Manufactors live better when Provisions are Dear, than Cheap. The manner of making Bricks at Ebbisham in Surry.

The Culture and Cure of Safflower, from Henry Hall, Esq;

SIR,

IN Compliance to my Promise, I here send you the best Account I can at this present of Safflower: for when I came to look over my Papers, I found, through Inadvertency, I had left some be-

behind me in the Countrey: but what you find here defective, please to let me know; and at my return, I will endeavour to give you further satisfaction.

Safflower is a *Drug* that usually comes from *Germany*, and is chiefly *Cultivated* about *Strasburgh*: here it is much used by *Silk-Dyers*, who give a good price for it; which encouraged a Gentleman of my Acquaintance, to procure some *Seed* from thence, which he sowed in some Grounds, not far from this Town, with so good success, that notwithstanding several Discouragements he met with, he sent an *Agent* purposely to get a considerable parcel of *Seed*, which was disposed of in several Places; some small quantity I got, to make some Experiments; but recommended for the sowing of a quantity, a piece of Ground in the Valley of *Eversham*, in *Glocestershire* belonging to a Sister of mine, who the year before had from this ground a Crop of *Wheat*; the Ground was a mixt *Sand*, of about 15 *s. per Acre* value, and was then dressed as is there usual in that Countrey for *Barley*, only it had a *Harrowing* extraordinary, for the better and finer lying of it. This piece of Ground consisting of about twenty five *Acres*, was taken for two years by an Adventurer in this *Seed*, at the rate of 25 *l. per Acre*, in consideration that this *Plant* is said to be a great Impoverisher of Land: he sowed his *Seed* in *April*, and gathered the *Flower* in *August*; which having Cured, was put into Bags, and sold at *London* for ten pounds *per pound*: a price, he said, much below his Expectation: but at that rate,

rate, by the best Calculation we could make, he gained above 30 *s. per Acre*, clear profit, all other Charges discounted, as the *Rent* of the Ground, and all Labour, excepting the Price of the *Seed*; which he would not impart, but magnified at an Extravagant Rate: there was also a plentiful Return of *Seed*: which had it been well managed, would have amounted to a considerable value; perhaps as much as the *Flower*; which for want of Experience, was a little too timely gathered, and at a greater Charge than needed; neither was it so carefully cured, as it ought, which much impaired the Price.

This *Flower* in my Opinion is improperly called *Saf*, or *Zafflower*; for the *Seed* is the same we call *Carthamus*, and is Cultivated after this following Manner.

The Ground being prepared and made fine, the *Seed* is sowed in *Rills*, as *Pease* hereabout *London* are most usually sowed; but this at a greater Distance, that with more Conveniency it may be howed and cleansed from *Weeds*; besides, it must be sowed very thin, for it is a strong *Plant*, and requires room to spread, one *stalk* setting forth *seven, ten, or twelve Heads of Buttons*, all which bear *Flowers*: the exact quantity to an *Acre*, for want of my Notes, I dare not affirm; but to the best of my remembrance, it was about five *Pecks* to an *Acre*. After it is come up about six Inches in height, the ground must be well cleaned from *Weeds*; from which afterwards, for the most part, the *Plant* defends it self, but if once risen, they must be carefully weeded out; other looking to it needeth not, until the *Flower* groweth ripe; which is known by its Colour; for then

then it will be of a deep Orange-Tawny; it ripened here in the beginning of August.

The Flower is thus gathered, such hands as can be cheapest got, are made use of in this Work, as Women and Children, who with little Spud Knives, pull the Flower of the Buttons, which they put into the Baskets they carry on their Left-Arm, which when filled, they empty into other great Baskets; in them it is carried home to be Cured: the ripest of the Flower must first be gathered, the others will ripen successively; the Work may take up a week, or ten days before all will be fit to gather: the Planters aver, that the gathering the Flowers doth not impede the ripening of the Seed: but in this I am a little doubtful; for some Experiments I have made, have evinced me of the contrary. After the Flowers are gathered, the Seed ripens, which is known by the cleaving of the Buttons, or some other trials: then they cut the Plant, and allowing of it time to dry: having bound it in sheaves and bundles, they house it, and at convenient times thrash it. This Field, by Estimation, might yield 140 Bushels, for only some part of it was thrashed, the Residue was put up in a Stack in the open Air, but Thatched, to preserve it from Wet.

There was no other Ceremony in the Curing of this Flower, than the laying of it on a clear Floor, where the Air had a free access; it is layed about two Inches in thickness, and stirred three or four times in a day, to accelerate the Drying, and avoid Fermentation; which would spoil the colour of the Flower. In the performance of this, I think a Stove would with more Advantage, and quicker dispatch,

prepare the Flower for Packing; which when they are dry, they do in Canvas-Bags.

What I have here writ, is from the Relation of some of the Planters, and the person that sowed the Ground here mentioned, and gathered the Flower; in which I should have instanced many other Particulars, had I permission to mention the Undertakers, who at that time being in pursuit of some other Designs (to them in appearance of much greater Concern) wholly neglected this, and failing under some Misfortune, the Design of prosecuting this Improvement, was quite laid aside; and I have not heard of any one else that hath since undertaken it.

But since the sowing of this Seed, and propagating of the Plant, may arrive to a very great Improvement, if rightly managed. I will offer some Experiments of my own, for the encouragement of this Plantation; and which seem to me to obviate the main Objections I have heard made against it.

The first is, that the Flower ripening in the time of the Wheat-Harvest, Hands are then very hard to be got; which occasions the Charge to exceed the Profit; for in that Season the Women and Children employ their time in Leasing, or rather Stealing of Corn, and will not then undertake any other Work, although tempted with extraordinary Wages.

The second is, That the English Seed is not so good as the German, and will hardly serve one year, and then double the quantity must be sowed; so that the procuring of New Seed every second year out of Germany, will be too great a Charge

to answer the Expectation of the Planter.

A third is, That this *Plant* is a great *Impoverisher* of *Land*; for after a Crop of *Safflower*, it will hardly bear any thing.

In Answer to the first, I dare affirm the *Plant* to be a hardy and strong *Plant*, and will endure to be sowed much sooner, without any prejudice; so that the *Flower* will come to be ripe before *Wheat Harvest*: then plenty of hands will not be so hard to be got.

I sowed some in *February*, and some about the middle of *March*, both thrived very well, flowered, and was ripe to gather in *July*, and was gathered before the 20th. of that Month. That sowing in *February* was not so well coloured as the other sowed in *March*: but that I impute more to the neglect of my *Gardener* than to any premature sowing of the *Seed*: for having but a small quantity of *Seed*, I ordered the sowing of it in an inclosed piece of *Ground*, in which I had a *Nursery* of *Trees*, and he sowed it too much in the shade; which I find it will in no manner brook; for although my *Ground* was richer than that in the *Vale*, yet my *Plants* were not so *Luxuriant*, nor the *Flower* so well coloured as that which grew in the *Vale*; which lying open, and exposed to the *Sun* and the *Air*, produced a larger *Flower*, much better coloured, and more upon a *stalk*, than mine did.

Asto the second, I must beg leave to think it a great mistake in those *Planters* that aver that the gathering of the *Flower* doth not at all impair the ripening of the *Seed* for having left some *Flowers* stand-

standing purposely that *Nature* might do her own Work: I gathered the *Seed*, when ripe, which proved brighter, larger, and much heavier than any of the other, whose *Flower* was forced from it; therefore am confident, that if some part, when sowed, be left to stand, to have its full time to ripen, without gathering the *Flower*, and the *Seed* preserved to a second sowing, that that *Seed* will be full as good as what is brought from *Germany*; as in like manner we find *English Clover seed*, to be as good as any brought over from *Flanders*.

That it doth impoverish the *Ground*, I believe, but not so as to disable it from bearing an other Crop. Those that have ground to Let, for this or any other Novel Plantation, will use the best Arguments they can to raise the Price, and this of *Empoverishment* is always the chiefest: but this piece of *Ground* that was sowed with *Safflower*, did, the year following, bear a good Crop of *Oats*; and had it been the third year, fallowed and well dressed, would have been fit, either for *Wheat* or *Safflower* again.

This I also observed, that very much of the *Seed* where the *Flower* was gathered from the stalk, was not only light, but hollow and black within; wherefore I am of Opinion, that if some part of a piece of *Ground* were left standing to ripen of it self the Goodness of the *Seed* would fully compensate the Loss of the *Flower* in its future Product, and the remaining *Seed* might be very profitable for other uses: for when the *Frost* had occasioned some *Seeds* to fall from the sides of that stock I mentioned before, it was observed, the *Turkies* belonging to the

he House, most greedily fought after it, and in a short time became very Fat; then they tryed some Geese, who likewise fed, and grew fat much sooner than their Neighbour's, that fed on other Grains: and my Sisters Bayly did aver, that a Colt, by eating of this Seed, recovered in a short time from great Poverty to a very good Condition; and had he permitted him to have eaten more of that Seed, he doubted not but the Emprovement of his Flesh and Growth would well have requited the Charge of his Physick.

The Novelty of this Flower, as it drew several Spectators of the Countrey, to see it in the Field; so it likewise begot an Opinion in some of the more Ignorant, that it was Saffron; in which they were so confirmed, from the Name, and the tincture of it, that they privately stole considerable quantities, especially, when it ripened, and used it in their Puddings, Cakes; nay, even Bread; but finding in it a Purgative quality; which to some was very troublesome, they sold their remaining stock to an Apothecary at the next Market, who was no looser by the Commodity.

If this proves of any Service to you, I shall be extream glad to have contributed in the least to so laudable a design as your Improvement of Husbandry; in the prosecution of which, that you may meet with Encouragements and Success proportionable to your Merit, is the real wish of

Tork-Buildings,
Nov. 14.
1683.

Your humble Servant,

Henry Hall.

I have

I think, to this Account of Mr. Hall, it will not be improper to add what is said by Dr. Robert Plot of Oxford, in his Excellent Natural History of Oxfordshire. Chap. 6. Parag. 35. Pag. 155. In these following words, Viz.

Beside Grasses, there have some other Plants been Cultivated here, of no mean use; such as *Urtica*, sive *Carthamus Sativus*, Manured Bastard-Saffron; sometimes called *Safflower*, for dying of Scarlets; and therefore by some called also the *Scarlet Flower*; whereof there was once a considerable quantity sown at North-Aston by Colonel Vernon; the Seeds being planted in Rows, about a foot distant, for the more convenient *hewing*, and keeping it clean from Weeds. In these Rows it rises with a strong round stalk three or four foot high, branching it self to the top, where it bears a great open skaly head; out of which it thrusts forth many gold yellow threads, of a most Orient and shining colour; which they gather every day as fast as they ripen, and dry them well: which done, it is fit for Sale, and dying of Scarlet.

U An

An Account how they rear Milch-Cows and Oxen
in the Parish of Hallfall in Lancashire: from
Mrs. E. H.

WE, for our Breed for the Dairy, choose a Cow about six years old (we mind not the colour) that hath been Bull'd by a Broad-Headed large Bull, about the same Age. This Cow should be Broad-headed also, with small or slender Horns, with a Tail whose Rump without the Hair, reaches down below the Cambrel, that is, the back Knee: This Cow, as soon as she hath Calved, (which we would have at the latter end of March, or beginning of April) we milk some from her, and then let the Calf suck; and so we do every Meal for a Month, but take less and less, as the Calf grows bigger; and always when the Calf hath done sucking, we milk what is left behind; and this our milking is for two reasons, the first, that the thinnest part, which is very blew, may be taken away, and the Calf may have the thicker, which we believe nourishes most, and is fullest of Cream; for we find, that what is milk't last, hath most Cream of all (which perhaps is the reason Stroakings are so much set by.) The second Reason, Viz. Milking after the Calf hath suck't, is, that she may be us'd to give her Milk the freelier, and in greater quantity.

All this month we keep the Calf in the Crib, which is a little slanting, clean and dry, and with clean Straw, and give it nothing but what it sucks, as aforesaid; toward the latter end of the Month,

if

if it be good weather and warm, we, about Noon, turn it with others, into a little dry Grass-Plot, where they have not much room, and after three or four hours take them in again.

The Cow all the while we keep within a night, with Meadow-Hay and Oat-Straw; and when the Month is out,

Then we take two Calves, as before prepared, and put them into a good dry Pasture night and day, where there is some good clear water, unto an old Cow (sometimes, if 15 or 16 years old, nere the worse) for these will be gentle and let the Calves suck: if it were the Dam of either of the Calves, she would be over kind to her own, and starve the other: Care must be taken Night and Morning, that the Calves may be seen to suck, till they are expert at it; and thus we leave them till the latter end of August: but always in the Edisto, or youngest short Grass we can, which we always have, because we make Hay from Midsummer to Michaelmas: then we wean them from the Cow, and put a great many together, but still in good young Pasture, as long as there is any, and sheltered warm Ground. When the Grass is gone, we give them Hay, and Oat-straw mixt: Oat-straw, because we think it tenderer than other: and thus we order them till they are two years old, and a little more.

Then at the latter end of July, or beginning of August, we put this two year old Heifer to a Bull, (as before describ'd) about three years old, because a great Bull would spoil such young Ones: then a little before Christmas, or according as the Weather is, we take her into the house a night,

U 2

and

and tye her about the Neck with a *Sow*, that is, a piece of bent wood instead of a *Rope*, and this is made fast to a Stake by the side of the *Booses*, or *Stalls*, with another Ring, call'd the *Frampat*, which is put on the Stake, that the *Heifer* may lift her Head up or down; and before her is a *Cratch* with Fodder, about a Foot and half from the ground, or not quite so much; one great reason of this Method is, that she may be tame, and become easie to Milk.

Thus we order her till she *Calves*, there keeping her a Month as before, and then take her into our *Dairy*, and there keep her till she is twelve or fifteen year old, and made a *Nurse* on, as before described. Such *Nurses* will have *Calves*, and be good *Nurses* three or four year (although the *Calves* will make them thin and lean) after that, when have taken *Bull*, we feed them with *Hay* all night, and every Morning and Evening, we give them as many *Oats* in the *Straw*, with the great ends cut off, and put away, as they will eat, and about *Easter* they will be very fat, and good *Beef*.

If before the ordinary Age, the *Cow* misses being with *Calf*, which the *Expert*, in three months time, can tell by feeling her *Flank*, then we fat her after the manner of old *Cows*.

O X E N.

We order them just as we do the *Cow-Calves*, above mentioned, till they are ten days or a Fort-night old, and then we cut them, that is, we get a Neighbour that is expert at it, and cuts a great many, and allways will have the sign in the Legs.

This

This man comes always in a Morning, before the *Calf* sucks, and lays the *Calf* on his side, and two Men hold it, the *Cutter* kneels at the lower part of the Back, and having one of the *Calf's* hind Legs held up, he takes the *Cod* in his hand, and at that part, that when the *Calf* is standing is lowermost, he with a *Penknife* gives a Cut about an Inch and half long, cutting with the edge to the *Cod*, not putting in the Point and ripping up, and cuts but just through the Skin, seldom makes any Gash in the *Stone* (his use makes him perfect) and then slips out the *Stone*, and cuts it off from the strings that hold it, and leaves them at a certain length, but how much that is, truly I cannot now tell you: when he hath taken away one *Stone*, in like manner he doth the other; if the *Calf* be well cut, he will not bleed much, but otherwise he will, and then seldom live; but if bleeding soon stays, and kept warm, he seldom dyes.

When the *Calf* is thus cut, then the *Cutter* puts into each hole a piece of *Fresh-Butter* quite without *Salt*, if it can be had; if not, of the best that is eaten, and called *Fresh Butter*; this piece of *Butter* is about half Inch Square, and as long as the Cut; then he lets the *Calf* get up, and walks it a little up and down, that it may find its Legs, and it may be seen whether it bleeds much or no, and then lets it suck the *Cow*, but not so much as at other times, because it shall not be fill'd with over much matter, to make it bleed; and sometimes the *Calf* it self will not suck so much as at other times; when it has suckt, it is put into the *Crib*, and watcht all that day, and raised often for fear of Bleeding: if he bleeds much, we seldom do any thing but walk him

him about, and that often helps; and sometimes to the Wound we put *Cobwebs*, and if these do not quickly stop the Blood, the *Calf* seldom lives; but when we foresee he will dye, we quickly kill him, and he is pritty good Meat: If he is like to do well, he will leave bleeding in three or four hours, and at Night we let him suck as much as he will, and use him as ordinarily.

Two days after we wash the Wounds with *Beer* and *Butter* warm, and then put in square pieces of fresh *Butter*, as before; the other will be melted and gone, and thus we do every Morning (*Viz.* wash and put *Butter*, according to the bigness of the holes) if the Wounds be very sore, or the *Cod* be much swelled, otherwise once in two days, till it be well, which usually is in a Weeks time; he must be kept warm, otherwise his *Cod* will swell, and so will his Body, and he will dye.

This Care being taken, we order him as we do a *Cow-Calf*, only keep him a week longer before we turn him out a nights, and then keep him abroad with the *Cow-Calves*, till he is three years old, then we put him into a sower *Grass*, not that we think that *Grass* better for him, but because 'tis cheaper, and 'tis usually in some *Park*, or *Woody Ground*, where he may have much Room, and *Wood* plenty to shelter him in hot Weather, or *Water* to stand in, to hinder his running up and down much, which will melt his *Grease*, or swelt him, which oftentimes kills him. They who have not Conveniency themselves, are wont to *Score* their Cattle in such a Pasture, that is, put them in *Park* or Place as before, at a certain *Summe*, from *May Day* till *Holy-Rood Day*, and often give ten shillings a Head. I suppose

pose, the meaning of the word *Score*, is as now, there being several men's Cattle, they write them down, so formerly, before much Writing was in fashion, 'twas used to be *scor'd* with Chalk: sometimes we *Score* them till *Martinmas-Day*, or the 11th. of *November*, and sometimes to *St. Andrews-Day*: but when we take them from *Storing* at *Holy-Rood-Day*, being the 14th. of *September*, we put them into the worst *Grass* we have, still because cheapest, and keep them there till towards *Christ-mass*, then we take them into the House: first, because there is little Food for them abroad; but principally, to make them tame.

When we take them into the House we tye them with *Sows* and *Trampets*, as we do the *Heifer* in the former Account, to make them tame; and about *Candlemas* we teach them to draw, as follows.

We yoak two of them together, and we put them in the middle, putting two Old Ones next the *Plow*, and two Old Ones before, and keep a Man of each side the Young Ones to keep them in order, and to speak them fair, and deal gently with them; for we find, that if they be much beaten, they seldom prove well; and thus we attend them two or three days, but only we are careful not to let the Young Ones work above three or four hours in a day; after this they will be very orderly, and do as other *Oxen* do, which is, work from *Six* to *Eleven*; and then with a Bait of *Hay* till one, they will hold out till five; and thus, if they hold healthy, we keep them to the Yoak till they are nine or ten years old; & then about *May*, when *Seeding*, or *Sowing* time is done, we turn them to *Grass*, to wit, the best we have, and fit them for the *Drawer* or *Butcher*.

Some

Some Oxen will be fat by Michaelmas, and some not till Christmas or Candlemas; but those we are fain to keep at the Stall with good Hay, and a Sheaf of Oats a day; for we bind all our Oats in Sheaves; and when we would have them very Fat, we keep them two year, and sell them at all Prices, between eight and sixteen pound a piece.

The lean Drawing-Oxen we turn out all Winter with our Cows, and they are sometimes subject to a Disease in their Feet, by the Footlocks; just above their Claws, and sometimes betveen their Claws, which we call the Fowles: this we cure by rubbing the fore part with Salt and Water, which will make it bleed, then we make a Pultise made of Garlick bruised, Salt and Butter, and bind it to the part, and change it once in two days till it be well.

When 'tis on such a Place, that we cannot well lay on a Pultise, then we anoint it with a little burnt Butter, after it is washed with the Salt and Water.

Notes upon the two former Accounts.

The Description of a Broad Head, Slender Horn, and Long Tayl, in Pag. 154. I set down as I receive it, that the Curious Observer may confirm it as a Truth, or detect the Errour; but the Countrey Folk value their Cattle by these Marks much.

From what is said in Pag. 154. as if the thin blew Milk did not nourish so well as the thicker, that comes latest, which not only this my Informer, but several others affirm: If, I say, this Affirmation be true Matter of Fact, I think it will appear, that either this is not so apt to turn Acid, vvhich is thought to be the Causes of Fluxes, that vvasse and make Lean;

Lean; or else, that it is Bayres, Fat, and Oyle Things, that very much conduces to Nourishment.

The Sign in the Legg give no need to, but the Cutter will hardly do it at any other time; but for ought I can Learn, he cuts abundance, and is expert, therefore hath good Success; whereas the other that mind not the Sign, cut but few, and are not so well vers'd in the Matter, therefore the Event is not so successful.

This melting of the Grease in Pag. 158. I must confess, I do not understand; I suppose 'tis only meant Sweating or Swelling, as 'tis call'd; and whether Sweat hath any thing of Grease in't is some question, for none appears to the Eye; and in a Handkerchief, by the Fire, 'twill dry up; likewise it doth so in Horses; and 'tis generally thought to be the same with the Serum of the Blood, and that is heavier than common Water; as the Honourable Robert Boyle Esq, in his Excellent Natural History of Humane Blood, hath by notable Histories made appear; for in Page 70, 71, he saith thus, 'Having Hydrostatically examined the Serum of Humane Blood, we found it heavier than common Water; for a piece of Red Sealing Wax being suspended in a good Balance, by a Horse-hair, was found in the Air to weigh one Dram and fifty six Grains, and the Water thirty five Grains, but did in the Serum weigh but thirty three Grains.

'This Tryal was Confirm'd by a more exact one, made with an Instrument that I purposely caus'd to be made for weighing Liquors nicely; in which, when common Water weighed 252 Grains, an equal Bulk of Serum weighed 302: and because I supposed

sed that all Serums of Humane Blood would not be of equal Specifick Gravity, thought he to try the Blood of another Person in the same Instrument, and found it to weigh two Grains less, that is, 300 Grains in all.

There are other Matters in this Chapter worthy Note to my purpose; but to them I'll refer the Reader.

Now if this Sweat be Serum, and Serum be heavier than Water, it much differs from the other sorts of Fat and Grease, that we ordinarily meet with.

The way they fat Calves at Tring, in Hartfordshire.

When we would make an excellent Fat Calf, we chuse a large Cow-Calf, and as soon as 'tis Calved, and clean, if it hath not strength enough to stand up and suck, we help it; and if it be a hard Milch't Cow, we milk out some Milk before the Calf sucks; and while the Calf sucks on one side, we always Milk on the other, and so often the first day, as the Calf sucks, and sometimes oftner, if the Udder be apt to Core, or the Cow does not well give down her Milk; and also, what the Calf can't suck, we draw out even to the last drop.

Sometimes the Cow, with Milking and Sucking, will not give down her Milk, and her Udder will Core and swell, and if not well look't to, be spoil'd; sometimes she will give Blood instead of Milk, for three Months; but this Core we cure with anointing it with Bacon-Grease; sometimes with Oyl of the Herb Adders-tongue; other times with the Juice of Elder

Elder

and Cream boyled together; but that which I have found best, hath been, rubbing it cold with the Matter (Viz. Card and Salt) that come out of an old Renner-Bag; this we do every time we Milk; and this last Medicine I never knew fail, in two or three times using.

The second day, and so forward, we Milk twice a day, all we can get out, and then let the Calf suck, and she, for a while, will thus get enough; but as she grows bigger, we abate in our Milking.

We keep the Calf in a Penn, such an one as described about rearing of Milch Cows; only this we tye, and give her just room to lye down, and hang by her a Chalk-stone to lick on, that it may be white, and a Wisp of fine short Hay, which the Calf will now and then eat a little of.

When the Calf is a week old we Let it Blood, by cutting off an Inch of the Tyl, and let it bleed as long as it will, which never does hurt, and every Week, or ten days we cut another piece of the Tyl off, and always two or three days before it be kill'd; for we find that this Bleeding both fattens and whitens the Calf: Till this way of Bleeding was brought in Fashion into our Town by one John Gere, a Teoman, we never could have so good Calves as we have had since.

All the while we keep it very dry, and with clean Wheat-straw, some use Bean-straw, thinking it better, because it will lye hollow.

About nine Weeks old we sell our Calves, sometimes for 3 l. 10 s. a piece, seldom or never for less than 40 s. although we are thirty Mile from London. If the Cow hath not Milk enough, we let the Calf suck two Cows.

W 2

This

This is the Method we use, and I like best; but I have known at *Layton* in *Essex*, they cob their *Calves* Morning and Evening with *Cobs* made of *Boyl'd Rice*, and let the *Calves* suck only what they can get after the *Cows* are *Milk'd*, and by this means, save so much *Milk*; or buy their Neighbours *Calves*, and fat with a few *Cows*, so many more *Calves*: some with their *Rice* prepar'd as afore, mix *Malt*, *Flower*, a little *Cream*, and some *Powder of Chalk*: And I have heard of some that mix a little *Brandy* with it, thinking it makes the *Calves* sleep, and they fatten the faster.

Sometimes the *Calves* are subject to a *Scouring*, which we always cure by giving them two or three Spoonfuls of *Rennet*, or rubbing their Mouths with a handful of *Salt*.

The way they fat Lambs for the London Market at *Hadley*, near *Barnet* in *Hartfordshire*.

WE take the *Lambs* as soon as they are year'd, and put them in a close, warm *Pen*, and in a Trough by them we put white *Pease* and *Bran* mixt together, and hang by it a handful of good fine *Hay*, tyed in a Cord, as also a *Chalk-stone* for them to lick on. So let the *Ewes* go in good *Grass*, but bring them to the *Lambs* four times a day, *Viz.* at eight, twelve, four, and eight of the Clock, that they may suck as much as they will, and let the youngest *Lamb* suck first a little of every *Ewe*, which the *Ewes* will permit, after the *Lambs* have been held to them, and they have been used to it a while; then we let the next in Course suck, and be sure the eldest at last: for we find that the last *Milk* nourishes most.

Thus, if we can have early *Lambs*, vve can, after they

are three Weeks, or a Month Old, sell them for fifteen or sixteen Shillings a piece.

When vve sell any *Lambs* off, vve still let the rest suck all the *Ewes*, as long as vve have a *Lamb* left. And some vwith us use much the same Method in *Fattening of Calves*.

Notes on the Account of *Fattening Calves and Lambs*.

Whether the *Matter* from the *Rennet-Bag*, mentioned in *Pag. 163* (or *Rennet* it self) that is so good to Cure a *Cow's Udder*, that is *Cored*, may not also be a good Medicine for *Women's Breasts* that are *Cored*, I leave to the Consideration of the *Expert* in the Faculty of *Chirurgery*.

The *Chalk-stone* to lick on, mentioned in *Pag. 163*, I am afraid the *Country* People think, because it is white, it makes the *Calf* so; but I believe it is a great mistake: but I know that *Chalk* is a great *Alkali*, that is, a destroyer of *Acid* or *sharp Matter*, as may be seen by scraping a little into *Vinegar*, *Juice of Lemmons*, or any other *sharp Matter*, for it vwill make a great *Effervescency* or *Working*, and after a while, take avway the sharpness of the *Acid Liquor*. Now, if it be true, that it is *sharp* or *Acid Matter* that hinders *Thriving*, and ofren causes *Laskes* or *Fluxes*, then 'tis very reasonable, that *Chalk* may hinder *Leanness*, and much help the Colour of the *Veal*. And vwhether this may not be a proper thing to give in *Milk* to such as are in *Consumptions*, and other *Pining Leanness*, I submit to the Judgment of the Learned.

Instead of cutting the *Tayles* of the *Calves*, some let them *Blood* under the *Tongue*.

It is a common saying, *That often Bleeding will make People Fat*: Although there are Instances, more than a great many, of those that have not fattened for it. I must confess, it seems to me reasonable enough, that where any one labours with a Disease, that *Bleeding will Cure*, *Bleeding* may properly enough be thought to be the Cause of *Fatning*: but why it should cause it in a Body of perfect Health, I cannot at present see the Reason; but have hinted it, in hopes the Learned may consider it, in order to detecting an Error, or encouraging farther Improvements. I have given you what the Countrey Folk say is Matter of Fact; if they mistake this, for some other Cause you must pardon me.

The Bigness and great Consumption of *London* doth not only encourage the Breeders of *Provisions* and *Higlers* thirty Miles off, but even to fourscore Miles; wherefore I think it will necessary follow, That if *London* by its bigness, or any other way, should consume as much again, the Countrey within these fourscore Miles, would have a greater Imployment; or else, those that are further off will get some with them.

Directions for the making of Colonies for Bees, and by a new invented Model of Hive, to Improve them, whereby without killing, may be enjoyed the Fruit of their Labour.

S I R,
 HAVING this following Account by me, I thought it might prove no small Advantage to our Country if it were brought in use; which it is probable

able may be, if you will insert it into your *Collection of Letters for Improvement of Husbandry and Trade*. It is as followeth, *VIZ.*

Take Boards, in thickness full half an Inch, plaind on the one side, of which make a Hive, in form like unto a four square Box, observing to turn the plaind side of the Boards innermost, and to have them of such Wood as the smell is not offensive to *Bees*: the length of which Hive is to be twenty Inches and a half within, as well at top as at bottom, and the breadth betwixt Front and Rere, to be eighteen Inches within at top, but at bottom only fifteen Inches, the ends to be nailed through the sides, and the top to be open, but on the bottom a board to be nailed of twenty two Inches square, that so it may cover on all sides the top of another Hive, or Colony, that may be placed under it: Then prepare ten straight sticks, plaind smooth, of twenty one Inches long each, in thickness an Inch, and in breadth one Inch and an half; which sticks must be laid cross the top, from Front to Rere, at the distance of half an Inch from one another, a vacancy of half an Inch to be left at each end, betwixt the two outermost sticks and the ends of the Box, and at these distances they are to be let down half an Inch into the two upper edges of the Box, Front and Rere, and the sticks themselves are to be taken off half an Inch more of their thickness at each end, on the under side one Inch and half in length, whereby being let down square

square and even, the top side of the sticks will come just level with the tops of the sides and ends of the Box or Hive, so as that it may be close covered with a loose square Board or Plank well fitted on, as close as may be, to advance an Inch over the top of the Box on each side, that if occasion be, the Joints under the Edge of the Plank may be stopp'd with Clay in the Winter time, and a Brick, or some other weighty thing be laid thereon to keep it fast down; or by setting another Box or Hive upon it, the bottom whereof, upon occasion, hereafter mentioned, to serve as a cover: into which cross sticks are to be framed, at each end thereof another flat stick or lath of an Inch and half broad, and of a quarter of an Inch thick, which are to run down flat by the two sides Front and Rere, on the inside of the Box within an Inch of the bottom, and within three Inches of the lower end of the Laths is to be fixed in each Frame a cross stick of about three quarters of an Inch broad, to keep the side Laths out close to the sides; in each of which Frames it is designed that the Bees should fix a Comb, beginning at the top of the Box on the under side of the cross sticks; which Frame, when wrought full to the bottom, will each of them contain an intire Comb of the whole breadth and depth of the Hive or Colony; and by this means you may at your Convenience (first taking off the top Board or Plank) draw out a whole Comb, it not being wrought to the sides, but in the frame, and the lower end being narrower than the upper, it will come up with ease; so that in the Spring, when you would increase the Number of your Hives, and make two of one, you may, and thereby prevent their Swarming, which

which in *GRÆCE* is in this manner practised.

Having in readiness always a number of new Hives sufficient to supply their expected Increase, each fitted with a fit number of Frames, as is above directed, which Hives and Frames are all of the very same Dimensions, so that when any of the Frames are taken out of one Hive, they may exactly fit another; then, in the Month of *March* or *April*, as they see the Hives well stock'd with full numbers of Bees (which by their working may easily be perceived) they begin first with those that are the fullest with Bees, and take off the board that covers the Hive; which if they find to stick, by reason of any Combs wrought or fixed to it through the Intervals of the Frames, they quickly separate it therefrom by giving it a twist or half turn; Then they draw out the Frames one by one, with the Combs, and all the Bees that are upon them, beginning first at the ends, and placing them in the new Hive (which is always ready provided, and stands by without any Frames in it) where each Frame is put in, in the very same order that they stood in in the old Hive, and so proceed 'till half the Frames be removed, which vacancies in the old Hive are supplied with new Frames, and the vacancies in the new Hives also with empty Frames, for the Bees to go to work upon, then they cover both the Hives with their own boards, and set the new Hive in the old ones place, and the old one in a new place; and all this is done by them in the middle of the day, when the greatest part of the Bees are abroad, who at their coming home, without much difficulty, divide themselves equally;

this Device hinders their *Swarming*, and prevents their flying away and being lost.

It might not be amiss to try what the effect would be, if this work were performed in the Night, according to the *English* way, noting which way gives least disturbance to the *Bees*.

Also, it being done the other time, to observe whether at the Return of the *Bees* that are abroad, most of them go to the new Hive, or to the old one, and accordingly, when the *Combs* are a shifting, to take more or less of them out, according as you shall find this generally to be; for if they do resort most to the new Hive that stands in the old ones place, you need then to shift no more than four of the ten Frames into the new Hive, letting the other six remain in the old Hive that stands in the new place, where it is prevented from receiving the Supplies by the resort thereto of the *Bees* that were abroad at the time of its shifting, they not knowing where to find it at their Return.

When you draw out the Frames with the *Combs* and *Bees* upon them, and find them to come out pretty easie, it were worth the tryal, whether it would not be less disturbance to the *Bees* (if it can be done) to remove two or three Frames at a time, which may the better be done by the clapping of a short piece of Lath, of about a handfull long, under the end of those Frames that you intend to take out together, by which you may also keep the Frames at an equal distance when you let them down into the new Hive.

And this must be observed when you put any empty Frames into Hives, to place the bottoms of these Frames at an equal distance as well

as.

as the tops; otherwise the *Combs* may be fixed beside the Frames in the Intervals, fast to the sides of the Hives, and then it will not be easie to draw out the *Combs* without breaking of them. But if this way of drawing out two of the full Frames together as above, doth prove feasible, then the best way will be, to make a good part of the new Frame two joyned together at bottom and top, especially those that are to be placed next the ends of the Hives; which will be a good means to keep so many of them at their true distance at bottom.

Now the best Method to enjoy the Fruits of these Creatures Labours, and without destroying of them, to take from them their *Honey* and *Wax*, and without using that noysome way of smothering with *Brimstone*, is done in this manner.

Your Hive having a Mouth or Door cut in the middle of the bottom of the Front side, for the *Bees* to pass in and out at, of about an Inch high, and three Inches wide; on each side of which Mouth is fixed a Groove of three Inches high on the out side, wherein doth run up and down pretty stiffly a little Trap-Door, wherewith to shut the Mouth of the Hive when there is occasion, under which Mouth there is also cut another hole in the bottom board, of about four Inches and a half wide, and six Inches deep from the inner side of the Hive; in the side edges and further end of which hole must be cut a Groove to let in a false Door of the same substance as the bottom board is of, that so when 'tis shut, it may be plain and even on both sides with the rest of the bottom board: the use to be made of it is this.

X 2

About

About the Month of *August*, or sooner, if you find the Hives well filled with *Wax* and *Honey*, prepare so many new Hives as you have old Stocks, all fitted with Frames and bottom Boards, as is before directed; which old Stocks being placed in a row upon broad Planks that are set upon Posts drove into the Ground, about a foot high, they, the old Stocks or Hives standing at such a distance from one another, as that there may be room enough betwixt Hive and Hive, to place in those Intervals the new prepared Hives, without any top-board upon them, then in the Evening, when the *Bees* are all at home, you are to shut close down the Trap-door over the Mouth of the old Hive, that so the *Bees* may not offend you, then you are to take up the old Hive, closed as it is, and set it plumb, directly even on all sides, upon the top of the new Hive that stands by, without any Cover, the bottom-board of the Hive that you put a top supplying the place thereof; then draw out the false door that is in the said bottom (now middle) board, as far as the inside of the Front of the upper Hive, and no farther, still keeping the Trap-door that covers the Mouth of the upper Hive close shut down (but that of the under Hive to be open) so that the *Bees* having no other passage out but through the false Door in the bottom-board, they will betake themselves to the new Habitation below, and begin to frame new *Combs* therein, not delighting to lye among the *Honey* above, if they have place otherwise.

And when you find that they have well taken to the new Hive, which may haply be in a Fort-nights time (but would best be discovered through a small Window of Glass fixed in the Front of the Hive.)

Hive) then thrust in the false Door that runs in the Groove in the said bottom-board of the upper Hive, which is now betwixt the two Hives, by which means you shut out the *Bees* that are below from the *Honey* and *Wax* above; in which Condition let them stand two or three days longer; in the mean while, if any *Bees* be left behind in the upper Hive next Morning, you may open the Door and let them out, and at Noon-day when they are gone, shut them out, and a few days after in the Evening, you may take away the upper Hive, and in its room cover the lower Hive with its Top-board, so to remain all *Winter*; before which it may be expected the *Bees* will in their new Habitation have gathered a sufficient quantity of *Honey* for their Maintenance 'till next *Spring*. And thus have you the Fruits of their former *Summer's* Labour at your Mercy.

When you have taken the *Combs* clean from their Frames, you must also cleanse the Hive that you took them from, either by hot Water or scraping them, being carefully laid up, they will serve again next year.

When your *Stocks* or *Hives* come to be numerous, they may be placed on broad Planks, set along by a *Pale* or *Brick-Wall*, but at such a distance from it, that a man may come behind the Row of Hives upon occasion, to assist in managing them; and from the top of the *Pale* or *Wall* may be built a *Shed* or *Pent-House*, of a sufficient breadth to defend the Row of Hives from the Weather.

I presume, that if this *Pent-House* should be too chargable or cold, if Wood, which I understand was the fault of *Geddy's Colonies*, twenty other cheap ways may be invented to keep them warm with *Straw*, or that with *Wool* underneath, or having the Hives *Lackered*, or setting them in a *Green-House*, that in extream cold is kept warm by Art. But these are only the Conjectures of,

Sir,

Your Humble Servant

J. A.

An Offer to make it appear, that this Kingdom will thrive more, and the Manufacturers live better, and sell their Manufactures Cheaper when Provisions are Dear, than when Cheap: With some Proposals for the keeping up of Dearness, Industry, and Plenty.

Provisions, by reason of our two last Hard Winters and our Dry Summer, being risen to great Price which causes much Complaint among the generality of People. I do think it a very reasonable thing for me to endeavour to stifle the same, by shewing, that Dearness is so far from being a Prejudice to the Nation, that it is rather to be wish't for. And this I am the more obliged to, by reason that in No. 20, pag. 96. of the first Volume of these Collections, which was Published November the 9th. 1682, I partly made a Promise so to do.

In

In order to the well understanding of this, I will consider the *Round* or *Wheel* some things are apt to take, and that quickly, if not retarded; for Instance, *Plenty* causes *Laziness*, that *Scarcity*, that *Dearness*, that *Industry*, and that *Plenty*.

Now this *Wheel* may be made to move swift or slowly, according to the Managements of the Superiour Ranks of People.

For Example.

If there be of *Food* a *Plenty*, *Laziness* follows it, and this *Laziness* may be prolonged, if so be that the People be compelled to an extraordinary *Savingness*, or by *Fashion* or *Example* be beaten off or hindred from those things that are wont to make great *Consumptions*: For Instance, should they be compelled to eat only *Brown Bread*, drink *Small Beer* or *Water*, keep near their own Homes, so that *Coach-Horses* and *Saddle-Horses*, that devour *Corn*, should grow almost useles; should *Finery*, and all superfluous things be beaten out of Countenance; for then the generality of People will not work, because they can live without it. This is so plain, that I think 'tis visible to every Body: but however, that none may have an Excuse, I pray consider the Gentry, they spend their time in Recreations, because they have enough, they say to their Souls, *Soul, take thy Rest, for thou hast much Treasure laid up for many Years, eat, drink, and be merry*. Whereas he that by misfortune, or other ways, through *Scarcity* comes to be pinch't, immediately strives for some publick Office, or other Employment; 'tis few that love to Starve.

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The Rich Merchant or Tradesman commonly knocks off, and reckons it his Glory to be a Gentleman: And the generality of poor Manufacturers believe they shall never be worth ten pound, therefore they seldom strive to get ten shillings beforehand, and if so be they can provide for themselves sufficient to maintain their manner of Living by working only three days in the Week, they will never work four days; they say, if by Sickness they should come to want, the Parish is bound to find them: And for the Beggar, he cries, 'tis hard, if I mind my business (especially in London) if I do not get eighteen pence a day by begging (besides having the Liberty to see any Friend or Shew, and being but very little at any Man's Controul) it is a hard Case; why then should I work hard all day, be tyed to one place, and at the Checks and Chiding, perhaps, of a humourfome Taskmaster? I see no reason, I'll beg on still, unless the severe execution of a hard Law, or the Decay of my Masters Abilities or Charity shall hinder me. And thus they go on.

This I question not but will be granted by all, unless about the Manufacturers. But there, that I may not be thought to Dream, it will appear, if it be ask't of the generality of those Men that employ Journey-men or Day-Servants, and if it be put home to them, whether they do not think that their Servants one with another, could in Cheap Times do as much work in three days as ordinarily they do in a Week, they would few of them deny it, I am sure several have confest it to me; particularly when the Frame-work Knitters, or Makers

of

of Silk-Stockings had a great Price for their Work, they have been observed seldom to work on Munday and Tuesdays, but to spend most of that time at the Ale-House and Nine-Pins; nay, almost the whole Company entred into a Confederacy not to work for a Month together, that thereby they might keep up their Prices: this was, as I take it, about four or five year ago, and there is hardly any of their Company that were then in being, will deny it. The Weavers, 'tis common with them to be drunk on Munday, to have their Heads ach on Tuesday, and their Tools out of order on Wednesday. As for the Shoemakers, they'l rather be hang'd than not remember St. Crispin on Munday; and it commonly holds as long as they have a penny of Money or pennyworth of Credit; and very often, especially the good and quick Workmen, begin their Week's work on Fryday Morning, or perhaps Evening, but then work on till Sunday Morning; and when their Credit is run so far that 'twill go no farther, they pack up St. Hugh's Bones and march to some other Town in England, there to Set up afresh. The Stile the Painters give themselves is, Honest Drunken Curs; they often work at heaving of Glass, lifting of Penters, emptying of Sellers, and such like. And thus if I would, I could give you such true Accounts of most other Professions that live by Labour; but this, and more than this may any body know, that will but give themselves a little diversion to look into the Publick Houses of most of the out parts of the City, and the Country Towns, will be found in Proportion but little better.

I think, by a Consideration of what I have said,

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it will sufficiently be granted, *That Plenty causeth Laziness.*

And that *Laziness* should cause a *Scarcity*, I think will need but little Proof, for we live not in the Ile of *Lubberland*, where *Fowls* fly into our Mouths ready roasted; for we can have no *Corn*, nor a great many other *Necessaries*, if some body went take pains for them.

Thus we may see how the great Blessing of *Plenty* may be abused, and how the Abuses may be prolonged: But *Nature* will have its Course.

It is very seldom but that *Vertues* and *Vices* being their Rewards and Punishments with them; a *riotous Life* is like *Tom Thorsman's Dog*, if he leads an ill Life, he will have an ill End; so this sin of *Laziness*, it will be attended with *Scarcity* and *Dearness*, unless men will all at once be resolved to dye.

But although this sin of *Laziness* be punished with *Scarcity* and *Dearth*, yet Evil sometimes may be the Forerunner of great Good, as I shall endeavour to shew in the following Argument.

Although I cannot allow, that *Scarcity* shall always make *Dearness*, because sometimes the *Scarcity* shall make things grow out of use, and other things be made in lieu of them, that may be more useful: yet I dare affirm, that *Scarcity* of necessary Commodities, such as *Provisions* are, and other things that are made necessary by their being much in vogue, will make such Commodities *Dear*; and this we see daily by the *Rise* and *Fall* of Commodities: For Instance, of *Meat* at this time, that is *Scarce* by means of our late hard *Winters* and dry *summer*, of *Mourning* at the late King's Death, of *Places* to see the *Shew* at the *Coronation* of our King
and

and *Queen*, but more especially at the Siege of great Towns, as that of *Samaris*, in the sixth Chapter of the Second of *Kings*, verse 24. when an *Asses Head* was sold for four score Pieces of *Silver*, and the fourth part of a *Kab* of *Doves Dung* for five Pieces of *Silver*; which may be illustrated by the contrary in the next Chapter, whenas the next day to the *Scarcity*, a *Plenty* made a Measure of *Fine Flour* be sold for a *Shekel*, and two Measures of *Barley* for a *Shekel*. More Instances might be brought to prove this; but I think they need not. Wherefore I will proceed to the next Spoke, and consider how *Dearness* causes *Industry*.

I think I need not question, but that it will be granted me, That without *Necessaries* none can live; That the *Poor* that have not wherewithal to buy *Necessaries*, must take pains to get them in ordinary Courses; That a Man may have a thousand Pound a Year, and yet have not enough to buy those things that he hath made necessary. Which if granted, I think it must follow, that all these sorts of People must take pains, or bring themselves to great Inconveniencies. To make this appear, I need no better *Argument* than the old *English Proverb*, *Need makes the Old Wife Trot*. For Example: The *Silk Thromsters* can seldom get their *Silk* wound and brought home so diligently and quick as in *Dear Times*. The *Weavers* are in the like Case; and *Journemen Shoemakers* at this time will be their Masters most humble Servants, and do almost what they'll ask them, for hopes of a little Work.

I am not unsensible of the Complaint, that there is no *Trade*, and that's the reason that People can have no Work, and therefore they are fain to catch

it from one another as industriously as they can: but I appeal to any understanding considerate man, whether there can be ground for any such Complaint at *London*, when 'tis considered, the loss of our late King put almost every body into *Mourning*, which made them buy new *Vestiments* from top to bottom but lately; and at the *Coronation*, a great many supplied themselves again with Garments more rich than ever, and they are now arrived to second *Mourning*, our Town hath been filled with *Addressers*, we have had great store of *Ambassadors*, *Strangers*, and *Country People* to see the *Coronation*, and now are arrived our *Term* and *Parliament*; I cannot hear that the *Customs* are lessened; and is it possible, these things considered, to have the *Trade* abated? Perhaps the *Mourning* may lessen the use of *Silk*; and it's as likely, that in a little while the *Silk* will prevail above the *Mourning*; what then, must not the Dealers in *Wool* live as well as the Dealers in *Silk*; or, is the *Trade* lessened because 'tis altered from one to another; it is no *Argument*, therefore for shame let it be used no more.

Now if my Reasonings are good, and I can shew that *Industry* makes a *Plenty*, I have made the *Wheel* go round, and shall obviate the Questions of some, that 'tis probable might otherwise be dissatisfied; and this, one would think, should need no *Argument*; but consider, that Men can hardly be called *Industrious*, if so be they produce no more than they did when in great *Plenty*; but without doubt, they do procure more than they were wont, for more Labour will procure more Commodity, and the *Labourers* that were able to live but from
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Hand to Mouth, must of necessity find out some more Employment, or starve; but of that we hear little or nothing, they do work cheaper than ordinary; for instance, *Shoemakers* make Men's Shoes now for ten pence the pair, when as they were wont to have fourteen pence; and 'tis a common thing, when Manufacture is cheap, for the Rich *Tradesman* to buy and throw by, saying, hang it, 'tis hard if it wont pay *Interest*, 'twill fetch Money one time or other. I know a *Weaver*, at this time hath five thousand pieces of *Ribbon* by him, and still employs his Work-Folk, although 'tis with a pretence, to keep them from starving; and I have no cause to think but others do so as well as he.

The Advantages accruing by this *Dearness*, may be seen by considering what follows.

If by the *Dearness* aforesaid the *Manufactors* cannot keep up their Habitual Port by working three days in a Week, they will work four days, or find out Engines or new Contrivances equivalent; by which means a fourth part of *Manufacture* is procured more; which being more than we were wont to furnish our *Markets* withal, will not presently vend, therefore the pressing hunger or want of the poor *Manufactor* forces him to offer his Work to Sale, which makes it slighted, and it obtains but a small Price, which enables the Purchaser to sell it cheaper abroad, and so comes nigher, or out does the *Forreigner* that sells the same thing at the same *Market*, if he be not exactly in our Circumstances; it *Freights* a fourth part of Shipping also.

Nay, the *Manufactor*, if he sells cheaper than usual, and *Provision* be a fourth part dearer, he must, by so much as he sells cheaper, work more than a
fourth

fourth part to maintain his old Port: And this still encourages Cheapness and the Advantages as above said.

'Tis my Belief, that these Spokes of Dearness, Industry, and Plenty, may a great while be kept uppermost, by the good Management of those in Power, particularly by our Sovereign Lord the King, if he will be pleas'd to encourage such ways, as by *Favour*, or otherwise will encourage great *Consumptions*, if he will be pleas'd to renew the *Act* call'd *The Bounty Act*; whereby was given from the Royal Treasure five shillings for every *Quarter* of *Wheat* that was *Exported* when it was under the Rate of five shillings the *Bushel*; and for other *Corn* a certain Price.

But I foresee an *Objection* that will be made to this, *Viz. Why should the King give so much out of his Pocket without a Compensation?*

To which I Answer: That I am very sensible, that it cost the late King a great deal of Money: I have seen the Account of sixty one thousand and odd Pounds in one Year; which must needs pay for, if it were all *Wheat*, twelve score and four thousand *Quarters*; which at thirty Shillings a *Quarter*, did amount to three hundred sixty six thousand Pounds; which if this *Bounty Act* was the Cause of its being carry'd out, was all by it gain'd to the Nation, because in a little time we should be so far from having less, that we should have a greater stock of *Corn*: for I observe, that whatsoever *Commodity* there is much sold of, the Sellers thereof endeavour to stock themselves better with than ever.

This we may see by the *East-India Company's* selling of *Chineries* and *Silks*; the more they sell, the more

more they bring to sell: and the *Timber Merchants* on the *Bank-side*, they never were so well stor'd with *Timber* as since the Burning of *London*, and the great *Consumption* caus'd by the Re-building thereof.

If this be granted (and I am sure it cannot be deny'd) then I humbly conceive that (let the return of *Corn* bring the King in by *Custom* what it will) it will be no hard Matter for the three *Estates* in *Parliament* humbly to beseech the King, that it may be enacted, that a Months Tax of Seventy thousand pounds, or an equivalent rais'd some better way, may annually be set apart for this; which if it be, its probable the Advantages will be greater than at present can be imagin'd: it may make us the *Granary* of *Europe*, it will increase our *Naviga-tion*, and bring a great many of our Idle People into *Employment*, our Lands will be Improved, besides a hundred other Advantages.

If it be good to have *Provisions* Dear, then 'twill be good, in order to our procuring more *Corn*, and our selling it for a good Price, to make the five shillings a *Quarter* to be six shillings, and other *Corn* proportionable; I mean, to let the *Exporter* have the five shillings the *Quarter* always when the Price is under six shillings the *Bushel*, and so proportionable of the rest.

Another way to keep up this *Dearness*, *Industry*, and *Plenty*, will be, to have the *Excise* of *Beer*, *Ale*, and other *Liquors* rais'd, the *Strong-Beer* and *Ale* to at least the old three shillings and three pence, and the *Small* to nine pence the *Barrel*; and this should be laid, not only as its now, upon *Publick Breweries*, but also on all others that brew their own *Drink*.

I know this will not be thought well on by a great many, but 'twill be of good use for all that, for it will increase Trade, *Brewers* will be in every toller-able Town, and on them depend *Wheel-Wrights*, *Coopers*, good *Teams of Horses*: *Cum multis aliis* meaner sort of People, for the saving of a shilling or two by *Brewing*, will not be diverted from better Employments whereby they might get twice as much; this part of their *Provision* will be dearer to them, and will oblige them to more *Industry*, whereby they will procure more *Manufacture* to sell cheaper, as I have shewn above. The *Gentleman* hath no reason to complain, because, if he doth pay more than usual, he will pay but like his Neighbours, and why he should be exempted from that, I see no reason; but somewhat more; it is impossible the Nation should thrive, and not the Land (which commonly belongs to the *Gentleman*) thrive with it; the *Gentleman* may, as I have shewn already, buy his *Manufactures* at a cheaper Rate; and this will be a good means to save him *Land Taxes*, and to pay for the Exportation of *Corn*.

A third way to keep up this *Deareness* will be, to lay an *Excise* of a groat a pound upon *Wool*, both on what grows at home, and what is Imported, and to pay back at *Custom-House* so much per pound for what shall be Exported, as shall be thought needful.

I am sensible that this at first sight will be thought a strange Proposal, well knowing that the *Gentleman* would have *Wool* Dear, but would have it come into his own Pocket, not the King's; and will mistrust least this Duty should make his *Wool* sell from him so much cheaper, because *England* must sell as cheap as its Neighbours; and the *Mer-*
chant

chant and *Tradesman* think it the Kingdom's Interest to sell *Wool* as Cheap as we can, that we may thereby out-sell our Neighbours, and that the *Wool* is the least considerable in a Piece of *Cloth*. I must, to support my Proposal, strive with good Reasons to satisfy both; which I will do as follows, considering two things:

First, What *Hurt* it will not do.

Secondly, What *Good* it will do.

First, It will not hurt the *Spaniard*, *Irish*, *French*, or *German* in the Price of their *Wool*, because they may sell their *Wools* at home, as they use to do; this *Excise* must be paid only among our selves, and 'tis equal with our own, except it should be said, that it should be laid so much on a shilling that any sort sells for; neither will it hurt our selves, because the *English Wool* is still in Proportion to others, neither will it hinder the Sale of our *Woollen Manufacture*, because we may sell as cheap as we werewont to do.

It is commonly said, that the *Wool* of *England* and *Ireland* is of such variety, that with it we may make most sorts of *Manufacture* wanted, although *Foreign Wool* be a good help to us; it is also said, that it is very a sorry *Manufacture* that *Forneigners* can make of their *Wool*, without a mixture of some of ours. If this be true, and I am told by understanding Men that Trade in *Woollen Manufacture*, that it is true, then it will follow, that if we can keep to our selves the *English* and *Irish Wool*, we shall have a great Advantage of other Folk, and I think the way I have proposed will do the feat.

In the second place: The *Good* it will do, will be this. It will cause a diligent Search for *Wool*, that it may pay the King's Duty; and it will in

likelihood make it not worth while for *Forreigners* to buy our *Wool* at so much difference as will be between us and them, except it be for such *Manufatures*, the like whereof we make not; and then 'twill not do us much Damage; it will make their Workmen and *Wool* come over hither, that here it may be work't with ours, it will imploy our People, and I see no Reason but the Trade may be doubled.

I do not as a great many that have wrote about the *Woollen* Affair, complain *That our Trade is decay'd*, for I believe the contrary, and if it were here to purpose, could give sufficient Reason for my thought: but I am fully satisfied that we still have a great many idle People that might be set on work for the Kingdom's Welfare, and I think these ways will do it; but if others wont think so, I must think alone, and subscribe my self

Yours,

J. H.

The manner of Making Bricks at Ebbisham in Surry, in a Letter to the Worshipful Captain James Twiford now Sheriff of Bristol.

S I R,

According to your Desire, I have procured the manner of making *Brick*; and my Friend tells me as follows.

We make two sorts of *Bricks*, *Viz. Stock-Bricks* and *Place-Bricks*; the *Stock-Bricks* are made solid, strong, and so hard, that we have laid them under a Lo-

Loaden *Chart-wheel*, and yet they will not break.

The manner of making them is thus:





We choose a piece of Earth that we commonly call *Hasse-Mould*, or a stiff *Loam*, with a mixture of a little *Sand* and a great deal of *Earth*, without one bit of *Clay*; this *Earth* is with us about three foot deep (although at some places 'tis twenty foot deep, as at *Cafe-Holton*, and several other Places) and two yards square of it will make a thousand of *Bricks*, every *Brick* being nine Inches and a half long when 'tis made green, four Inches and a half over, and two Inches and a half thick; and the usual Price with us is to pay to our *Landlord* a *Groat* for every thousand we deliver out ready burnt.

Before *Christmass* we begin to dig as deep as the *Earth* allows, and lay it as level as can be, and end before *Candlemass*, that it may lye to mellow, that is, that the hard lumps we dig may shake to pieces; which it will do either by help of *Rain* or *Frost*; when 'tis thus dug, we let it lie till *Lady-Day* or *Easter*, when we seldom fear fair Weather. Then we water the *Earth* well, and temper it with a narrow Spade about five Inches broad, that the Workman may hold out, with which we dig it down, and then temper it with our bare feet till it is in good case to make a *Brick* on, that is, like a piece of *Dough*, such as will just stick in the *Mould* or *Frame* when lifted up, and not fall off of it self; then we bring to the *Earth* a Table standing upon four Legs, about three foot high, five foot and a half long, and three foot and a half over, and load it with as much as 'twill well bear at the Right Hand end about half way; at the other end are boards nail'd

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about nine Inches high to lay Sand in, and in the middle we fasten with Nails a piece of board, which we call a Stock; this Stock is about half an Inch thick, and just big enough for the *Mould* to slip down upon: then we have a *Mould* or *Frame* made of *Beech*, because the *Earth* will slip easiest from it. This *Mould*, *Frame*, or *Voyder* is made of the bigness of the *Brick* abovesaid, only half inch deeper, to give way for the Stock aforesaid, and it must be shod with a thin Iron of half a quarter of an inch thick both on top and bottom, and this keeps it from breaking and wearing out; we also have upon the Table before the *Mould* or *Frame* a little *Trough*, that will hold about three or four quarts of *Water*, which we put in, and in it a *Strike* to run over the *Mould*, to make the *Bricks* smooth: this *Strike* is usually made of *Fir*, nine inches long, an inch and a half broad, and half inch thick; we have also on a little Form just by the *Sand-Bin*, about 30 little pieces of Board twelve inches long, six inches over, and half inch thick, which we call *Pallat-Boards*. When we are thus prepared with Utensils, then one man strows *Sand* on the Table (as Maids do *Meal* when they mould *Bread*) and moulds the *Earth* upon it, then rubbing the *Stock* and inside of the *Mould* with *Sand*, with the *Earth* he forms a *Brick*, strikes it, and lays it upon the *Pallat*, then comes a little Boy about twelve or sixteen years old, and takes away three of these *Bricks* and *Pallats*, and lays them upon a *Hackstead*, a rais'd place like a *Balk* in a *Field*, or a *Border* in a *Garden*; which is a piece of Ground five or six *Rod* long, two foot over, with a *Gutter* on each side about a foot deep, and as wide a top; which is made by digging

ging half a foot deep, & the *Earth* that comes thence raises the *Hackstead*: this *Hackstead* must be well beaten, that it may be smooth, level, and hard, and upon it the boy lays his *Bricks* edgeways, the thickness of the *Pallats* one from another, on each side of the *Hackstead* a row, and so that the Heads of each row may be two or three inches asunder, & we lay them askew, thus  & when they are pritty hard, which in dry  weather will be in a Day, then the Boy lays another Course cross ways, thus  till they come to be ten Course high, then  they are covered with *straw* till they be hard and dry, which usually is in three weeks or a month, and then we burn them. One Man without a Man to temper, or Boy to carry them away, but to temper and lay them himself, will make a thousand in a *Summer's* day, *Viz.* about fourteen or fifteen hours; but with a Man to temper, and a Boy to carry them and lay them as above, he will make two thousand, and an extraordinary Man three thousand in a day; and the usual price for this tempering, making, and laying is four shillings the thousand, and the Maker's part is as much as the Temperer's and Boy's.

Our *Bricks* being thus prepared, the next matter is to *Burn* them; which is after this manner.

When we begin a new *Brick-Ground*, for want of *burnt Bricks*, we are forc'd to build a *Kiln* with *raw Bricks*, which the Heat of the Fire by degrees *burns*, and this will last three or four year; but afterwards we make it with *burnt Bricks*, which we reckon better; and we choose for it a dry Ground, or make it so by making *Dreyns* round it. This *Kiln* we build two *Bricks* and a half thick, sixteen *Bricks* long from inside

inside to inside, and twelve *Bricks* over from inside to inside, and about fourteen or fifteen foot high; at the bottom we make two *Arches* three foot high, three *Bricks* broad, and seven *Bricks* long, that is five *Bricks* longer than the Wall of the *Kiln*, and so the sides will be a *Brick* and a half each: Then we set the *Bricks* five Course high, as they stand in the *Hacksteads*, then we set five Courses more, and allow every Course two or three Inches to hang over, so that at ten Course high there is a clear *Arch*. Of these ten Courses one must be set close, and another you may run your finger between every *Brick*, and after that we set three *Bricks* upon them edgeways, thus  till they are five or six and thirty Courses high  from the bottom: Then we begin with half a *Bavin* Fire at a time in each *Arch*, supplying it continually till the *Water-Smoak* be off; which is done when the *Smoak* begins to arise black, and usually in twenty four hours; then we put in a whole *Bavin* at a time, and make the holes up with *Bricks* four Course high; to keep the *Fire-Feeders* Shins from burning; and thus we continue till they are at the top red fire hot, which is usually also twenty four hours; and then we cease our *Fire*, and let them cool, and sell them as soon as we can for as much Money as we can get, but usually about thirteen or fourteen shillings the thousand. The Prices for *Making* and *Burning* is seven shillings the Thousand, the *Wood* three shillings the Thousand.

This is the Account, and if it be Instrumental to the Setting up a *Manufacture* in your Country, it will encourage the like Attempts from your humble Servant,

J. H.

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