

T H E
Young Man's Companion:
O R,
Arithmetick made Easy
W I T H

Plain Directions for a Young Man to attain to
Read and Write true *Englysh*, with Copies in Verse
for a Writing School, Inditing of Letters to Friends,
Forms for making Bills, Bonds, Releases, Wills, &c.

L I K E W I S E,

Easy Rules for the Measuring of Board and
Timber, by the Carpenter's Plain-Rule, and by Frac-
tions; with Tables for such as have not learned
Arithmetick: And to compute the Charge of Build-
ing a House, or any Part thereof.

Also Directions for Measuring, Guaging, and
Plotting of Land by *Gunter's* Chain; and taking heights
and distances by the Quadrant and Triangle. The Use
of *Gunter's* Line in Measuring Globes, Bullets, Walls,
Cones, Spire Steeples, and Barrels: With the Art of
Dialling, and Colouring of Work within and with-
out Doors. Directions for Dying of Stuffs, &c.

Together with a Map of the Globe of the Earth
and Water; and *Copernicus's* Description of the visible
World. Also a Map of *England*; and to know which
are Cities, and their Distance from *London*.

Choice Monthly Observations for Gardening
Planting, Grafting, Inoculating Fruit-Trees, and the
best Time to Prune them; and the making Wine
of Fruit: With experienc'd Medicines for the Poor.

An Account of *Curiosities* in *London* and *Westminster*.

Written by *W. Mather*, in a plain an easy Stile, that a
young Man may attain the same without a Tutor.

*The Thirteenth Edition: With many Additions and Alterati-
ons, especially of the Arithmetick, to the Modern Method.*

London: Printed for *S. Clarke*, the Corner of *Exchange
Alley*, next *Birchin-Lane*, 1727,

THE PREFACE.

THIS being the Thirteenth Edition, (with large Additions, and many Alterations of my Young Man's Companion, is a sufficient Proof of the good Acceptance it has met with, for its being so useful to all Persons, but more especially to Accomptants, Writing-Masters, Surveyors, Masons, Carpenters, Bricklayers, Plaisterers, Glasiers, Gardeners, &c.

For in this my Book, tho' mean, you'll find
A good Company for an honest Mind.

Young Men, by the Reading such Books as treat of Moral Goodness, and the most useful and profitable Arts, are kept from Idleness, and freed from Melancholy, which none are troubled with who live truly in the Fear of God, Heb. 3. 18. Rom. 5. 11. 1 Pet. 3. 8. Prov. 16. 6.

(clear,
Friends, Books, a chearful Heart, and Conscience
Are the most choice Companions we have here.

(Alphonsus, King of Aragon, being asked, What Company he liked best, reply'd, Books; for these (says he) tell me faithfully of my Faults, without Flattery, &c.

Young Man, Read, or Study not above one Hour at a Time, and then walk, or work in a Garden, (Man's first healthful Employment, Genesis 2. 15.) another Hour, for
A 2 some

The P R E F A C E.

some stirring Exercise of Body, (as thy Time will admit) and when thou art weary, sit down to Read, (which may be called Rest) not leaning thy Breast against a Table for that may occasion a Consumption) and then thy Faculties will be fresh, and thou may'st study another Hour with Delight.

But, Young Man, pray to God to give thee Wisdom. (James 1. 5.) to chuse the best Books to Read, that when thou hast, by thy studying good Books, attain'd to a competent Knowledge in the Doctrines of Christianity, or in useful Arts and Sciences, or in both, Be not high-minded, but meek and lowly in Heart, Matthew 11. 29. For,

*Knowledge that puffs up the Possessor's Mind.
Is evermore of a pernicious kind.*

But to the Grief of Good Men, there have many Books been made, which were a Weariness to the Flesh (Eccles. 12. 12.) of good Christians, else they had not burnt them, tho' they were valued at Fifty Thousand Pieces of Silver, (Acts 19. 19.) So mightily did the first Christians abominate all Vicious Books, of unlawful Arts, as Witchcraft, Necromancy, Divinations, Sooth Saying, Palmistry, Judicial-Astrology, Romances, Play Books, and other Pagan Authors, which have bewitched many Young Men into Atheism, Errors, &c. That the worthy Dr. Bray says to this Effect, viz.

It is a terrible thing to have been an Instrument of another's Damnation, and if he is one that hath writ ill Books, or been a broacher of Heresie, an Author of lewd Pleys, and wanton Verses, the Mischief and Poison of such Temptations do fly beyond his Recalling. His Lectures, p. 149.

Read



The P R E F A C E.

Read the Scriptures diligently, *(saith Dr. Taylor)* and with an humble Spirit, and in it observe what is plain, and believe, and live accordingly: Trouble not your self with what is difficult, from that your Duty is not described.

Apocrypha, bound up in some Bibles, containing 173 Chapter's, supposed to be Pen'd by Man's Spirit, believe as far as it agrees with Canonical Scripture, which is indited by the Holy Ghost. Next to those Canonical Scriptures, I commend to the Young Man our Church Catechism, where thy Duty to God and Man is sum'd up; the want of Peoples considering it as they ought, has caused many thousands to go into the By paths of Error and Schism.

Therefore, sober Young Man, remember that thou doest not at any Time break thy Baptismal Vow, of Renouncing the Devil and all his Works; and every Day say over the two Questions in our Catechism, of thy Duty towards God and thy Neighbour; and if thy Parents and others are not Pious Examples, pray to God for them, and tell them, that while they continue in any one wilful Sin, God is angry with them; and if they do not repent while they are in Health, and follow after Righteousness till Death, they are miserable for ever: But thou, O dear Young Man, pray that thou be of the Spirit of Pious Bishop Beveridge, who saith,

Wheresoever I am, or whatsoever I am doing, I will still consider the Eye of the Great God as directly intent upon me, Viewing and Observing all my Thoughts, Words, and Actions, and writing them down in the Book of his Remembrance; and that all these, unless they be wash'd out with the Tears of unfeigned Repentance, cross'd with the Blood of my Crucify'd Saviour, must still remain

ON

The P R E F A C E.

on Record, and be brought in Judgment against me at the great Day. *Keep this always in Mind.*

*Then chuse not Sin, touch not forbidden Things;
Nor taste those Joys which endless Sorrow brings;
For Sin will surely in the end procure
Those Pains which will beyond all Time endure.*

Among all the things which we can do for the Glory of God, and for the good of the Church (*said one*) one of the most Important is, *To Educate Youth in the Knowledge and Love of Religion*: 'Tis the most effectual Method that Men can take for stopping the Course of that *General Corruption* now so manifest among Christians; it is also what all wise and zealous Men do own must be done,

To conclude, I have enlarged in the Arithmetical Part, and Measuring, and on Gunter's Line; with many other Additions both for the good of my Readers Soul and Body.

*I am a Well-Wisher of the
General Good of all;*

William Mather.

The *Arithmetical* Examples of the former Edition of this Book, having been according to the Obsolete Method call'd Scratch'd-Division, they are now entirely altered, to the more Modern, Plain, and Useful Method, in which especially through the want of Care in Printing, a multitude of Errors (creating unsurmountable Difficulties to the learner) had crept in, they are here corrected; so that I may venture to *affirm*, that this little useful Book is now rendred more useful than it was in any former Editions.

The Corrector.

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THE



THE

Young Man's Companion.

HE that hath little Understanding, and feareth
GOD, is better than he that is exceeding Wise,
 and transgresseth the Law of the most High.

The Lord who made the Ear of Man.

He needs must hear of Right:

He made the Eye, all things must then

Be plain in his clear Sight:

The Lord doth know the Thoughts of Man;

His Heart he sees full plain:

The Lord most high, Man's Thoughts doth scan,

And sees they are but vain.

But, Oh! That Man is safe and sure,

Whom thou dost keep in Awe;

And that his Life may be more pure,

Dost guide him in thy Law:

For he shall live in Peace and Rest,

He fears not at his Death;

Love fills his Heart, and Hope his Breast,

With Joy he yields his Breath.

The fear of the Lord is the first to be accepted of
 him; and true Wisdom obtaineth his Love.

ADVERTISEMENT TO Young People.

I H^{ave} in this Thirteenth Edition, left out the several Alphabets of Letters, as thinking them unnecessary here, believing that all such who buy this Book, can Read; for (blessed be God) most People, now a-days, bring up their Children both to Read and Write, yet there is scarce One in Twenty that writes tolerable English; and this Defect is to be found amongst Persons of either Sex, as well those who are descended from wealthy Parents, and are of good Parts, as others of meaner Birth; who, notwithstanding many of them can write good Sense, and a fair Hand, yet oftentimes commit such Errors in Spelling, as exposes them to the Laughter and Derision of others, and so makes them ashamed to express their Minds in Writing, to the great Prejudice of their Affairs.

To Accommodate such, I have, from my own long Observations, collected and digested the following Rules and Directions, which, I doubt not, will be of great Use to all Pious Young Men and Women, who seek after Knowledge in the fear of the Lord: For if these Rules are carefully observed, they are sufficient to make you a good Master of the English Tongue.

D I.



DIRECTIONS

FOR

Spelling, Reading, and Writing

True *ENGLISH*.

Of Letters great and small, and when each are to be Used; Their Division into Vowels and Consonants: Of Diphthongs, what they are, how many, and how pronounced and written.

THERE is no Building without a Foundation. Therefore whoever would obtain the Accomplishment of Writing all sorts of *English Words* properly, and scholar-like, must, in the first place, endeavour to understand *Letters*, whereof all Words are composed,

These are in Number *Twenty-four*, and are to be considered in their *Form*, their *Nature*, and their *Force*.

I. As to their *Form*, Letters are either *Small*, as *a, b, c, &c.* or *Great* (which are called *Capitals*) as *A, B, C, &c.* And to know when rightly to use the one, and when the other, is the first step towards good *Clerkship*; wherein this Rule will guide you.

B 2

You

You must never use Great Letters in the *middle*, or *end* of any Word (unless the whole be wrought so, as LORD) but always in the *beginning*: And *there* too, only in these six Cases following, *viz.* 1. At the beginning of any Writing. 2. After every Period, or Full Point, when a new Sentence commences. 3. At the beginning of every Line in Poetry, and every Verse in the Bible. 4. Proper Names of all sorts, whether of Persons, Places, or Things. and the like, must begin with them. 5. So also the Names and Terms of Arts, Dignities, Offices, or any other Word of special Note in a Sentence; or to which we pay a particular Deference; As *God, King, your Lordship, &c.* And lastly, The Personal Pronoun *I*, must always be a Capital. The small Letters are every where else to be used.

It would therefore be highly ridiculous to write thus:

maſter george franklin the coroner of kent, with dorothy his wife, came laſt mARch to loNDOn, where I met him.

When it ſhould be,

Maſter George Franklin, the Coroner of Kent, with Dorothy his Wife, came laſt March to London, where I met him.

Note, There are two Forms of *S* uſed in writing; the long *ſ*, which is always put in the beginning, or middle of Words, and the ſhort *s*, which only comes in the end, or after another *ſ*; As *ſubſtantial, Aſſeſments*; not *ſubſtantial, Aſſeſments*.

Note

Note also, That *i* and *u*, for Reasons which we shall mention by and by, are oft-times written thus, *j*, *v*.

2. As to the Nature of Letters, they are either *Vowels* or *Consonants*.

The *Vowels* are commonly counted but five, viz: *a*, *e*, *i*, *o*, *u*, but we must add to them *y*, when it cometh after a *Consonant*.

All the rest are *Consonants*, and so are *j*, *u*, and *y*, when any of them come before a *Vowel*.

They are called *Vowels*, (which is as much as to say *Self-Sounders*) because each of them gives a perfect sound of it self; whereas the *Consonants* (that is *Sounders together with*) cannot be pronounced without one of the *Vowels*: As, to say *B*, you must make use of the sound *e* after it; and in *q*, of *u*, and in *m*, or *f*, of *e* before them, &c.

When two *Vowels* come together, and yet are not parted in Pronunciation, but the sound of them both united, it is called a *DIPHTHONG* (that being originally a Greek Word, signifying a *Double Sound*) As, *heard*, *sweet*, *People*; not *be-ard*, *swe ce*, *Pe o ple*.

Of these *Diphthongs* we have *Twelve* that are chiefly to be observ'd; that is to say, *ai*, *ei*, *oi*, *au*, *eu*, *ei*, *ee*, *oo*, *ea*, *eo*, *oa*, and *ie*: As in these Words, *Faith*, *La-ther*, *Foin*, *Aul*, *Eunuch*, *Stout*, *Seed*, *Food*, *Wealth*, *People*, *Boat*, *Friend*.

Where you may observe, that in the *first six*, both *Vowels* are fully sounded; but in the *last*, one of the *Vowels* is but little, or scarce at all heard; and therefore by some they are called *improper Diphthongs*.

Note, that *ay*, *ey*, *oy*, are also *DIPHTHONGS*.

and have the same sound with *ai*, *ei* *oe*; only these are used in the beginning or middle of Words, those always in the end; so we write, *air*, *fair*, *Heifer*, *either*, *Cloister*; not *ayr*, *fair*, *eyther*, *Cloyster*; but *May*, *Joy*, *Whey*, &c. not *Mai*, *Joy*, *Whei*.

Aw, *ew*, *ow*, are likewise *Diphthongs*. and have the same sound with *cu*, *eu*, and *ou*, save that these are used chiefly in the end of Words. And *ow* is sounded flat and soft; as *A Bow* to *Mow*; whereas *ou* is more sharp and shrill, as *Thou*, *you*, *adieu*. Yet contrary to this Rule, we do commonly write these Words following of a sharp sound, with *ow*, viz *To Bow*, *A Cow*, *Flower*, *Fowl* *How*, *Pow*, *Sow*, *Vowel*. Again, on the other side, we write some with *ou*, and yet pronounce them as flat as the sound of *ow*, in *know*, viz *Four*, *Soul*, *drought*. But certainly it is an Inconveniency, that Words under one and the same manner of Writing, should have a double and different Sound: To remedy which, some preferring Reason before corrupt Custom, use *ow* wherever the Sound is soft and flat, either in the beginning middle, or end of a Word; but *ou* where it is sharp: And write thus:

I want Strength to bow this Bow.

Do you mow the Grass and I will lay it up in the Mow.

The Pease I sow to Fat the Sou, not the Cou. How can I make up the Hop-Garden without a How? Others distinguish them, by adding e, As Jane is an ill-bred Sow, and cannot sowe.

But I take the other writing to be more natural.

Æ and *œ* (which have peculiar Characters, viz. *Æ* and *œ*) are not properly *English Diphthongs*,

thongs, but *Latin*, and therefore we in *English* do for them, commonly both write and sound the single *e*, As *Equity* *Female*, *Phoenix* *Tragedy*, from *Æquita*, *Fœminia*, *Phœnix*, *Tragœdia*. Yet, in borrowed Words, of rare use, and especially in proper Names, as *Æneas*. *Ætna*, *œconomy*, &c. the best Authors use the *Diphthongs*, to denote their Original.

Question When two Vowels come together, is it always a *Diphthong*?

Answer No, not always; but generally where any of the before-mentioned Pairs of Vowels happen together, they make a *Diphthong*, and must be sounded jointly, except in these Words following:

ea are parted in *Beatitude* *Create*, *Creator*, *Creation*, *Genealogy* *Ocean*, *Pageant*, *Real*, *Sergeant*. *Theatre*, *Vengeance*.

And *ei* in *Atheist*, *Atheism* *Deity*, *Polytheism*.

Eo is a *Diphthong* in *Dungeon*, *Hideous*, *Meteor*, *Pigeon*, *Sutcheon*, *Surgeon* *Theory*

Oa are several in *Coaction*, *Coadjutor*.

Ie is parted in *Audience*, *Brier*, *Buried*, *Busied*, *Clothier*, *Dier*, *Diet* *Dried*, *Epied*, *Gaiety*, *Liety*, *Moiety*, *Quiet*, *Studied*.

Ui are parted in *Ambiguity*, *Fruition* *Genuine*, *Gratuity*, *Puissant*, *Perspicuity*.

Ee in *Pre-eminence*, *Pre-emption*, *Re enter*, *Redijy*.

Oi in *Doing* and *Going*.

Likewise most Vowels that come together like *Diphthongs*, are parted in all proper Names of Persons or Places mentioned in the Bible; As *La-ish*, *Alphe-us*, *Cesare-a*, *Gilbo-ab*, *Abino-am*, &c. save only *Cain*, *Cainan*, *Theudas*, *Ruben*.

and *Beelzebub*, where the *Vowels* are sounded together as *Diphthongs*.

In all such Words where two *Vowels* come together, they are to be parted, that they may not seem to make a *Diphthong*. If you would write exactly, you ought to make this Mark .. over the latter *Vowel*, which is called *Dierisis*. or a *Note of Partition*, thus *Laiety Copernaium, Gil-ä l, &c.* Tho' this, thro' the Negligence of Printers and Writers, is often omitted.

There are some few Words derived from *French*, where three *Vowels* are joyn'd in one sound; as *Lieutenant, Beauty, &c.* which may be called *Triphthongs*.

Note, That altho' we have but 24 Letters, and six of them *Vowels*, yet we have 21 *Consonants*; For *I, U, and Y*, when they are set before any *Vowels* in the same *Syllable*, do become *Consonants*. And in such a Case, the two former must be written with a different Character from that which they have when they are *Vowels*, viz. *j.* and *v.* (which by Learned Men and Printers, are called *Jod* and *Vo*) As *jangle, injoin, vertue, vulgar*; not *iangle, injcyn, uertue, uulgar*, which would be uncouth and absurd; therefore this is to be carefully observed. And in such a case I know no need of a Tittle over *j*, which yet you must always make over *i*.

And tho' *y* keep one and the same Form, yet whereas, when 'tis a *Consonant*, it differs much from *j* *Consonant*, And may be perceived by these Examples——*jet, yet, jew, yew, joke, yoke.*

Y being Originally a *Greek Vowel*, is rightly used, i. In most Words derived from that Tongue; As *Chrystal, Presbyter, Martyr, Apocrypha, Apocalyps.*

calyps. 2. *English* Words that end with the sound of *i*. may be indifferently writ with a *y*, or *ie*; *Safety* or *Safetie*, *Bounty* or *Bountie*. but you must never end them with an *i* only, as *Bounti*, *Safeti*, for we have no *English* words so terminated, 3. When two *ii*'s come together, *y* is put in the place of the former, because it looks handsomer; as *Burying*, *Marrying*, (not *Burieing*, *Marryieing* nor *Burriing*, *Marring*.) and sometimes when *e* followeth, as *Marryeth*, *Denyeth*.

Of Syllables, and Rules, how to divide them.

IT is very necessary both for *True Writing* and *Reading*, to understand the Nature and proper Division of Syllables.

A *Syllable* is either a *Vowel*, or *Diphthong*, sounding by its self, or joyned with one or more *Consonants* in one sound, and pronounced at one *Breath*.

For since each of the five *Vowels* make a perfect Sound, any of them may be, and often is a *Syllable*, as *a-bate*, *e-ve-ry*, *i-vie*, *o-pin-ion*, *us-ur-ie*. So most of the *Diphthongs*, as *au-ger*, *Eus-tace*, *ow-ner*, *ai-der*, *oi-ster*, *ea-ten*, *ou-ten*.

Many *Consonants* with one *Vowel* may make but one *Syllable*; as *Length*, *Strength*, *Knights*.

1. Rule, If two *Vowels* come together in a *Word*, and yet are no *Diphthong*, but both fully sounded, they must be divided, as in *Li-et*, *Am-tual*, *Tri-umph*, *Co-eternal*, *Co-equal*.

2. Rule, If the same *Consonant* be doubled in the middle of a *Word*, they must be divided; as

in *Ab-ba*, *Ac-cord*, *Adder*, *Af-fect*, *Ag-gra-rate* and the like.

3. Rule, A *Consonant* coming between two *Vowels*, must be joined to the latter; as *E-qui-tie*, *De-li-ver*; not *Eq-uitie*, *Del-iver*.

4. Rule, Two *Consonants* between two *Vowels* do separate themselves, one to the former, the other to the latter *Syllable*; as *Stran-ger*, *For-tune*.

But to these general Rules, there are these *Exceptions* following.

First, *x*, in any Word, must be joined to the *Vowel* before it, contrary to the third Rule; as *Ox-en*, *Ex-ercise*. The Reason is, because 'tis a double *Consonant* and has the sound of *c* and *s*, which cannot begin a *Syllable*. For,

Secondly, Any two or three *Consonants*, which may be joined to begin any *English* Word, are not to be separated in the middle of any Word; so you must not spell *ag-ree*, *bes-tow*, *ref-frain*, &c. but *agree*, *be-stow*, *refrain*, because *gr*, *st*, and *fr* do begin several *English* Words, as in the following Example.

The two *Consonants* that may begin Words, are *Thirty* in Number, &c,

As in *Bl. Blunt. Br. Broad. Ch. Church. Cl. Cloak. Cr. Croud. Dr. Drink. Dw. Dwell. Fl. Flame. Fr. Frank. Gl. Glove. Gn. Gnow. Gr. Grave. Kn. Know. Pl. Play. Pr. Pray. Sc. Scour. Sh. Shut. Sk. Skin. Sp. Sport. St. Stop. Sl. Slow. Sm. Smite. Sn. Snow. Sq. Squib. Sw. Sway. Th. Thunder. Tr. Treasure. Tw. Two. Wh. Whistle. Wr. Wrest.*

The three *Consonants* that may begin a Word, are these Nine, *viz.* Sch. *School.* Scr. *Scrape.* Shr. *Shrink.* Skr. *skrew.* Spl. *Split.* Spr. *Spring.* Str. *Stroke.* Thr. *Throw.* Thw. *Thwart.*

All these must be spelt together, and not separated, except in compounding Words; and there each simple Word must retain its own Letters. As

Mis-take	} not {	Mi-stake	} So Trans-pose, not	
Mis-like		Mi-slike		Tran-spose, because 'tis
Mis-lead		Mi-slead		Compounded of <i>trans</i> .
Dis-lodg		Di-slodg		
Dis-clofe		Di-sclofe		So Cramp-ring, not
Dis-mis		Di-smis		Cram-pring.

So likewise all Words that remain intire, when their Prepositions and Terminations, (which of themselves signify nothing) are taken away from them, must be spelt by themselves, as *stand-ing*, not *stand-ing*; *reclaim-ed*, not *reclai-med*; *un-ex-pec-ted*, not *u-nex-pec ted*.

Thirdly, Any *Consonant* joined with *l*, or *r*, before *e*, in the end of a Word, is inseparable; as in the very Word *in-se-pa-ra-ble*, *tri-ple*, *Mi tre*.

Fourthly, This Particle *es*, at the end of Words (which are commonly either *Nouns* of the *Plural* Number, or *Verbs* of the *Third Person*) is sometimes swallowed up of the foregoing *Syllable*, and serves only to make it long; but sometimes it makes a *Syllable* of it self.

Note, A *Noun* is the Name of a Thing. A *Verb* is a Word that betokeneth to do, or to suffer, or to be. The *singular* Number speaks but of one, the *plural* of more. The *first Person* is when a Man speaks of himself, as, *I come*. The *second* when one speaks to another, as, *Thou comest*. The *third*, as, *He comes*.

In these Words following it closes with the former Syllable.

	Nouns.	Verbs.
An Hide	<i>Hides,</i>	he <i>hides</i> himself.
A Drake,	<i>Drakes,</i>	he <i>bakes</i> Bread.
A Pile,	<i>Biles,</i>	he <i>piles</i> up Wood.
A Name,	<i>Nemes,</i>	he <i>names</i> me.
A Bone,	<i>Bones,</i>	he <i>moans</i> and weeps.
A Rope,	<i>Ropes,</i>	he <i>copies</i> with.
A Wire,	<i>Wires,</i>	he <i>tires</i> all Men.
A Brute,	<i>Brutes,</i>	he <i>suits</i> well with it.
A Way,	<i>Waies,</i>	he <i>staies</i> for me.
An Eye,	<i>Eies,</i>	he <i>lies</i> in wait.
A Virtue	<i>Virtues,</i>	he <i>argues</i> well.

But in these it may be a Syllable by it self.

A Grace,	<i>Graces,</i>	he <i>places</i> all things.
A Church,	<i>Churches,</i>	he <i>lurches</i> Conies.
A Cage,	<i>Cages,</i>	he <i>wages</i> war.
An Hedge,	<i>Hedges,</i>	he <i>judges</i> none.
A Rose,	<i>Roses,</i>	he <i>poses</i> Scholars.
A Nose,	<i>Noses,</i>	
A Fish,	<i>Fishes,</i>	he <i>refreshes</i> himself.
A Witness,	<i>Witnesses,</i>	he <i>oppresses</i> the Poor.
A Box	<i>Boxes,</i>	he <i>foxes</i> his Guests.
Affize,	<i>Affizes,</i>	he <i>freezes</i> for Cold.

Note, That these *Verbs*, are, by the Curious, written with an *Apostrophus*, as *Refreshes*, for *Refresheth*, or doth *Refresh*, especially when the *Verb* and the *Noun* are both alike, to distinguish them, as, he *hide's* himself amongst the *Hides*. For otherwise it seems needless to write an *Apostrophus* where *s* is set

set for *th*, as *Love's* for *he Loveth*; there being nothing omitted, only the *th* (which in sound is but one Letter) is changed into *s*.

Es is also founded in these Words, *Aloes*, *Jubiles*, *Epitomes*; and in all proper Names, as *Moses*, *Tha-res*, *Maccha-bes*, except *James*.

If these Rules for dividing of *Syllables* seem too tedious and intricate, a little Practice and Observation will render them Easy and Familiar: In the mean time take this for a general Direction. That *Syllables* are so to be divided in Spelling as they are in Speaking. And be sure if you cannot write a whole Word at the end of a Line, break it off at the end of a Syllable; as for Example, *Communi-* in one Line, and *cation* in the next, not *Communic-* in one Line, and *ation* in the next; so if I should write *discharge* at the end of a Line thus, *dischar-*ge, it would be ridiculous, for if I could not bring it in all, I ought to have left off after *dis*, and begun the next Line with the other Syllable.

Of Letters that ought to be Written, and yet are not Sounded, and the Reasons thereof; particularly of e at the end of a Word, when it must, and when it should not be Written.

IN the Words *Isaac*, *Caiaphas*, *Canaanite*, *Sabaoth*, and *Pharaoh*, one of the *a*'s is not pronounced, they being originally *Hebrew*.

And *b* after *m*, in Words of one Syllable, are not sounded, as in *Lamb*, *Climb*, *Comb*, *Dumb*,
Tomb,

Tomb, Womb, Thumb, And before t, as Debt, Debtor, Doubt.

And *c* is not founded in *Indict*, *Indictment*, *Indicted*. Nor *d* in *Wednesday*. Nor *e* in the middle of the Word *George*. And *e* at the end of a Word is very seldom founded, except in those of one Syllable, as *Me, be, the, he, ye, we*, where it has the sound of a *Diphthong*, or *ee*. And in Words derived from the *Hebrew* and *Greek*, as *Jesse, Jubile, Mamre, Ninive, Cadraoc, Cloe, Daphne, Gethsamene, Penelope, Epitome, Catastrophe, &c.*

In other Words where *e* is put at the end, and the Sound not heard, yet it is not superfluous, nor to be omitted in Writing, for these following Reasons:

1. It serves to draw the Syllable long, which without must be sounded short, and so several Words of different Sense would be confounded, which by this means are plainly distinguished, as appears by these Examples.

To Curse and Ban is Childrens Bane.

A Hedger's Bill is no fit Instrument wherewith to lance a Bile.

You may Bite one Bit of my Apple.

I did Bathe myself in a Bath.

I can break this Japan Cane.

A Scolding Dame deserves to be duckt in the Mill-Dam.

Meat that is fecht far is Ladies fare.

A piece of Fir is good for the Fire.

I am out of Hope to have one Hop this Year.

They say a Cat has nine Lives, but to be sure she will Live as long as she can see me alive.

*Bad usage hath made many a Man Mad.
Let the Man cut my Horse's Mane.
'Tis two Miles to the next Mill.
I will quit and discharge you quite of that Debt.
To Rid the way let's Ride the faster.
The Poor will Scrape up every Scrap.
I cannot Stare all Night at a Star.
For a new Tune I got a Tun of Wine.
Oft-times one Twin doth twine about the other.
For a pint of Wine you do not Win.
Are you not asham'd to Wine for a Scratch with a
Whin, or a Furz Bush?
I will Write to my Lawyer for a Writ.*

Nay, this *e final* does not only draw out the *Syllable* after one *Consonant*, but sometimes Effects the same after two; as in *Finde, Minde, Winde, Rinde, Binde, Waste, Taste, Tithe, Childe*, which therefore ought to be so written.

Yet these following Words seem priviledg'd by Custom, to be pronounc'd long, without an *e* in the end, viz. *Bold, cold, hast, post, told, scold, bolt, Colt, dolt, most, Ghost, both, Ruth*; but if any should add an *e* to them, tho' it might seem *unfashionable*, I could not blame him, because 'tis but reasonable: But in other Words 'tis a self-contradiction to add *e* in the end, which make a *Syllable* long, after I have made it short with two *Consonants*; and therefore I must write, *pass, turn, black*; not *passé, turne, blacke*.

2. Another Reason for writing *e final* when not founded, is to soften the sound of these two Letters, *c* and *g*, as in *Ace, place, lice, truce, Justice*; whereas otherwise, *c* sounds strong, like *k*, as in *ac-cept, ac-count*, and the like of *g*, as in *stag*, and
stage,

stage, hug and huge, swing and swinge, string and fringe.

And here Note, That if *g* be hard with a long Vowel, *ue* is added, and always pronounc'd in the same Syllable, as *Plague, Rogue, Prague, the Hague, Intrigue, Catalogue, Dialogue, Prologue, Epilogue, Synagogue, Collegue, Prorogue, League, Tongue.* Beware you do not read such Words, *Catolc-gue, Intrigue*, nor write them *Catalog, Prolog, &c.*

But if *g* be short, with a short Vowel, then it must have *d* before it, as in *badg, ledg, bridg, lodg, judg*, which Words are thereby differenced both in Sound and Writing, from *bag, leg, log, jug.*

3. Another use of *e* at the end of Words, is for Ornament rather than Necessity; for so we add it to Words ending in *i, o, or u*, as *Charitie, Vertue, Foe, Toe*, where it does not vary the Sound, except after *i*, and there it makes the Syllable sound more gently, like the Diphthong *ee*, as *Charitie* is pronounc'd, as if it were written *Charitee*. Likewise in Nouns and Verbs singular, 'tis generally added after the long *s*, joined with another Consonant; as *Horse, Curse, to Nurse, Disburse*: for we do not use to write *Horf, Disburs, Curs*, much less *Hors, Disburs, Nurs*; and I take the Reason to be partly because those Words are thereby the more readily varied; As *Nurse, Nurses; Curse, Curse-eth; Disburs, Disburses*. And especially because the short *s* after *r*, without an *e*, makes a soft Sound, as *Wars*

If to *e* at the end of a Word, a long Vowel be added, the *e* is lost, and must be omitted in Writing as *love, loving, not loveing; doe, doing, not doeing; except these ending ge, and ce, before*
able,

able, as *change*, *change-able*; *peace*, *peace-able*; not *chan-ga-ble*, *pea-ca-ble*.

It is needless to use *e* at the end of a Syllable already made long by a Diphthong, and therefore you must write, *gnaw*, *fear*, *weight*; not *gnawe*, *feare*, *weighte*; except when it is to give a right sound to soft *s*, soft *th*, and to these endings, *ce*, *ge*, *ve*; as *please*, *scotche*, *peace*, *siege*, *leave*.

Words of one short Syllable, ending with a Consonant, are to be written with a single Consonant; and without any *e* after; as *sin*, *son*, *sun* *at*, *put*, *war*; not *sinne*, *sonne*, *sunne*, &c. tho' yet such Words are writ in our old Bibles, and so too in the Plural, *sinnes*, *sonnes*, &c. But this is reform'd in our later Impressions.

6. *G* is not sounded, tho' written, in *Sign*, and its Compositions, *Assign*, *Resign*, *Design*, *Consign*; nor in *Seignior*, *Seraglio*, *Reign*, *Sovereign*, *Arraign*, *Phlegm*, and the like.

7. *H* has Place, but no Voice, in *Authority*, *Christ*, *Christopher*, *Chrystal*, *Chrysostom*, *Chronicle*, *Chronology*, *Chronography*, *Ghost*, *John*, *Rhine*, *Rhenish*, *Rhetoric*, *Schedule*, *Schism*, and *Thomas*.

8. *I* is not much, if at all, sounded in these Words, *Adieu*, *Juice*, *Pursuit*, *Bruit*, *Fruit*, *Suit*, *Bruise*; yet in the five last, it draws the Syllable long.

9. *K* is not heard in *Back*, *Deck*, *Sick*, *Reck*, *Suck*, &c. for the Latiners made the same sound with *c* alone, as *Lac*, *Nec*, *Dic*, *Hec*, *Euc*; and our best Authors do now write such Words, when deduced from the Greek or Latine, in *cus*, with *c* only, as *Public*, *Physic*, *Catholic*. But if the Word come from the Latin, ending in *quus*, you must

must write *que*, as *oblique* of *obliquus*, *Relique* of *Reliquus*, *antique* of *antiquus*; and *fabrique* and *traffique* from the French,

10. *N* is not pronounced in *Solemn*, *Hymn*, *Autumn*, *Column*, *Condemn* &c. yet ought to be written, because it shews whence they are deduced.

11. *O* is not sounded in *People*, *Yeoman*, *Jeopardy*, *Fooffee*, nor in the end of *Righteous*, *Glorious*, *Fri-volous*, and the like,

12. Nor *S* in the Words *Isle*, *Viscount*, *Island*.

13. *V* is written many times after *g*, when it has no sound; as *Guide*, *Guardian* &c and always after *q*; as in *Queen*, *Quick*, and the like. In the Words *Buy*, *Built*, *Conduit*, *Circuit*, 'tis also silent; and so also in *Labour*, *Favour*, *Honour*, and other Words of like ending.

I have been the longer upon the Rule, that my Young Learner may have full and plain Instruction, in relation to the true Knowledge of the Sound of those letters which ought to be written; and particularly the Letter *e*, which, tho' the second *Vowel*, affords more variety of Instruction, than any of the other: So that by following carefully the Observations I have made, the Learner will know when this significant Letter must, or must not be written at the end of a Word.

Of Letters sounded alike, and how to avoid Mistakes in writing one for the other.

C And *K*, they have great Affinity in Sound, but to distinguish when you ought to use one, and where the other; Observe,

That *C* hath the force of *K* only before *a*, *o*, *co*.
z,

u, and these two Consonants, *l* and *v*. And therefore you must write *Care*, *Cow*, *Cooper*, *Cupboard*, *Clergy*, *Crown*; not *Kare*, *Kow*, *Kooper*, *Kupboard*, *Klergy*, *Krown*. But before *e* and *i*; *C* has commonly the sound of *S*; as *Cesar*, *Cicero*, not *Kesar*, *Kikero*. And the use of *K* is only before *e*, *i*, and *n*; as *Key*, *Keep*, *Kill*, *Knight*; not *Cey*, *Ccep*, *Cill*, *Cnight*. And for this Reason too, we ought to write *Clender*, *Catherine*, *Catholic*; not *Kelender*, *Katherine*, *Katholic*; altho' these two last come of Greek Words, written with *Kappa*.

In short Syllables you must write *e* before *k*, if a Vowel goes before, as *Bucks*, *Thick*, *Sick*, and the Reason I to'd you a little before, viz. Because *k* is never doubled; but if a Consonant come before *k*, there is then no need of *c*, as *Banks*, *Barks*; not *Bancks*, *Barcks*.

C is to be written after *x*, in some Words derived from the Latin. as *Exceed*, *Excel*, *Excessive*; not *Exeed*, *Exel*.

Ch in most English Words, or such as are derived from the French and Latin, sounds *chee*, as in *Approach*, and *Ache*. *Charity*; and if the Syllable be pronounced short, you must write *t* before the *ch*, as *Catch*, *Wretch*, *Scutchon*. But in the following Words, borrowed from Hebrew and Greek, *ch* has the sound of *k*; as in *Character*, *Malachi*, *Chederlaomer*, *Antich*, *Eucharist*, *Anchor*, *Chios*, *Chorazin*, *Chushite*, *Achan*, *Malchus*, *Melchizedec*, *Baruck*: And must be read as if they were wrote *Karakter*, *Kederlaomer*, *Akan*, *Antioch*, *Baruk*. &c.

And the same in all other like Words, except these, *Rachel* (not *Rakel*) *Cherubim*, *Tychicus* (not

(not *Tykicus*) *Arch-bishop*, *Arch-duke*; yet these two Words *Architect* and *Archangel*, are pronounced as if they were spelt *Arkitect*, *Arkangel*, and the Reason I conceive to be, because in the two last, a Vowel, but in the former, a Consonant follows.

F and *ph* will not be mistaken, if it be remembered, that the *first* is used in all *English* Words, as *face*, *find*, &c. The latter in these few following, derived of the *Greek* and *Hebrew*.

Phanatick

Phantasy

(for which yet we commonly use *Fancy*)

Pharoah

Pharisee

Pharez

Phoenix

Philtre

Philistines

Philosophy.

Phlebotomy

Phlegm

Phrensy

Phrenetic

Physic

Physician

Physiology

Triumph, *not* Triumf.

Beware therefore of writing these Words with an *f*, for if it were equally as absurd to see *Filosofy*, *Fisitian*, for *Phylosophy*, *Physician*, as it would be to behold *Phastning*, *Phind*; *Phigure*, instead of *fastning*, *find*, *figure*.

Gh in the end of some few Words where *au* or *ou* goes before, has the Sound of *f*, as *Laugh*, *Cough*, *Tough*, *Enough*, wherein also the *u* loses its Sound; yet have a care you do not make your Readers sport by writing *Laff*, *Coff*, *Tuff*, and *Enuff*; because Custom has not yet allowed thereof; yet *Cuff*, *Snuff*, *Huff*, *Ruff*, &c. must be so written.

G before *e* and *i* is sounded soft like *j* Consonant

nant, as *Agent*, *George*, *Gentle*, *Gem*, *Generosity*, *Generation*, *Gender*; *Genealogy*, *Geometry*, *Gesture*, *Giant*, *Ginger*, *Clergy*, *Gipsy*, *Imagine*, Do not play the Fool, and write *Ajant*, *Feneration*, *Clerjy*, *Finger*, &c. Yet we must write *Ajax*, *January*, *Fanizaries*, *jealous*, *jeer*, *John*, *joi*, not *gealous*, *Gohn*, *Geer*.

C has many times the Sound of *s*; to distinguish them, take these Rules:

1. You must write *c* before *e* or *i*, in *Accept*, *Special*, *Circumcision*, *Exceed*, being Words derived from the Latin, wherein *c* must be retained.

2. Words that end with the sound of *ace*, *ece*, *ice*, *uce*, are generally wrote with *c*; as *Mace*, *piece*, *Lice*, *induce*. So also Words in *ance*, *ence*, *ince*, *once*, *unce*, *ancy*, or *ency*; as *Countenance*, *Prudence*, *Quince*, *Sconce*, *Dunce*, *Lieutenancy*, *Continuency*; not *Countenans*, *Continensy*, or the like. Except out of this Rule these Words:

Abase	To Advise	To Advertise
Cafe	Hypoerisy	Mittius
Base	Paradise	Rinse
Chafe	Promise	Recompense
Dispense	Frankincense	Sins
Enhance	Incense	Pens
Expence		Sense.

3. Words ending in the Sound of *ose*, *use*, (long) must be wrote with *s*, as *Hose*, *Nose*, *Abuse*, *Chuse*.

4. C sounds like a soft *s*, in these Words, *Sacrifice*, *Suffice*, and in *Glocester*, and *Worcester*, the *ce* is not at all founded in common Speech, yet must not be left out in Writing.

5. As

5. As for the beginning of Words, these following having the sound of *s*, must yet be written with a *c*.

Cease	Censor	Circle
Cielings	Centre	Circuit
Celebrate	Centurion	Citron
Celerity	Ceremony	Cite, <i>and its Com-</i>
Celestial	Certain	<i>pounds.</i>
Cell	Certify	Excite, Recite, &c.
Cellar	Cerufs	City
Cement	Cistern	Civil
Cenfer	Cider	Civet
Censure	Cinque	Cymbal
Circumstance	Cinamon	Cyprefs
Circumference	Cypher	

All other Words (as near as I can remember) of that Sound, must begin with *s*, as *Sack*, *Senate*, *Sob*, *Sum*, &c.

6. There are seven Words (I can think of no more at present) beginning with *Sce*, *Sci*, *Sche*, and *Schi*, which ought to be taken Notice of, to prevent their being written wrong (as they seem to sound) with an *s* only; And they are *Scene*, *Scepter*, *Schedule*, *Schism*, *Science*, *Sciatica*, *Scythians*; which you must read as if they were wrote, *Sene*, *Septer*, *Sedul*; yet *Scheme* and *Skeleton* are always founded as *Skeme*, *Skeliton*, so *Scarcity*, *Schollar*, *Scrivener*, &c.

Ti, before a Vowel, generally sounds like *fi*, as *Patience*, *Dictionary*, except when *s* goes before, as *Fustian*, *Combustian*. And except the Word *tied*, and whenever a Word ending in *ty*, hath another Syllable

Syllable added to it that begins with a Vowel, as from *Plenty*, *Plentecus*; *Mighty*, *Mightier*.

Therefore ſince the ſame Sound is frequently to be expreſſed by *ti*, and ſometimes by *ſi*, (eſpecially in the ends of Words) it will be worth while to underſtand when, and where, properly to uſe each, and the Reaſon thereof. For your Guidance herein, be pleaſed to obſerve theſe Directions.

1. Generally you muſt write *ti*, not *ſi*, in Words that end with the ſound of *ation*, *ition*, *aſſion* *iſſion*; except where there is a double *ſ*, as *Paſſion*, or an *ſh*, as *Cuſhion*, *Faſhion*; not *Cution*, *Fation*. But more particularly,

2. You are to know that the Reaſon of the different writing of ſuch like ſounding Words is this, they are all originally Latin Verbals derived from the firſt Supine, which if it end in *tum*, then you write *ti*; if in *ſum*, then *ſi*. However becauſe all People are not acquainted with Supines. I ſhall here ſet down thoſe Words of both ſorts that moſt frequently occur.

Theſe are to be written with a t. Theſe with an ſ.

Action

Ambition

Apparition

Attention

Benediction

Compunction

Concoction

Contention

Conſtitution

Declamation

Admiſſion

Alluſion

Apprehenſion

Aſcenſion

Aſperſion

Averſion

Circumciſion

Commiſſion

Concluſion

Confuſion

Diſſention

Dissention
 Distribution
 Exclamation
 Faction, Fruition
 Injunction
 Motion
 Munition
 Nation, Notion
 Oblation
 Obligation
 Perdition
 Perturbation
 Relation, Sanction
 Toleration
 Valediction
 Vocation

Dismission
 Descension
 Diversion
 Effusion
 Evasion
 Invasion
 Occasion
 Permission
 Submission
 Vision

*And the like of any others
where there is the same
Reason.*

*To which you may add
Grasier, Brasier, Visier.*

*A Table of Words, the same, or nearly alike
in Sound, but different in Signification.*

A B E L, Cain's Brother.	<i>Awl</i> , to bore Holes.
<i>A Bell</i> , of Metal.	<i>Ale-hoof</i> , an Herb.
<i>Able</i> , powerful.	<i>Aloof</i> , at a Distance.
<i>Accidence</i> , a Book.	<i>Allay</i> , to give Ease.
<i>Accidents</i> , Chances.	<i>Alloy</i> , of Metal.
<i>Account</i> , Esteem.	<i>Alley</i> , a narrow Passage.
<i>Accompt</i> , a Reckoning.	<i>Ally</i> , Confederate.
<i>Achor</i> , a Valley.	<i>A Lye</i> , Falsity.
<i>Acre</i> , of Land.	<i>Ailow'd</i> , granted.
<i>Advice</i> , a Counsel.	<i>Aloud</i> , with a Noise.
<i>Advise</i> , to Counsel.	<i>Altar</i> , of Sacrifice.
<i>Ale</i> , Malt Liquor.	<i>Alter</i> , to change.
<i>Ail</i> , to Trouble.	<i>Amiss</i> . Wrong.
<i>All</i> , every one.	<i>A Miss</i> , a Whore,
	<i>Ant</i> , Pismire.

Aunt,

Aunt, Uncle's Wife.
 A Peal, Ringing.
 Appeal, to higher Power.
 A Peer, Lord.
 Appear, to be seen.
 Aray, good Order.
 Array, to cloath.
 A Rose, to smell to.
 Arose, did rise.
 Arrand, a Message.
 Arrant, notorious.
 Arras, Hangings.
 Arrows, to shoot.
 Harrafs, to trouble.
 A Scent, smell.
 Ascent, going up.
 Assert, Agreement.
 Assistance, help.
 Assistants, helpers.
 Augur, a Sooth-sayer.
 Aggre, for Carpenters.
 Axe, to cut Wood.
 Acts, of Parliament.
 Babel, the Tower.
 Babble, to prate.
 Bacon, Hogs Flesh.
 Baken, baked.
 Beckon, to wink.
 Bail, a Surety.
 Bale, of Cloth or Silk.
 Bald, without Hair.
 Bawl'd, cry'd out.
 Bill, a round Substance.
 Bawl, to cry aloud.
 Barbara, a Woman.

Barony, a County.
 Barberry, Fruit.
 Bare, naked.
 Bear, a wild Beast.
 Barrister, at Law.
 Barretor, a Disturber.
 Bass, a part of Musick.
 Buz, Cloth.
 Bays, Bay-trees.
 Be, are.
 Bee, with Honey.
 Beer, Malt Drink.
 Bier, to carry the Dead.
 Bel, an Idol.
 Bell, to ring.
 Berry, a small Fruit.
 Bury, to interr.
 Blew, did blow.
 Blue, a Colour.
 Beard, Plink.
 Bor'd, a Hole.
 Boar, a Beast.
 Boor, a Country Fellow.
 Bore, to make a Hole.
 Bold, confident.
 Bow'd, cast a Bowl.
 Bolt, the Door.
 Boust, the Mill.
 Bow, to bend.
 Bough, a Branch.
 Boy, a Lad.
 Broy, to bear up.
 Beaul, to eat.
 Bred, brought up.
 Creeches, to wear.

<i>Breaches</i> , broken Places.	<i>Cholar</i> , Rage.
<i>Bruit</i> , a Report.	<i>Collar</i> , for the Neck.
<i>Bruit</i> , a Beast.	<i>Collar</i> , Beef and Brawn.
<i>Burrow</i> , for Coneys.	<i>Cieling</i> , of a Room.
<i>Borough</i> , a Corporation.	<i>Sealing</i> , setting a Seal.
<i>By</i> , near.	<i>Cittern</i> , an Instrument.
<i>Buy</i> , for Money.	<i>Citron</i> , a Fruit.
<i>Brews</i> , he breweth.	<i>Clark</i> , of a Parish.
<i>Bruise</i> , to break.	<i>Clerk</i> , a Clergyman.
<i>Brewis</i> , fat.	<i>Clause</i> , of a Sentence.
<i>Caen</i> , in Normandy.	<i>Claws</i> , of a Bird or Beast.
<i>Cain</i> , the Murderer.	<i>Coat</i> , a Garment.
<i>Cane</i> , a Shrub.	<i>Cote</i> , a Cottage.
<i>Calais</i> , in France.	<i>Comb</i> , for the Hair.
<i>Chalice</i> , a Cup.	<i>Come</i> , remove hither.
<i>Call</i> , by name.	<i>Comet</i> , a blazing Star.
<i>Cawl</i> , of a Perriwig.	<i>Commit</i> , to do.
<i>Cannon</i> , a Gun.	<i>Common</i> , publick.
<i>Canon</i> , a Rule.	<i>Commune</i> , to converse.
<i>Capital</i> , chief.	<i>Condemn</i> , to death.
<i>Capitol</i> , a Tower in Rome.	<i>Contemn</i> , to despise.
<i>Career</i> , full speed.	<i>Council</i> , an Assembly.
<i>Carrier</i> , that carrieth.	<i>Counsel</i> , Advice.
<i>Cellar</i> , of Liquors.	<i>Cou'd</i> , was able,
<i>Seller</i> , that selleth.	<i>Cud</i> , of Cattle.
<i>Censer</i> , for Incense.	<i>Courant</i> , a Messenger.
<i>Censor</i> , a Reformer.	<i>Current</i> , passable.
<i>Censure</i> , Judgment.	<i>Currants</i> , <i>Coriaths</i> , Fruits.
<i>Centaur</i> , an Herb.	<i>Creek</i> , of the Sea.
<i>Century</i> , 100 Years.	<i>Crick</i> , in the Neck.
<i>Centry</i> , a Guard.	<i>Cousin</i> , by Relation.
<i>Chair</i> , to sit in.	<i>Cozen</i> , to cheat.
<i>Chare</i> , a Jobb of Work.	<i>Cymbal</i> , an Instrument.
<i>Champaigne</i> , in France.	<i>Symbol</i> , a Mark.
<i>Campaigne</i> , a Summer's	<i>Cypress</i> , a Tree.
War.	<i>Cyprus</i> ,

<i>Cyprus</i> , an Island.	<i>Door</i> , of an House.
<i>Cruise</i> , a little Vessel.	<i>Dragon</i> , a Beast.
<i>Cruise</i> , by the Sea Coast.	<i>Dragoon</i> , a Soldier.
<i>Cygnet</i> , a young Swan.	<i>Draught</i> , of Drink.
<i>Signet</i> , a Seal.	<i>Drought</i> , a drinefs.
<i>Daign</i> , to vouchsafe:	<i>Ear</i> , of the Head.
<i>Dano</i> , of Denmark.	<i>E'er</i> , Ever.
<i>Dam</i> , to stop.	<i>Year</i> , 12 Months.
<i>Damn</i> , to condemn.	<i>Earth</i> , the Ground.
<i>Dear</i> , of great value.	<i>Hearth</i> , of a Chimney.
<i>Deer</i> , in a Park.	<i>Easter</i> , a Feast.
<i>Deceased</i> , dead.	<i>Hester</i> , a Woman.
<i>Diseased</i> , sick.	<i>Eaten</i> , devour'd.
<i>Decent</i> , becoming.	<i>Eton</i> , a Town's Name.
<i>Descent</i> , going down,	<i>Eminent</i> , famous.
<i>Dissent</i> , to disagree.	<i>Imminent</i> , over head.
<i>Deep</i> , low in the Earth.	<i>Enow</i> , in number.
<i>Diep</i> , a Town in France.	<i>Enough</i> , in Quantity.
<i>Defer</i> , to put off.	<i>Enter</i> , go in.
<i>Differ</i> , to disagree.	<i>Interr</i> , to bury.
<i>Derbe</i> , a City in Asia.	<i>Intire</i> , whole.
<i>Derby</i> , in England.	<i>Envy</i> , Hatred.
<i>Desert</i> , merit.	<i>Envoy</i> , a Messenger.
<i>Desart</i> , a Wildernefs.	<i>Er</i> , the Son of <i>Jadah</i> .
<i>Dew</i> , from Heaven.	<i>Err</i> , to mistake.
<i>Due</i> , a Debt.	<i>Exercise</i> , Labour.
<i>Do</i> , to make,	<i>Exorcise</i> , to conjore.
<i>Doe</i> , a Female Deer.	<i>Extant</i> , in being.
<i>Dough</i> , Paſte or Leaven.	<i>Extent</i> , diſtance.
<i>Done</i> , acted.	<i>Fain</i> , deſirous.
<i>Don</i> , a Spaniſh Lord.	<i>Feign</i> , to diſſemble.
<i>Dun</i> , colour.	<i>Faint</i> , weary.
<i>Devices</i> , Inventions.	<i>Feint</i> , a falſe march.
<i>Devizes</i> , in <i>Wiltſhire</i> .	<i>Fair</i> , comely.
<i>Doer</i> , that doth.	<i>Fare</i> , a cuſtomary Duty.

<i>Feed</i> , to eat.	<i>Gilt</i> , with Gold.
<i>Fee'd</i> , rewarded.	<i>Guilt</i> , of Sin.
<i>Fellow</i> , a Whitlow.	<i>Glutinous</i> , sticking.
<i>Felon</i> , a Criminal.	<i>Gluttonous</i> , greedy.
<i>Figure</i> , Shape.	<i>Grain</i> , of Corn.
<i>Vigour</i> , Strength.	<i>Grane</i> , an Island in Kent.
<i>File</i> , of Metal.	<i>Grate</i> , for Coals.
<i>Foil</i> , to overcome.	<i>Great</i> , large.
<i>Filip</i> , with the Finger.	<i>Grater</i> , for Nutmeg.
<i>Philip</i> , a Man's Name.	<i>Greater</i> , larger.
<i>Fir</i> , Wood.	<i>Greave</i> , a Boot.
<i>Furr</i> , of a Skin.	<i>Grieve</i> , to lament.
<i>Flour</i> , for Bread.	<i>Grays</i> , a Town.
<i>Flower</i> , of the Field.	<i>Grazz</i> , to eat Grass.
<i>Follow</i> , to come after.	<i>Groan</i> , to sigh.
<i>Fallow</i> , ground untill'd.	<i>Grown</i> , increased.
<i>Forth</i> , abroad.	<i>Grot</i> , a Cave.
<i>Fourth</i> , in Number.	<i>Groat</i> , four pence.
<i>Foul</i> , nasty.	<i>Hail</i> , to salute.
<i>Fowl</i> , a Bird.	<i>Hale</i> , to draw a long.
<i>Fourn</i> , to sit on.	<i>Hare</i> , in the Field.
<i>Firm</i> , Shape.	<i>Hair</i> , of the Head.
<i>Francis</i> , a Man.	<i>Harsh</i> , cruel.
<i>Frances</i> , a Woman.	<i>Hassh</i> , to mince Meat.
<i>Frays</i> , Quarrels.	<i>Hart</i> , a Beast.
<i>Licse</i> , fry'd Meat.	<i>Heart</i> , the Seat of Life.
<i>Gall</i> , bitter Substance.	<i>Hazen</i> , a Harbour.
<i>Gaul</i> , a French-man.	<i>Heaven</i> , a Happiness.
<i>Garden</i> , of Herbs.	<i>Herd</i> , of Cattle.
<i>Guardian</i> , Overseer.	<i>Heard</i> , did hear.
<i>Graced</i> , Gracelul.	<i>Hard</i> , difficult.
<i>Gentle</i> , Heathen.	<i>Here</i> , in this Place.
<i>Gentle</i> , quiet.	<i>Hear</i> , to hearken.
<i>Gesture</i> , Carriage.	<i>Hie</i> , to make haste.
<i>Jester</i> , a merry Fellow.	<i>High</i> , lofty.

Hoy, a Ship.
Him, that Man.
Hymn, a Song.
Hire, Wages.
Higher, more high.
His, of him.
His, to deride.
Hiss, Frost.
Hoore, a lewd Woman.
Hole, Hollowness.
Whole, Perfect.
Ho! to call.
Hallow, to make holy.
Hollow, empty.
Holy, pious.
Wholly, entirely.
Home, House.
Whom? What Man.
Helm, Helly.
Hoop, for a Tub.
Whoop, to cry out.
Hue, Colour.
Hew, to cut.
Hugh, a Man's Name.
I, my self.
Eye, to see with.
Idle, lazy.
Idol, an Image.
I'll, I will.
Ile, to walk in.
Isle, an Island.
Oyl, of Olives.
Imploy, work.
Imply, to signify.
In, within,

Im, for Travellers.
Incite, to stir up.
Insight, Knowledge.
Ingenious, of quick Parts.
Ingenious, candid.
Iron, Metal.
Eyeborne, Proper Name.
Ketch, a Ship.
Catch, to lay hold.
Kill, to Murder.
Kiln, for Bricks.
Kind, good natur'd.
Coin'd, at the Mint.
Kiss, to salute.
Cis, Saul's Father.
Klave, dishonest.
Nave, of a Cart-wheel.
Knight, by Honour.
Night, the Evening.
Lade, the Water.
Leid, plac'd.
Lain, did lie.
Lane, a narrow Passage.
Latine, old Roman.
Latten, Tin.
Lattice, of a Window.
Leticia, a Woman's Name.
Lettuce, an Herb.
Lease, a Demise.
Leash, three.
Lees, Dregs of Wine.
Leese, to loose.
Lepor, one leprous.
Leaper, that leapeth.
Lesser, to make less.

<i>Lesson</i> , a Reading.	<i>Meat</i> , to eat.
<i>Lest</i> , for fear.	<i>Mete</i> , to measure.
<i>Least</i> , smallest.	<i>Message</i> , Business.
<i>Lethargy</i> , Sleepiness.	<i>Messuage</i> , a House.
<i>Liturgie</i> , Common Prayer.	<i>Mews</i> , for Hawks.
<i>Lier</i> , in wait.	<i>Muse</i> , to meditate.
<i>Liar</i> , a teller of Lyes.	<i>Mighty</i> , powerful.
<i>Limb</i> , a Member.	<i>Moiety</i> , half.
<i>Linn</i> , to paint.	<i>Mile</i> , by measure.
<i>Line</i> , length.	<i>Mol</i> , to labour.
<i>Loyn</i> , of Veal.	<i>Mite</i> , small Monney.
<i>Lo</i> , behold.	<i>Might</i> , Strength.
<i>Low</i> , humble.	<i>Moad</i> , a Ditch.
<i>Lose</i> , to suffer Loss.	<i>Mote</i> , in the Eye.
<i>Loose</i> , to let go.	<i>More</i> , in quantity.
<i>Lower</i> , to let down.	<i>Mower</i> , that mows.
<i>Lowr</i> , to frown.	<i>Moor</i> , barren Ground.
<i>Made</i> , finished.	<i>Morter</i> , made of Lime.
<i>Maid</i> , a young Woman.	<i>Mortar</i> , to pound in.
<i>Main</i> , the chief Thing.	<i>Naim</i> , a Place so call'd.
<i>Mane</i> , of a Beast.	<i>Name</i> , a Title.
<i>Male</i> , the He.	<i>Naught</i> , bad.
<i>Mail</i> , Armour.	<i>Nought</i> , nothing.
<i>Manner</i> , Custom.	<i>Nay</i> , not.
<i>Mannor</i> , a Lordship.	<i>Neigh</i> , as a Horse.
<i>Market</i> , for Traffick.	<i>Neather</i> , lower.
<i>Mark it</i> , mind that,	<i>Neither</i> , none of the two.
<i>Marsh</i> , watry Ground.	<i>Nice</i> , curious.
<i>Mash</i> , the Hole of a Net.	<i>Noise</i> , clamour.
<i>Martin</i> , a Man's Name.	<i>Nigh</i> , near.
<i>Marten</i> , a Bird.	<i>Nye</i> , Isaac.
<i>Mead</i> , a Meadow.	<i>Not</i> , denying.
<i>Mede</i> , one of Media.	<i>Knot</i> , to untie.
<i>Mean</i> , of low value.	<i>Oar</i> , of a Boat.
<i>Mien</i> , Behaviour.	<i>Over</i> , over

Ore, of Metal.
Of, belonging to.
Off, at a Distance.
Oh! Alas.
Owe, to be indebted,
One, in Number.
Own, to acknowledge.
Order, Rank.
Ordure, Rank,
Our, of us.
Hour, sixty Minutes.
Palate, of the Mouth.
Pallet, a little Bed.
Pale, colour.
Pail, a Vessel.
Pall, a Funeral Cloth.
Paul, a Man's Name.
Parasite, a Flatterer.
Parricide, a Murderer.
Parson, of a Parish.
Person, some Body.
Peal, upon the Bells.
Peel, the outside.
Pear, a Fruit.
Pair, a couple.
Fare, to cut.
Peter, a Man's Name.
Petre, Salt.
Pick, to choose.
Picque, a Quarrel.
Pint, half a Quart.
Point, a Stop.
Place, of Abode.
Plaise, a Fish.
Plumb, the Fruit.

Plum, a leaden Weight.
Plow, to make a Furrow.
Pole, a long Stick.
Poll, to cut the Hair.
Pore, of the Skin.
Poor, beggarly.
Posy, of Flowers.
Poesy, Poetry.
Pour, as Water.
Power, might.
Practice, Exercise.
Practise, to Exercise.
Pray, to beseech.
Prey, a Booty.
Presence, being here.
Presents, Gifts.
Princes, Kings Sons.
Princess, the Daughter.
Principle, chief.
Principle, the first Rule.
Prophet, Advantage.
Prophet, a Foreteller.
Prophecy, foretelling.
Prophesie, to foretell.
Quire, of Paper.
Choir, of Singers.
Rack, to torment.
Wreck, of a Ship.
Rain, Water.
Reign, rule as King.
Rein, of a Bridle.
Raise, to set up.
Rays, Sun-beams.
Race, to run.
Raze, to demolish.

Red, a Colour.	Roof, Top of a House.
Read, did read.	Said, did say.
Radish, a Root.	Sail, of a Ship.
Reed, a Shrub.	Sale, bargaining.
Read, in a Book.	Satiety, Fulness.
Relick, a Remainder.	Society, Company.
Relict, a Widow.	Saviour, that saveth.
Rere, the back part.	Savour, a smell.
Rear, to erect.	Savor, a taste.
Rhyme, or Rhythm, in	Saviour, Christ Jesus.
Verse.	Scene, of the Stage.
Rime, a freezing Mist.	Seen, beheld.
Rices Corn.	Seas, great Waters.
Rise, Advancement.	Seize, to lay hold of.
Rie, Corn.	Cease, to leave off.
Rye, in <i>Sussex</i> .	Sent, order'd away.
Wry, crooked.	Scent, a smell.
Ring, the Bells.	Shew, to make appear.
Wring, the Hands.	Shoe, for the Foot.
Rite, a Ceremony.	Ship, for sailing.
Right, just and true.	Sheep, a Beast.
Wright, a working Smith.	Shoar, a Prop.
Write, with a Pen.	Shore, the Sea Coast.
Rode, did ride.	Shown, did shew.
Road, the High-way.	Shone, did shine.
Row'd, did row.	Spread, to mince.
Roe, a kind of Deer.	Sred, minced.
Row, a Rank.	Sign, a Token.
Rome, a City.	Sine, in Geometry.
Roan, part of a House.	Site, Situation.
Rote, by Heart.	Cite, to summon.
Wrote, did write.	Sight, seeing.
Wrought, workt.	Sink, to go down.
Rough, not smooth.	Cinque, five.
Ruff, a Band.	Slight, to despise.
	Sleight,

The Young Man's Companion

<i>Sleight</i> , Dexterity.	<i>Than</i> , in Comparison.
<i>Sloe</i> , a sour Fruit.	<i>Then</i> , at that Time.
<i>Slow</i> , tardy.	<i>There</i> , in that Place.
<i>Slough</i> , a Puddle.	<i>Their</i> , of them.
<i>Soal</i> , of a Shoe.	<i>Through</i> , thorough.
<i>Soul</i> , of a Man.	<i>Throw</i> , to cast.
<i>Sale</i> , of a Fish.	<i>Throne</i> , a Seat of State.
<i>Some</i> , a part.	<i>Thrown</i> , cast.
<i>Sam</i> , the whole.	<i>Tie</i> , to make fast.
<i>Son</i> , a Man Child.	<i>Toy</i> , a Play-thing.
<i>Sun</i> , the Heavenly Light.	<i>Tide</i> , Flux of the Sea.
<i>Soon</i> , quickly.	<i>Tied</i> , made fast.
<i>Swoon</i> , to faint.	<i>Tile</i> , for covering.
<i>Sore</i> , an Ulcer.	<i>Toil</i> , to take Pains.
<i>Soar</i> , to mount upward.	<i>Time</i> , when.
<i>Stare</i> , to look earnestly.	<i>Thyme</i> , an Herb.
<i>Stair</i> , a Step.	<i>To</i> , unto,
<i>Stear</i> , a young Bullock.	<i>Toe</i> , of the Foot.
<i>Steer</i> , to guide a Ship.	<i>Tow</i> , to draw along.
<i>Stile</i> , for Passage.	<i>Too</i> , likewise.
<i>Style</i> , of Writing.	<i>Two</i> , a Couple.
<i>Stood</i> , did stand.	<i>Told</i> , as a Tale.
<i>Stud</i> , an Embossment.	<i>Toll'd</i> , as a Bell.
<i>Straight</i> , not crooked.	<i>Tongs</i> , for the Fire.
<i>Strait</i> , narrow.	<i>Tongues</i> , Languages.
<i>Succour</i> , help.	<i>Towr</i> , to hang in sight.
<i>Sucker</i> , a young Twig.	<i>Tower</i> , of Defence.
<i>Sue</i> , to make Suit.	<i>Tscan</i> , Order,
<i>Sw</i> , with a Needle.	<i>Tu kin</i> , a great Tooth.
<i>Tail</i> , the end.	<i>Vacation</i> , a ceasing.
<i>Tale</i> , a Story.	<i>Vocation</i> , a Calling.
<i>Tame</i> , not wild.	<i>Veil</i> , a Covering.
<i>Thame</i> , a Town.	<i>Veal</i> , Calf's Flesh.
<i>Tare</i> , Weight allow'd.	<i>Vale</i> , a Valley.
<i>Tear</i> , to rend in Pieces.	<i>Vain</i> , useless.

<i>Vane</i> , to shew the Wind.	<i>Wey</i> , forty Bushels.
<i>Vein</i> , of the Blood.	<i>Weal</i> , good.
<i>Valley</i> , a Dale,	<i>Wheal</i> , a Pimple.
<i>Value</i> , worth.	<i>Weald</i> , of Kent, and <i>Sussex</i> .
<i>Volley</i> , of Shot.	<i>Weild</i> , to manage.
<i>Vassal</i> , a Slave.	<i>Wen</i> , a Swelling.
<i>Vessel</i> , for use.	<i>Wnen</i> , at what Time.
<i>Vial</i> , or <i>Phial</i> , a Glafs.	<i>Wet</i> , watry.
<i>Viol</i> , for Musick.	<i>Whet</i> , to sharpen.
<i>Vice</i> , ill Habit.	<i>What</i> , which.
<i>Vise</i> , for Workman.	<i>Wat</i> , <i>Walter</i> .
<i>Voice</i> , a Sound.	<i>While</i> , in the mean Time.
<i>Ure</i> , Practice.	<i>Wile</i> , a Trick.
<i>Ewer</i> , a Bason.	<i>Whore</i> , a lewd Woman.
<i>Your</i> , of you.	<i>Woer</i> , a Suiter.
<i>Use</i> , to be wont.	<i>Wight</i> , an Island.
<i>Ews</i> , Sheep.	<i>White</i> , a colour.
<i>Wade</i> , to go in Water.	<i>Wist</i> , knew.
<i>Wigh'd</i> , in the Ballance.	<i>Whist</i> , Silence.
<i>Wail</i> , to mourn.	<i>Wos</i> , Misery.
<i>Whale</i> , a Sea Fish.	<i>Who</i> , which.
<i>Wale</i> , mark of a Whip.	<i>Wood</i> , of Trees.
<i>Wain</i> , to decrease.	<i>Wou'd</i> , was willing.
<i>Mean</i> , a Child.	<i>Yarn</i> , Woollen.
<i>Wait</i> , to look for.	<i>Earn</i> , to get.
<i>Weight</i> , Heaviness,	<i>Tern</i> , to Compassionate.
<i>Ware</i> , Merchandize.	<i>Ye</i> , your selves.
<i>Wear</i> , to put on Cloaths.	<i>Yea</i> , yes.
<i>Were</i> , was.	<i>Yew</i> , Tree.
<i>Waste</i> , to spend.	<i>Ewe</i> , a Sheep.
<i>Waiste</i> , the middle.	<i>You</i> , yourself.
<i>Way</i> , to walk in.	
<i>Weight</i> , to poize.	

*Of the Points, or Stops, and other Marks
used in Writing, and Reading; their
Characters, Places and Signification.*

DUE Pointing is very necessary in Writing, to prevent Confusion, and assists the Reader, both as to a right *Pronunciation*, by the raising and falling of the Voice; and also to the more easy and distinct Apprehension of the Sense.

Points belonging either to a single Word, or to a whole Sentence.

Those that appertain to a *single Word*, are,

1. An *Apostrophus* (commonly, but not rightly called an *Aposrophe*) thus mark (') which signifies the cutting off, or emission of a Letter, whereby two Syllables are contracted into one. And this is sometimes of a *Vowel*; as *Th'* appurtenances, the *Learned'st*, *is't*, *it's*, (or *'tis*) for the *Appurtenances*, the *Learnedest*, *is it*, *it is*; sometimes of a *Consonant*, as, *it's*, for *in the*; and sometimes of a *Vowel* and *Consonant* together; as *ne'er*, for *never*; *o'er*, for *over*; *I'll*, for *I will*. It is also used to denote a *Genetive Case*, as *my Father's Land*, *my Wife's Son*; for *Land of my Father*, *son of my Wife*.

2. *Dieresis* is a Mark made thus (") to denote the parting of two Vowels, which otherwise might seem to make a Diphthong, and is set over the latter Vowel, as in the very Word *D.ēr'sis*, *Gl.ā.l.*, &c. of which we have occasionally spoken before.

3. *Hyphen* thus (=) or commonly thus (-) is a Note either of joining the Syllables of the same Word, when one or more of them happen to be
write

write in one Line, and the rest (for want of room) in another. Or else divides the several integral parts of a compounded Word, as *Hand-Granadoes*, *Fancy-pleasing-Faces*, *Fire-shovel*. In which kind of Composition our Language is second to none; no not to the copious Greek itself.

The Points appertaining to a Sentence, are.

1. A *Comma*, the same Mark under the Line, as *Apostrophus* is above it; thus (,) and is a note of a *short stay*, or *distinction* between Words in the same Sentence, when yet the Sense is imperfect, to supply which, something follows depending on what went before. And therefore in Reading, the Voice must there be a very little stopt, but the *Tenor* of it still kept up.

2. A *Colon* thus (:) being a Note of *perfect sense*, but not of a *perfect Sentence*; because there is still more of it behind: And therefore commonly is set before the Reason giving for what is before asserted. And here the Voice must be staid somewhat longer, and the *Tenor* of it a little remitted or let fall.

3. Because in long Sentences there may be need of more distinctions; there is added a *Semicolon* (that is, an *half Colon*) thus (;) which differs not much from a *Colon* in its *Use*, but requires somewhat a shorter *Pause*; and indeed, in *Writing* this Mark is commonly used instead of, and more often than the *Colon*; but if you would write accurately, you should distinguish them.

4. A *Period* or full Stop thus mark't (.) is a Note both of perfect Sense, and a compleat Sentence, where the Voice in reading must be staid considerably; and the *Tenor* of it at last word follow,

low, that both the *Reader* and *Speaker* may recover his *Breath*, and the *Hearer* have time to reflect a little on what is delivered, before they advance to *new Matter*.

An Example of these four *Stops* or *Points* we have in that of *St. Paul*, 1 *Cor.* 13. 2. “*Tho’ I have*
“ *the Gift of Prophecy, and understand all Myseries,*
“ *and all Knowledge : And tho’ I have all Faith, so*
“ *that I could remove Mountains, and have not Cha-*
“ *rity, I am nothing.*”

Or more exactly in that of *David*, *Psal.* 141. 5.
“*Let the Righteous smite me, it shall be a kind-*
“ *ness; and let him reprove me, it shall be an*
“ *excellent Oyl, which shall not break my Head;*
“ *for yet my Prayer also shall be in their Calami-*
“ *ties.*”

How strangely would this Text appear, if any one should write it thus ————— *Let the Righteous smite me it, shall be a kindness and let ; him reprove me it shall ; &c.*

5. A note of *Exclamation*, or *Admiration*, is thus markt (!) As, *Oh the depth of Riches, both of the Wisdom and Knowledge of God !* This Mark is also used in addressing to any Person, either in the beginning or middle of a Sentence ; As, *Sir ! May it please your Majesty ! We cannot but with all Gratitude acknowledge, that ’tis to you, Great Sir ! we owe the Establishment of our Religious Freedom.*

6. A *Parenthesis* is two Semi-circles, or half-Moon, thus () including some additional or explanatory words in a Sentence ; without which the sense of the whole doth notwithstanding remain intire ; As, ————— *For I know in me (that is, in my Flesh, dwelleth no good ————— Honour thy Father*
and

and thy Mother (which is the first Commandment with Promise) that it may be well with thee.

A *Parenthesis* is generally sounded with a lower Voice, and endeth as a *Comma*. Sometimes there happens to be a *Parenthesis* within a *Parenthesis*, but this is avoided by the best Authors because it obscures and perplexes the Sense.

7. *Eclipsis*, is a piece of a Line drawn to denote that some part of a Verse or Sentence cited, is left out, either at the beginning or end: As,

~~—————~~ 'Tis still the Miser's Lot.

The young Fool spends all that the old Knave got.

8. When Words are quoted out of another Author, they should be markt thus (") on the side, which Printers call a *Double Comma* turn'd.

9. *Index* is a Note like a *Hand*, with the Fore-finger pointing out at something that is remarkable, thus, 

10. *Obelisk*, is a mark of Reference to the *Margin*, thus, †.

11. *Section* denotes the beginning of a new Head of Discourse, marked thus, §.

12. To these we add, that which is called *Caret*, [that is to say in English, it is wanting] markt with a Latine Circumflex, thus (^) which is to shew where a Word forgotten in the heat of Writing, and placed above the Line, is to come in. And also this Mark [] called a *Crochet*, which generally include a Word or Sentence *Explanatory* of what went before; of which you have several Examples before, and one just above. —

And so much for Pointing; which carefully observed, will add great Grace and Credit to your Writing.

Before I proceed to instruct you in the Art of Writing and Arithmetick, I shall recommend the following Considerations Taken out of Judge Hale's Contemplations in his Account of the Good Steward, to your serious Consideration and Imitation.

As Touching my Conscience.

I Have been very diligent to keep my Conscience Clean, to Incourage it in the Vicegeneracy that Thou [the great Lord of the World] hast given it over my Soul and Actions. I have kept it in the Throne and greatest Reverence and Authority in my Heart.

In Actions to be done or omitted, I have always advised with it, and taken its Advice; I have neither stifled, nor forced, nor bribed it; but gave it a free Liberty to advise and speak out, and a free Subjection of my Will, Purposes, and Actions to it.

If I have at any time done amiss, I have not taken Her up short, or stopped Her Mouth, or my own Attention to her Chiding and Reproof; but I have with much submission of mind, born her Chastisement, and improved it to and humbling of my self before thee for my Failings; for I have look'd upon her as acting by thy Authority, for thy Service, and to thy Glory, and I durst not discourage, discountenance, or disobey her.

When

When she was pleased, and gave me good words, I was glad; for I esteem'd her as a Glass that represented to my Soul the Favour or Displeasure of God himself, and how he stood affected towards me.

I have more Trembled under the Fear of a seared or discouraged Conscience, than under the fear of a sharp or scrupulous Conscience, because I always accounted the *latter*, tho' more *troublesome*, yet more *safe*.

I have been very jealous, either of wounding, or grieving, or discouraging, or dead'ning my Conscience. I have therefore chosen rather to forbear *that* which seemed but *Indifferent*, lest there should be somewhat in it that might be Unlawful; and would rather gratify my Conscience, by being too scrupulous, then Displease, Disquiet, or Flat it, by being too Venturous: I have still chosen rather to forbear what might be probably Lawful, than to do that which might be possibly Unlawful; because I could not Err in the *former*, I might in the *latter*.

I have been careful to advise impartially with my Conscience before my Actions; so lest I had committed any thing amiss, either in the *nature* or *manner* of the Action, I commonly, every Night, brought my Actions of the Day-past, before the Judicatory of my Conscience, and her to a free and impartial Censure of them; and what she sentenc'd Well-Done, I with humility returned the Praise therefore to thy Name; what she sentenc'd Done Amiss, I did humbly sue unto thee for Pardon, and for Grace to prevent me from the like Miscarriages. By this Means I kept my Conscience active, renewed, and pre-
served

served my Peace with thee, and learned Vigilance and Caution for the Time to come.

Touching thy Creatures.

I have not only looked upon thy Blessings and Bounty, in lending me thy own Creatures for my use; but I have sought unto thee for a Blessing upon them, in my use of them. I did very well observe, that there is by my Sin a Curse in the very Creatures that I receive, unless thy Goodness fill them: Tho' thou shouldst give me Quails and Manna from Heaven, yet without thy Blessing upon them, they would become Rottenness and Putrifaction to me; and therefore I ever begg'd thy Blessings upon thy Blessings, as well as the Blessings themselves; and attributed the good I found, or was to expect in them to the same Hand that gave them.

I received and used thy Creatures, as committed to me under a trust, and as a Steward and Accomptant for them; and therefore I was always careful to use them according to those Limits, and in Order for those Ends, for which thou didst commit them to me: 1. With Temperance and Moderation; I did not use thy Creatures to Luxury and Excess, to make Provision for my Lusts, with vain Glory or Ostentation, but for the convenient Support of the Exigences of my Nature and Condition; and if at any time thy Goodness did indulge me an Use of them for Delight, as well as Necessity, I did it but Rarely and Watchfully; I looked not upon the Wine, when it gave its colour in the Cup; nor gave my Self over either to Excess or Curiosity in Meats or Drinks; I checked my self therein, as being in
thy

thy Presents, and still remembered I had thy Creatures under an Accompt ; and was ever careful to avoid Excess or Intemperance, because every excessive Cup and Meal was in danger to leave me somewhat in Super and Arrear to my Lord.

2. With Mercy and Compassion to the Creatures themselves, which thou hast put under my Power and Disposal. When I considered the admirable Powers of Life and Sense, which I saw in the Birds and Beasts, and that all the Men in the World could not give the like Being to any thing, nor Restore that Life and Sense, which is once taken from them ; when I considered how innocently and harmlessly the Fowls, and Fish, and the Sheep, and Oxen take their Food, that thou, the Lord of all, hast given them, I have been apt to think, that surely thou didst intend a more innocent kind of Food to Man, than such as must be taken with such Detriment to those living Parts of thy Creation ; and although thy wonderful Goodness hath so much indulged to Mankind, as to give up the Lives of these Creatures for the Food of Man by thy express Commission, yet I still do, and ever did think, that there was a Justice due from Man, even to these Sensible Creatures, that he should take them sparingly, for Necessity, and not for Delight ; or if for Delight, yet not for Luxury. I have been apt to think, that if there were any more liberal Use of Creatures for Delight or Variety, it should be of Fruits or such other Delicacies as might be had without the loss of Life ; but however it be, this very Consideration hath made me very sparing and careful, not vainly, superfluously, or unnecessarily, or prodigally, to take away the Life of
thy

thy Creatures for Feasting and Excess, And the very same Consideration hath always gone along with me, *in reference to the Labour of thy Creatures.* I have ever thought that there was a certain degree of Justice due from Man to the Creatures, as from Man to Man; and that an excessive, immoderate, unreasonable use of the Creatures Labour, is an Injustice for which he must Accompt; to deny Domestical Creatures their convenient Food; to exact that Labour from them, that they are not able to perform; to use Extremity or Cruelty towards them, is a breach of that Trust, under which the Dominion of the Creatures was committed to us, and a breach of that Justice that is due from Men to them; and therefore I have always esteem'd it as a part of my Duty, and it hath been always my Practice, to be merciful to my Beasts; and upon the same Account I have ever esteemed it a Breach of Trust, and have accordingly declined any Cruelty to any of thy Creatures; and as much as I might, prevent it in others, as a Tyranny, inconsistent with the Trust and Stewardship that thou hast committed to me.

I have abhorred those Sports that consist in the Torturing of the Creatures; and if either noxious Creatures must be destroyed, or Creatures for Food must be taken, it hath been my Practice to do it in that manner, that may be with the least Torture or Cruelty to the Creature; and I have still thought it an unlawful Thing to Destroy those Creatures for Recreation-sake, that either were not Hurtful when they lived, or are not Profitable when they are killed; ever remembering that thou hast given us a Dominion over thy Creatures; yet it is under a Law of Justice,

Justice, Prudence, and Moderation; otherwise we shall become Tyrants, not Lords over thy Creatures; and therefore those Things of this nature, that others have practised as Recreations, I have avoided as Sins.

Concerning my Wealth.

The more I had, the more was my Care, and the greater the Charge that I had under my Hands, and the more was my Solitude to be a Faithful Steward of it, to the Honour and Use of my Master; but my part was the least in it: Indeed I rejoiced in this, that my Master esteem'd me Wise and Faithful, committing the Dispensation thereof to my Trust; but I thought it no more mine, than the Lord's Bailly, or the Merchant's Cash-keeper, thinks his Master's Rents or Money his,

And therefore thought it would be a breach of my Trust to Consume or Embezzle that Wealth in excessive Superfluities of Meat, Drink, or Apparel, or in Advancing my self, or my Posterity, to a massy or huge Acquest.

Touching my Reputation.

Tho' I have loved my Reputation. and have been vigilant not to lose or impair it by my own Default or Neglect, yet I have looked upon it as a brittle thing; a thing that the Devil aims to hit in a special manner, a thing that is much in the Power of a false Report, a Mis-apprehension to wound and hurt: Notwithstanding all my Care, I am at the Mercy of others, without God's wonderful over-ruling Providence. And as my Reputation is the Esteem that
others

others have of me so that Esteem may be blemished without my Default. I have therefore always taken this care, not to set my Heart upon my Reputation. I will use all Fidelity and Honesty, and take care it shall not be lost by any Default of mine; and soiled by evil or envious Men or Angels, I will patiently bear it, and content my self with the Serenity of my own Conscience: *Hic murus aheneus esto.*

(This shall be a Wall of Defence to me.)

The aforesaid Author on Solitude.

LET him that will, ascend the tottering Seat
Of courtly Grandeur, and become as Great
As are his Mountain wishes: As for me,
Let sweet Repose and Rest, my Portion be.

Give me some mean obscure Recess; a Sphere
Out of the Road of Bus'ness, or the Fear
Of falling lower; whereby I sweetly may
My self, and dear Retirement, still enjoy.

Let not my Life, or Name be known unto,
The Grantees of the Times; to's'd to and fro,
By Censures or Applauses: But let my Age
Slide gently by, not over-thwart the Stage
Of publick Action, Unheard, Unseen,
And Unconcern'd, as if I ne'er had been.

And thus, whilst I shall pass by my silent Days
In shady Privacy, free from the Noise
And Bustles of the World: Then, then shall I
A Good, Old, Innocent Plebeian dye.

Death is a meer Surprize, a very Snare,
To him that makes it his Life's greatest Care.

To

To be a Publick Pageant, known to All;
But unacquainted with Himself, doth fall.

A Thanksgiving Hymn for the Communion.

TO God be Glory, Peace on Earth,
to all Mankind Good-will:
We bless, we praise, we worship Thee,
and glorify Thee still:
And Thanks for thy great Glory give,
that fills our Souls with Light:
O Lord, God, heavenly King, the God
and Father of all Might.
And thou begotten Son of God,
before all Time begun,
O Jesus Christ, God, Lamb of God,
the Father's only Son.
Have Mercy, thou that tak'st the Sins
of all the World away;
Have Mercy, Saviour of Mankind,
and hear us when we Pray.
O thou who sitt'st at God's Right Hand,
upon the Father's Throne,
Have Mercy on us, thou, O Christ,
who art the Holy One,
The Lord, who with the Holy Ghost,
whom Earth and Heav'n adore,
In Glory of the Father art
Most High for evermore.

Part of the Te Deum Laudamus.

O God we praise thee, and confess,
that thou the only Lord
And ever-lasting Father, art,
by all the Earth ador'd:

To

To thee all Angels cry aloud;
to thee the Pow'rs on high,
Both Cherubim and Seraphim,
continually do cry.
Thrice holy Lord, the God whom all
the heavenly Host obey,
The World is with the Glory fill'd
Of thy majestick Ray.
Th' Apostles glorious Company,
and Prophets crown'd with light,
With all the Martyrs noble Host,
thy constant Praise recite.
The Holy Church throughout the World,
O Lord, confesses thee,
That thou eternal Father art,
of boundless Majesty.
Thy honour'd, true, and only Son,
and Holy-Ghost, the Spring
Of never-ceasing Joy, O Christ,
Of Glory thou art King.

The Lord's Prayer.

OUR Father, who in Heaven art,
Thy Name be hallow'd in each Heart;
Thy Kingdom come; may we fulfil,
Who dwell on Earth, thy Heavenly Will,
With equal Chearfulness and Love,
As Saints and Angels do Above.
Give us this Day our daily Bread;
Us into no Temptation lead;
But with thy Grace preserve us still
From Sin, and every thing that's ill.
For thine the Kingdom, and the Pow'r,
And Glory be for evermore.

Part of the Commandments.

GOD spake these Words, O *Is'rael*, hear
 what I shall now Command;
 Thy Lord and only God am I,
 who with a mighty hand,
 From *Egypt's* Land, and from the House
 of Bondage set thee free:
 And therefore, *Is'rael*, thou shalt have
 no other God but me.
 Have mercy, Lord, therefore on us,
 and all our Hearts incline,
 That we may diligently keep,
 these Righteous Laws of thine,
 The sacred Name of God, thy Lord,
 thou never shalt prophane;
 For God will them not guiltless hold,
 who takes his Name in vain.
 Have mercy Lord therefore on us,
 and all our Hearts incline,
 That we may diligently keep,
 These Righteous Laws of thine.

A few Words to Writing-Masters.

1. **I** Having taught Children to Write, and Sum up
 Money about fifty Years, and those of Ability
 paid me, but all the Poor that came to me I taught
 them *Gratis*, if they could read in the holy Bible.
2. Most Children will soon learn, if they are re-
 strain'd from Vice, and they see no bad Examples,
 For the Poet saith,

Yentb

*Youth, like to Wax, any Impression takes,
Happy then 'tis, where Virtue the first makes.*

3. I hope that none of you will set such Copies that praise or encline to Vice, if so, you must answer for that Guilt at God's Bar; and provoke not thy Children to Wrath. *Ephesians 6. 4.*

4. Their good Behaviour is to be prefer'd before their Learning to Write, &c. For no Learning is profitable to them that live not in the Fear of God, his Eye see us: *Proverbs 12. 3.* But if you swear prophane-ly, keep School no longer.

5. If neither you nor their Parents can restrain some Children from wicked Words and Actions, you ought to have them to be punished by the Magistrates, lest that Curse come upon you as did on old Ely, for not restraining his Sons from Wickedness: *1 Samuel 3. 13.*) But Oh! how backward are Parents to do this, tho' the Jews did so? *Deuteronomy 21, 18.*

6. O that every Christian School-Master was of the Mind of Epictetus, (tho' call'd a Heathen;) 'tis said *His Care was to make his Scholars Free and Blessed, by persuading them to look up to God in every Thing, whether it be small or great.* Lib. 20, Chap. 29.

7. If you teach all poor Children to write *Gratis*, as I have done, it will prove for your Profit, for *Godliness with Contentment, is the greatest Gain,* *1 Tim. 6. 6.*

8. I have found it most beneficial for Youth in general, to learn to write one plain Hand for Business; and as for Flourishing great Letters to begin their Copies, they are as needless as long Pe-

D

riwigs

riwigs; and so is setting them more Sums in a Rule than is needful, to keep them the longer at School.

9. When I knew what Trade a Boy thought to be of, I wrote his Copies of the Names of Things belonging thereto. And all their Copies they ought to learn to spell without Book.

10. Setting a Sum of Money at the End of their Copies, makes them write Figures well, and to add up Sums well also.

Lastly, It being very delightful to Children to have their Copies in Verse, therefore I have written Hundreds of Copy-Lines herein; yet, 'tis probable, that some Men (who are more nice of Words than their own Actions) may despise them; but if they incline Youth to Vertue, that's enough.

The first Alphabet of Copies to write.

ALL you that in fair Writing would excel,
 How much you write regard not, but how well,
 Bear your Pen lightly, grasp it not too hard,
 For if you do, your Writing may be marr'd.
 Courteous Behaviour, and Expressions prudent,
 Speak a Young-man in Vertue's School a Student.
 Did Learners know how Learning might advance,
 Then they would love it; and hate Ignorance.
 Easy it is to write, but to write well
 Is very hard, much harder to excel.
 Friends, Books, a chearful Heart, and Conscience clear,
 Are the most choice Companions, we have here.
 Great

Great Gains come daily to ingenious Men,
From that admired Instrument the Pen.
How dare those Eyes upon a Bible look,
Much less tow'rds God, whose Sins are all their
(Cook?

If thou in Writing would Mankind excel,
Learn first to make thy Letters well,
Keep a choice Pen, free Ink, a steady Hand,
And that's the way fair Writing to command.
Like standing Corn, blown gently by the Wind,
Let all your Letters be one way inclin'd.
Make much of every moment of your Time,
In Wisdom's School, this Lesson is the prime:
Now bend your Mind fair Writing to attain,
Your present Pains may prove your future Gain:
One dram of Holy Life excels a Pound
Of Humane Learning, tho' the most profound.
Proportion your Pen's-Nib to every Hand,
And its rare Motions learn to understand.
Quietly learn all Crosses to endure,
Repining doth more Misery procure.
Respect your Master, by whom you are taught,
And his Instructions always bear in thought.
Since thou endur'st at School to be well beaten,
Endure thy Father's Word when he doth threaten:
Thou art a Scholar; if thy Tutor do
Pose thee too hard, he will instruct thee too.
Vain Toys, and foolish Sports see thou do shun;
Else thou at last will cry, *I am undone!*
What comfort is there like a Vertuous Son?
Then in that Race teach them betimes to run:
Examples best, now in thy Youthful prime,
Besure to imitate, While God gives Time.
You Parents, who your Hopes in Children place,
Teach them betimes to run in Vertues Race:

Zealously keep, and Obey God a'ways,
So may'st thou blessed be with happy Days.

Alphabet 2. *Directions for Writing in single Copies.*

ALL Letters ev'n at Head and Feet must stand,
Bear lightly your Pen, and use a steady Hand.
Carefully mind to mend in ev'ry Line,
Down strokes are black, but upward strokes are fine.
Enlarge your Writing, if it be too small,
Full in Proportion make your Letters all,
Game not in School-time, when you ought to write,
Hold in your Elbow, sit fair to the Light.
Join all your Letters by a fine Hair-stroke.
Keep free from Blots your Piece and writing Book.
Learn the Command of Hand by frequent Use,
Much Practice doth to Penmanship conduce.
Never deny the lower Boys Assistance,
Observe from word to word an equal Distance.
Provide yourself of all Things necessary,
Quarrel not in the School, tho' others dare you;
Rule strait your Line; take care to Rule 'em fine.
Set Stems of Letters fair above the Line.
The Tops above the Stem, the Tails below.
Use Pounce to Paper, if the Ink go thro'.
View well your Piece, compare how much you've
Wipe clean your Pen, when all your Task is ended. [mended,
Your Spelling mind: Write each Word true and
[well.
Zealously strive your Fellows to excel.

The Third Alphabet.

A Child untaught is a meer Lump of Sin,
May justly blame the cause of having been.
By sad Experience this is known to some,
Who hate Instruction, to Destruction come.
Credit not always them that things relate,
Small heed is to be given to them that prate,
Despise not Mortals of a mean Estate,
Since you are Ignorant of your own Fate.
Easier and sooner Learning's lost than gain'd,
If by fresh application not maintain'd.
Fair Writing then, to excellency may rise
Most, when the Pen is most in Exercise.
Great God, whose dreadful Judgments are severe,
Silence thy Church's Foes both far and near.
How are they baffled by a subtle Devil,
That hope for Heaven, while their ways be Evil?
If thine Estate be not as 'twas before,
Yet see thou live content with present Store.
Keep at a distance from the Sons of Vice;
Once known, endanger not your Soul's Health
Learn now, in your Minority, such Things
That may, in Age, lend your Discretion Wings.
Men are more oft on Earth than Heav'n intent,
And their Industrious search is downwards bent.
Notional Knowledge is of slender use,
That's best which you to Practice can reduce.
Of bad Examples, Satan's Baits, beware,
And shun them as a Pestilential Air.
Parents do often by ill Examples draw,
Their Young Children to break God's Holy Law.

Quickly Youth learn every common Evil,
 Are very eager to obey the Devil.
 Rouse up from sloth (dear Child) betake
 Thee to thy Book, no Cavils make.
 Stuff not your Guts with Flesh and Wine,
 And Wantonness, lest you do quickly pine.
 The dismal Fate of Youth, alas! how few,
 The ways of God, and Godliness pursue?
 Vertue, tho' clad in Rags, may challenge more,
 Than Vice, adorn'd with Silk, i'th' midst of
 (Store.
 When to the World you other Faults make known,
 Ingeniously reflect upon your own,
 Young Man, whate'er thou doest by Day or Night,
 Think with thy self, thou'rt always in God's sight.
 Zealously fear and serve God all thy Days,
 For which, at last, of Heaven thou'lt have praise.

The Fourth Alphabet.

ACT nothing but what you may safely own,
 And what you need not blush at being known;
 Because out of thy Thoughts God should not pass,
 His Image stamped is on every Grass.
 Carp not at that which others do, or say,
 Lest some thus scoff at thee another Day.
 Disdain not such as are with Vertues crown'd,
 They are, or shall, or ought to be renown'd.
 Eternal Joys attend those that do dwell,
 When those that lead bad Lives are doom'd to Hell,
 Far better were it to be Ignorant,
 Than to be Learned, and God's Fear to want.
Guide

Guide so thy Pen, that no harsh roughness lie
In any part which may offend the Eye.
How many Men in Quarrels do Delight?
Tho' Christ the Prince of Peace, forbids it quite.
If every Idle Word requires Account,
To what will Oaths and Blasphemies amount.
Keep what thou hast already got by Pain,
Want will increase, where Labour makes no Gain.
Lay Hand unto thy Work, with all thy wit,
And pray that God would speed and prosper it.
Most certain 'tis a blessed Recreation,
That helpeth forward Youth's Salvation.
No Man is hardned to Destruction till,
To Divine Grace he hath oppos'd his Will.
O Christ, so perfect my renewed Will,
That I thy Holy Laws may now fulfil.
Practice and Use, 'tis that becomes each Skill,
For that makes perfect, what Neglect doth kill.
Questions doubtful, and dark Opinions tend,
To exercise Men's Brains, but to no end.
Refrain from Talk; who ever heard of any,
Undone by hearing? But by speaking many.
Shun Rumours, lest thou be as the Author nam'd,
Silence hurts none, but some for Words are blam'd.
'Tis wicked with insulting Feet to tread,
Upon the close Monument of the Dead.
Use thine Estate, but make no wilful waste,
Who waste their own, would others waste as fast.
Who cannot rest till he bad Company finds.
He breaks up House, turns out of Door his Mind,
'Xpel all wicked Thoughts, rouse up from Sin,
So best you Hell may conquer, Heav'n may win.
Young Men have ever more a special Care,
That Womanish Allurements prove not a Snare.

Zealously run for Vertue's Crown of Bays,
Which having gain'd, present to Heav'n the Praise:

The Fifth Alphabet.

AS you expect that Men should deal by you,
So deal by them, and give each Man his Due:

Better it is to gain great Reputation,
Than to be Rich, for that ne'er wants Vexation.

Constraint in all Things makes the Pleasure less,
Sweet is the Love that comes with Willingness.

Despair of nothing, that you wou'd attain:
Unwar'd Diligence your Point will gain.

Experience best is gain'd without much Cost;
Read Men and Books; then Practise what thou
[know'st.

Fortune may sometime's prove true Virtue's Foe;
But cannot work her utter overthrow.

Greatness in Virtue only's understood,
None's truly Great, that is not truly Good.

Honour's a God, that none but Fools adore;
The Wise have nobler happiness in Store.

If all Mankind wou'd live in mutual Love,
This World would much resemble that above.

Kingdoms like private Persons have their Fate,
Sometimes in high, sometimes in low Estate.

Let each Man follow close his proper Trade,
And all Affairs will soon be better made.

Men's Fancies very strangely like their Faces,
What one commends, another Man disgraces.

Number, it self, is at a Loss to Guess,
Th' Endurance of our future Happiness.

Oh!

Oh! that the Sons of Men wou'd once be wise,
And learn eternal Happiness to prize!

Pray that God may be graciously inclin'd,
To grant thee Health of Body and of Mind.

Quarrellsome Brawling, Gaming, Fudding & Drunkenness,
Thrice happy they, that ne'er such Counsel can.

Remember, Time will come when we shall give
Account to God, how we on Earth did live.

Some Men get Riches, yet are always poor;
Some get no Riches, yet have all Things store.

They that are Proud, and other Men disdain,
Do often meet with Hate and Scorn again.

Virtue is prais'd, but little practis'd by us;
So loose the Age, that few are truly Pious.

What's Humane Life? A Day, a Race, a Span,
A Point, a Bubble, Froth; So vain is Man.

Xenophilus did well in Health abide,
One hundred seven Years, and then he dy'd.

Young Men take Pains, be brisk and I'll engage,
Your youthful Pains will Pleasure yield in Age.

Zaleucus made his Laws so strict that those,
Who were Adult'ers, both their Eyes shou'd lose.

The Sixth Alphabet.

A Time of Death there is, we know full well,
But when, or where, or how, no Man can tell.

Be welladvised, and wary Counsel take,

E'er thou dost any Actions undertake.

Chuse to be thankful for the Grace receiv'd,

And judge not those who seem thereof bereav'd.

Defend the Truth, for that, who will not die,

A Coward is, and gives himself the Lye.

Ever thy Credit keep, 'tis quickly gone,
Being got by many Actions, lost by one.
Fly Sin, therefore, live godly still.

Then welcome Death, let it come when it will,
Good Counsel from a Servant do not flight,

Scorn no Man's Judgment, so that it be right.
How peaceful is the Man, and how secure,

Whom War did ne'er delight, or Gain allure?
In all your Actions take care so to live,

That no occasion of Offence you give.
Keep me, dear God, that to my Heart, and Tongue,
May never do my Neighbour any wrong.

Lord give me Wisdom to direct my ways,
I beg not Riches, nor yet length of Days.

Men's Follies make them frequently to Err,
And then they Vice to Virtue do prefer.

Nor sin, for it will, in the end, procure,
Those Pains, which will beyond all time endure,
Our Neighbour's Love we truly ought to hold,
More dearer to us than the finest Gold.

Practice thine Art, tho' thou it understand,
As Care by Wit, so Use is help'd by th' Hand,
Quarrelsome Nature's meet their unkind Kind,
And commonly what such Men seek they find.

Rather depend upon your Fingers ends,
Than fix your Expectations on your Friends.
Suffering for Sin should breed no Discontent,
Since many have prov'd good by Chastisement.

The early chirping Sparrows may reprove,
Such lazy Scholars as their Beds do love.

Valiant he does approve himself and Wife,
Who with a Carriage meek flights Injuries,
What Stock thy Friends, by Will, hath left to thee.
Keep and encrease, lest thou a By-Word be.

'Xamine

Examine thy Ways, lest thou too late complain,
For there's a Time when Tears will be in vain.
You're in a very great Degree to blame,
Who do profanely take God's Name in vain.
Zeal for God is good, if with Grace conjoyn'd,
If not, a Fire that's void of Light or Blind.

The Seventh Alphabet.

A Man, that doth on Riches set his Mind,
Strives to take hold on shadows and the Wind,
With Food and Raiment then contented be;
Ask not for Riches, nor for Poverty.

Balaam desires this mortal Life to leave
With Comforts, such as righteous Men receive:
A noble wish, but something's understood:
To die like those, our Life must first be good.

Crazy, weak Mortal, tell me, why dost fear,
To leave this lower, earthly Hemisphere?
Where all Delights and Joys away do pass,
Like thy Effigies viewed in a Glass.

During the time of Life allotted me,
Grant me, good God, my Health and Liberty.
I beg no more; if more thou'rt pleas'd to give,
I'll thankfully the Overplus receive.

Exonerate your Mind of worldly Cares;
Spend each Lord's Day in spiritual Affairs;
Such wretched Souls, as squander that away,
Repent it sorely at their dying Day.

Fear not their Might, which only Bodies kill,
But on the Soul cannot effect their Will.
Fear that great God, can Soul and Body take,
And cast e'm both into th' Infernal Lake.

Gay dainty Flowers go swiftly to decay,
 Poor, wretched, Life's short Portion flies away.
 We Eat, we Drink, we Sleep; but lo, anon,
 Old Age steals on us never thought upon.

He that defers to learn from Day to Day,
 Doth on a River's Bank expecting stay,
 Till that whole Stream, which stopt him shall be
 [gone

Which runs, and still for ever will run on.

If you desire to worship God aright,
 First in the Morning, and then last at Night;
 Crave for his Blessing on your Labours all,
 And in Distress for his Assistance call,

Knowledge of Things mysterious and divine,
 Illustriously in learned Men doth shine:
 But many Truths are from us now conceal'd,
 That in a future State shall be reveal'd:

Lord of this lower World frail Man was made,
 The Creatures all to him their Homage paid.
 But when for Sin God did him once condemn,
 He's neither Master of himself, nor them.

Make much of precious Time, while in your
 [Power;

Be careful well to Husband every Hour:
 For Time will come, when you shall sore lament
 Th' unhappy Minutes, that you have mispent.

No Tongue can speak, no Pen can well express
 The Punishments prepar'd for Wickedness;
 The quickest Thoughts by no means can conceive,
 What they shall suffer who ungodly live.

Observe the wicked and malicious Man,
 Projecting all the Mischief that he can;
 When common Policy will not prevail,
 He'll rather venture Soul and all, than fail.

Prithce.

Prithee, Tom fool, Why wilt thou meddling be,
In other's Business which concerns not thee?
For while thereon thou dost extend thy Cares,
Thou dost at Home neglect thy own Affairs.

Questions may be propounded by a Fool,
That no wise Man can answer, for his Soul.
But he that wou'd converse with Men of Sense,
Must lay aside such base Impertinence.

Return the Kindness that you do receive,
As far as your Ability gives leave.
Nothing is more unmannerly and rude,
Than that vile Temper of Ingratitude.

See how the Lillies flourish white and fair,
See, how the Ravens fed from Heaven are;
Then ne'er distrust thy God for Clôth and Bread,
Whilst Lillies flourish, and the Ravens fed.

The Ant against cold Winter wisely hoards
Provision, which the Summer's Wealth affords:
Reading a silent Lesson to Mankind,
That they in Diligence be not behind,

Vain Miseries strive to heap up Riches store,
And in the midst of Plenty still are poor.
What senseless Madness does still their Souls bewitch,
Thus poor to live in Hopes of dying rich?

What signifies it that you Learning gain,
And unto *Greek* and *Latin* doth attain,
If you do want true Virtue of the Mind,
The only Ornament of all Mankind.

Xerxes survey'd his mighty Host with Tears,
To think they'd die within a Hundred Years;
But by his own ill Management, we see,
They're all destroy'd, and dead in less than three.

You'll mend your Life to Morrow still you cry,
In what far Country does the Morrow lie?

It stays so long, 'tis fetch'd so far, I fear,
'Twill be both very old, and very dear.

Zachens short of Stature tain would see
His Saviour pass, and climbs into a Tree.
If we by Faith would see this glorious King.
Our Thoughts must mount on Contemplation's Wing.

The Eighth Alphabet.

AS by Degrees ill Customs have been taken,
So by Degrees the worst may be forsaken.
By frequent Use, Experience gains her growth,
But Knowledge flies from Laziness and Sloth.
Chuse them not Sin, touch not forbidden Things,
Nor taste those Joys which endless Sorrow brings;
Desire not any Thing that is unjust;
Of those that Credit you, ne'er break your Trust,
Even whom Men's Crimes pull God's Judgments down.
'Tis rather Grief than Anger makes him frown.
Firm keep thy mind on things that are above,
Exact on no Man but thy Neighbours Love.
Give at once Asking what you safely can,
It's part of Gains to help an Honest Man.
He that in Morals walks not faithfully,
No Marvel 'tis if Christ doth pass him by.
If Breathing were for every one to buy,
The Poor they could not live, nor the Rich die.
Know thy self first, and then begin to scan
The imperfections of another Man.
Let me be just to all, tho' I sustain
Some Loss thereby, that Loss will turn to Gain.

*Man's Work it is to have a serious Sight
Of his own Sins, and judge himself aright.
No Tyrant Passion rages in my Breast;
But the meek Dove builds there her peaceful Nest.
O happy he, to whom the Bounty of Heaven
Sufficient, with a sparing Hand hath given.
Prepare to die before your Glass is run,
Repent sincerely, lest you cry, Undone.
Quit the World's Stage you must, when your part's
[play'd,
Get Earnest betimes for a better laid.
Reprove none rashly, for not even the best,
Can Humane Nature of her Faults divest.
Serve God that made you, whilst you have Breath,
Honour your Parents dear until their death.
Thy Parents Love, the one as well as other,
To please thy Father, do not grieve thy Mother.
Unto your Sense, this Sentence still apply,
That there's no Poison like bad Company.
When Things go well, Adversity beware;
Again, when Things go ill, do not despair.
Examine, try, prove thy self to know,
Whether God's Fear be in thy Heart or no.
Youth, unto Christ's Precepts firmly abide,
And truly love all Souls for whom he dy'd.
Zeal is a Fire, and useful in its kind,
But nothing is more dangerous, if blind.*

The Ninth Alphabet.

Afflictions are a Rod, to scourge us Home;
A painful Earnest of a Heaven to come.

64. *The Young Man's Companion.*

Be early season'd with the Taste of Truth,
Remember thy Creator in thy Youth.
Create in me a new Heart; Great God inspire
My cold Affections, with thy Holy Fire.
Dear God, it matters not what my Troubles be.
May they but lead, or whip me Home to thee.
Estates to gain, Men toil and break their Rest,
But Competency, with Content, is best.
Fear timely comes, before a Faults begun,
He fears too late, that fears not 'till 'tis done.
God's Register, the Conscience, notes down all
Our Actions, just and unjust, great and small.
His ripe Discretion always is in Season,
That can his Passion ballance with his Reason.
If Sin's not out of thy Affections cast,
Thou wilt be found a Hypocrite at last.
King Jesus waken Men in these drowsy Times,
Lest Vengeance find them sleeping in their
[Crimes.
Lord, how can Sinners thy strict Bar abide,
Where, ev'n the Righteous scarce are Justify'd?
Many there are that covet Worldly Pelf,
But very few that seek Soul saving Health,
Nature's Supplies will no Time fail to thee,
If thou with needful Things contented be.
Observe with Silence what each Man doth say,
Speech doth Men's Matters hide, and them be-
[tray
Perform thy Promise, keep within Faith's Bounds,
Who breaks his Word, his Reputation wounds.
Quench soon the Flame of Lust, and have a Care
Of wanton Women, they will prove a Snare.
Reprove not in their Wrath, incensed Men;
Good Counsel comes quite out of Season then.
Sure

Sure is that Knot, that true Religion ties;
And Love that's rightly ground'd never dies.
The Miser is a Fool, and so is he
That spends his Wealth in Prodigality.
Vain Men for this World's Riches are at Strife,
Neglecting those of Everlasting Life.
When thou liv'st well, mind not what lewd Folks
[say.
It is not in our Pow'r their Tongues to sway,
Examine at Night thy Actions of the Day,
With Grace, that down in Peace thy Head may
[lay.
Youth to be afraid to die, or wish for Death,
Are Words and Passions of Despairing Breath.
Zeal for a publick Good with Men is rare,
But 'tis Self-Interest, that's their chiefest Care.

The Tenth Alphabet.

A Theists think Hell a Fable, a feigned Name.
And are so Faithless 'till they feel the Flame.
Beg help of thy known Friend, in any Grief;
No Doctor, like a Friend can give Relief.
Cease then, my Soul, to dote on, or Admire
This splendid World, which is reserv'd for Fire.
Defend me from the World, the Flesh, and Devil,
For these, O Lord, draw most Men into Evil.
Ev'ry swift winged Moment of the Day,
Carries some Length of our short Time away.
For Vertue's sake, now in thy Youthful Prime,
Be a good Husband of thy precious Time.
Gaudy Attire never affects my mind,
They meet with no Admirers but the Blind.
Happy's

Happy's that Man that is content alone,
 And needs no Entertainment but his own.
 If you esteem a noble Reputation,
 With Sons of Vertue have your Conversation.
 Knock hard at Mercy's Gate, and think no Pains,
 Too hard, nor Time too long, for such blest'd
 (Gains.

Let me, O Christ, for ever fix mine Eyes,
 Upon the Merit of thy Sacrifice.
 My blest'd Redeemer, so my Heart incline,
 That I may always keep the Laws of thine.
 None should think that Man, in any Time or Place,
 Is far from Ending of his Mortal Race.
 Omit no Time, but with all speed amend,
 The longer thou dost live, the nearer to thy End.
 Practice you should, and study still,
 Tho' in some Arts you have gain'd Skill.
 Quicken my Soul, O Lord, to live here so,
 That I my Duty more and more may know.
 Rather than be quite broke, wisely submit and bend,
 'Tis Folly with the Mighty to contend.
 Small Friendship, less Reality is found,
 Where fawning, feigning Complements abound.
 Truly those noble Souls are nobly free,
 That can deny themselves their Liberty.
 Vain Pleasures are but as a Golden Dream,
 Which waking, makes our Wants the more ex-
 (tream.
 What Nation soever in which we live or die,
 God is the same, and Heav'n is there as nigh.
 'Xperience tells us, if we will amend,
 Living here well, shall make a happy End.
 Yesterday's past, to Morrow's none of thine,
 To Day thy Life to Vertuous Deeds incline.

Zeal

Zeal for God's Laws will never wanting be,
If thou always to them Obedient be.

Copies in Prose.

The First Alphabet.

A Wise Man valueth Content more than Riches,
and a vertuous Mind rather than great Promotion.

By prudent Deportment, pertinent Expressions, and commendable Actions, Riches and Reputation are acquired.

Courage is the Champion of Justice, and never ought to contend but in vertuous and commendable Actions.

Diversity of Opinions in matters of Religion, commonly is the ground of a civil War, and Ambition its Support.

Excommunicate all manner of vain Imaginations, and evermore run in the Way of the divine Commandments.

Fame gotten by Vertue and Honesty, ought carefully to be kept, it being a Jewel of an inestimable value.

Good, vertuous, and commendable Examples, cannot too often be repeated, if we have a design to profit by them.

He that laboureth to instruct the Mind with valuable Qualities, will purchase Praise with Men, and Favour with God.

It is more Commendation for a vertuous Man to be Silent, than to make repetition of his worthy Performances.

Knowledge is of such an excellent Quality, that
the

the more a Man knoweth, the more his desire thereof increaseth.

Learning is the Temperance of Youth, the Comfort of old Age, and the only sure Guide to Honour and Preferment.

Men that are Covetous, make it their study to heap up Wealth, and only to please their Fancy starve their Bellies.

Nothing more safe for a Prince than his Subjects Love; nothing better in Subjects than Obedience to their Prince.

Opinion, and the desire of lasting Fame, spurs on the Ingenious mind, and makes the greatest Difficulties delightful.

Preserve carefully your Reputation; if that be once lost, you are like a cancel'd Writing, of no value.

Quietness and Peace flourishes where Reason and Justice govern, and true Joy reigneth where Modesty directeth.

Rude and morose Behaviour in Conversation, is as absurd as a round Quadrangle in the Mathematicks.

Sound not the vain Trumpet of self Commendation, and forget not to remember your own Imperfections.

The Labour of the Hand, in this kind, is not only delightful to the Eye, but profitable and pleasant to the Mind.

Vertue is an Adamantine Mountain, and Invincible Fortrefs, whereon her valiant Heroes stand secure.

When foolish Complements, and soppy Ceremonies were less in Fashion, Vertue and Honesty were more in Estimation,

Xenocrates

Xenocrates was of so dull a Capacity that *Plato* said *Aristotle* had need of a Bridle, but *Xenocrates* a Spur.

Youth should not only embrace the Instructions of the Aged, but imitate their Virtues and shun their Vices.

Zeno of all Virtues made choice of Silence, for thereby he saw others Imperfections and conceal'd his own.

The Second Alphabet.

A Beautiful Countenance is a silent Commendation,
And a fair piece of Writing a speaking Picture.

Beauty without Virtue is like a painted Sepulchre,
fair without, but within full of Corruption.

Contentment is a Gem of the highest esteem, not purchas'd by Wealth, but by acquired by Virtue.

Disdain not thy Inferior in the Gifts of Fortune, for he may be thy Superior in the Gifts of the Mind.

Entertain Honour with Humility, Poverty with Patience, your Blessings with thankfulness, and your Afflictions with Resignation,

Fame is the attendant of Virtue, and Virtue is the forerunner of Happiness here, and Blessedness hereafter.

Get what you get honestly, use what you get frugally, and that's the way to live comfortably, and dye honourably.

Humility is the forerunner of Advancement, and Honour and Ambition the Harbinger of Destruction and Ruin.

Inveigh not against Fate, nor repine at Providence

dence, but wisely Examine and Correct thy own Negligence.

Keep a Mien in all thy Actions, lest Excess in any keep the mean and poor in all.

Let a good End be the beginning of all thy Undertakings, and such beginnings may reasonably expect a good End.

Many are the Misfortunes of Man's Life, which he must either prevent by Wisdom, or suffer with Patience.

No Man wise at all Times, nor knowing in all Things, wherefore we mistake in most Things.

Omit no Opportunity of doing Good, and you will find no Opportunity for doing Ill.

Praise nothing but what's worthy of Commendation, so shall thy Judgment be approved and honestly applauded.

Quantity is not equivalent with Quality, for in Quality lies either the Defect or Excellency.

Remember to requite, at least to own Kindnesses, lest thy Ingratitude prove a considerable Diskindness.

Some poor Men are under-valued, because worth nothing, and some Rich Men over-valued, tho' nothing worth.

The loss of Wealth may be regained, of Health recovered, but the loss of precious Time can never be recalled.

Vanity, of Vanity said Solomon, who was a Wise Man, and in Time no doubt we shall become *all Solomons*.

Would'st thou be Rich, be Diligent, Honourable, be Humble, Wise, be Good, Happy, be thou Content.

Xenophon, and the rest of the Philosophers, esteem Wisdom the greatest Wealth, and Content the highest Bliss.

Youth should enterprize nothing without the advice of Age: Tho' Youth is most fit for Action, yet Age is fittest to Counsel.

Zeal not rightly directed is pernicious. For as it makes a good Cause better, so it makes a bad Cause worse.

Learn to overcome thy self in all things; for the Love of thy Creator, and then thou shalt be able to attain to divine Knowledge.

If thou spend the Day profitably, thou wilt have cause to rejoyce in the Evening.

Simple Obedience is to be preferred before all Worldly Wisdom.

The Glory of a Good Man is the Testimony of a good Conscience; have that, and thou wilt have inward Peace in the midst of many Troubles.

To do always well, and to have low Thoughts of thy self, is a sign of a humble Soul.

They that follow Sensuality, stain their own Consciences, and lose the favour of God.

Withdraw thy self violently from That, to which Nature is viciously inclined.

They that avoid not small Faults, by little and little, fall into greater.

They that live at Liberty and Ease, shall ever live in Disquiet.

True quietness of Heart is got by resisting our Passions, not by obeying them.

Remember always thy End, and how that lost Time never returns.

If we engage into a large Acquaintance, and
various

various Familiarity, we set open our Gates to the Invaders of most of our Time.

Visits made or received, are usually an intolerable consumption of Time, unless prudently order'd; and they are for the most part spent in vain and impertinent Discourses.

Time fruitlessly pass'd away, will in the end cause an aking Heart.

Defile not thy Mouth with Swearing; neither use thy self to the naming of the Holy One.

Let the Name of God be sparing in your Mouth, but abundantly in your Heart.

The *Jews* of old, accounted the Name *Jehovah* so Sacred, that they durst not utter it; the High-Priest alone, and that in the Temple only, but once in the Year at their Solemn Feast, while he blessed the People, might have leave to mention it, for others it was Death.

It is a mark of Folly and ill Nature to hate Reproof, and far from his Mind that said;— *If the Righteous smite me, it shall be a kindness; and let him reprove me, it shall be an excellent Oyl.*

Sin and Sorrow are inseparable Companions; thou canst not let in the one, and shut out the other; he that swims in Sin, must sink in Sorrow.

Worship God; reverence thy Parents; know thy Self; in Child-hood be Modest; in Youth Temperate; in Man-hood Just; and in Old Age Prudent, that thou mayst die untroubled.

Here I end the many Copy-Lines in *Prose* and *Verse*, for the *Young Men*, which I also recommend to the *Young Women*, that delight as the Prophet *David* declareth, *Psalms* 1. verse 2. *In the Law of the Lord, and in his Law doth meditate Day and Night.*

Why doth the Prophet (saith Basil) pronounce only the Man Blessed? Hath he excluded the Women from this Blessedness? God forbid. Their Virtue is the same as their Creation was equal, and the Reward shall be alike to both.

Therefore a young Woman has as much need of meditating in God's Law as a young Man.

Else why did the Prophet *Isaiah* say, Tremble ye Women that are at Ease: Be troubled ye careless ones, *Isaiah* 23. 11. And Holy *David* saith, That our Sons may grow up as the young Plants: And that our Daughters may be as polished Corners of the Temple, *Psalms* 144. 12.

Directions to the Beginners to learn to Write.

1. **W**ash your Hands always before you come to School.

2. Provide Pen, Ink and Paper, a round Ruler. and a piece of Lead to rule Lines to write on.

3. Get a Friend to shew you how to begin the small Letters, and to be very perfect in writing them, before you go into Joining-Hand, and to write Joining-Hand very well, before you write Great Letters.

4. Knowing where to begin a Letter, trace over, with a dry Pen, the Letters in the printed Copies following, many Times.

5. To make the Paper bear Ink well, and the Pen run the smoother, rub the Paper with the fine Powder of *Gum sandrick*, tied in a Rag; and when you scratch out a Word with the point of a Pen-knife.

knife, rub it with *Gum*, and smooth it with the Knife Haft before you write a Word there.

6 Set all the small Letters of one height, and all the Letters alike, leaning towards the Right-Hand, viz. *a, e, c, i, m, n, o, r, s, u, w, x, z,*

7. Hold your Pen almost upright, not crushing it too hard between your Thumb and two Fingers, which has often caused the Cramp, And if your Hand shake, hold your Elbow close to your Side.

8. Always chuse the thinnest or whitest Ink while you are learning, now and then putting Water into your Inkhorn; for the right shaping a Letter is all in all.

9. Every Word you write, compare it your Copy; and tho' you are an Hour in writing six Lines, you'll the sooner learn to write well; for it's in vain to write quick, and not well.

10. Always before you put Pen to Paper, see there be no Hairs in the Pen; and if there be too much Ink in the Pen, cast it not away, (*as many do*) but dip the Pen into the Inkhorn again, and the Cotton will draw out the Ink.

11. Let not your Breast touch the Table, or Desk, on which you write; for leaning the Breast hard against the Edge of the Table, hath brought many Young Men into a Consumption.

12. When you have done writing, set the Nips of your Pens in Water, for the Copperas in the Ink will fret the Nibs; but it is better that they stand in the Inkhorn, than to dry on a Table.

13. After you have learnt to write tolerably well, carry your Books Home, and lay them and your Pens in one certain place in the House, for it may be, you may have mind to write, but you will lose that
good

good Desire, if your Instruments are in several Rooms; and it may be your Ink's become thick, and your Pen bad, then you'll lose more Time in going a begging to some Neighbour to mend your Pen, if your Master did not compel you (when at School) both to make and mend your Pen.

*Keep a choice Pen, free Ink, and steady Hand,
And that's the way fair Writing to command:
Great Gain flows daily to Ingenious Men,
From that admired Instrument the Pen.
Make much of every Moment of thy Time.
In Wisdom's School, this is the only Prime,*

How to make a Pen.

*Since Curious Letters, in a kind, Distil
From the rare Limbeck of a well cut Quill;
Learn first to make this useful Instrument,
Excelling Pens produce things Excellent.*

Take the first, second, or third Quills in the Wing of a Goose or Raven (those that are round, clip and clean, are the best) when you have scraped off the thin Rind thereof, with the back-edge of your Pen-knife; hold it in your Left-hand with the Feather-end from you, then enter the Knife in the back thereof sloping, and cut off as much in length as the Quill is in breadth, and answer that with another cut on the inside, like an opposite to the former; then turn the Quill, and enter the edge of your Pen-knife even in the

back thereof, and exactly in the midst of the half Round, neither inclining the Blade one way nor other, that the Slit may not be made awry. Then put in the Peg of your Knife Hilt, if it has one for that purpose, or the end of a whole Quill; and with a sudden twitch, force up the Slit, holding your left-hand Thumb hard upon the back of the Quill, to put a stop how far the Slit shall go. This being done, enter your Knife sloping in the other side about the Slit, about twice the breadth of the Quill, and cut away the Cradle-piece; then turn the Back upwards, and cut down to the end of the Slit, the Cheek or Shoulder-pieces, and in so doing, turn the Knife on both sides towards the Back. After this, place the inside of the end or Nib of the Pen, upon the Nail of your left-hand Thumb, holding the Quill fast between the fore-finger and middle-finger of that Hand. *Lastly*, To finish the Nib, enter the Edge of your Knife on the back, and near the end thereof sloping, and immediately turning the Edge almost down-right, cut it off.

There are four Considerations belonging to the Quill.

1. If the Quill be too hard, steep it a while in Water.
2. If it be too soft, harden it with Embers.
3. If it be too thick, pare a small quantity from the back of the Nib.
4. If it be too thin and weak, strengthen the Pen with a short Slit, a short Nib, and broad Shoulder.

*Proportion the Pens Nib to every Hand,
And its rare Motions learn to understand.*

Easy

Easy Copies to write by.

A a b c d e f g h i k l m n o p q r s t u v w x y z.
 A Beautyfull Countenance is a silent commen-
 dation,
 And a fair piece of Writing a speaking Picture.

A a b c d e f g h i k l m n o p q r s t u v w x y z &.
 Beauty without Virtue is like a painted Sepulchre;
 Fair without, but within full of Corruption.

Easie Copies to Write by.

A B C D E F G H I K L M
 Humility is the forerunner of Idleness, Poverty,
 and, finally, the Marking of Destruction and ruin.

N O P Q R S T U V W X Y Z.

Get what you get Honestly, use what you get Frugally;
 That's the way to live Comfortably, and dye Honourably.

How to Hold a Pen.

Hold the Pen in your Right hand, between your fore Finger, middle Finger and Thumb, with the Scope downwards. Place your Thumb, on the left side highest, bowing outward in the Joint. Extend your fore Finger almost straight on the right side, near the top of the Pen, about a quarter of an Inch further than the end of your Thumb, and near half an Inch from the Nib. Then place your middle Finger under the Pen on the right side, about a quarter of an Inch from the end of the Nib. *Lastly*, Place your third Finger over your little Finger drawn inward, and move your Hand on the little end as on its Center, and let the Pen rise up between the second and third Joint of your fore Finger. Now here accept of no less Observations in order to the Affair, *viz.* 1. Hold your Pen easily. 2. Move your Hand lightly. 3. Turn your Hand outward, or from you. 4. Draw your right Elbow as much toward your Body as conveniently you can.

How to sit to write.

A Fore right Line, or that which comes on the left Hand, is only fit to write by. Place your Body fairly even before the Desk or Board on which you write; whose best Position is to ascend somewhat from you. Bear your Head above the same at least the Distance of a Span, look straight forward, neither turning it on the one side nor

the other, lean not your Breast against the Desk whereon you Write. Stay the Paper with your left-hand as you Write. Keep a waste Paper under your Hand whereon to try your Pen, and to preserve that from blotting whereon you Write. To prevent spilling of Ink, put into your Inkhorn; but that will oblige you to view the Pens Nib often, for fear of Hairs.

*So much for the best Posture how to sit ;
The next concerns Accommodations fit.*

*A Pen-knife, Razor-Metal, Quills good store,
Gum Sandrick Powder to pounce o'er,
Ink shining black, Paper more white than Snow,
Round and Square Rulers on yourself bestow,
Small Compasses to Rule your double Lines,
Wax, Sand, and Black-Lead Pens for your Designs,
These, with a willing Mind, and ready Hand,
Will make this Art your Servant at command.*

How to make black Ink.

BEAT twelve Ounces of the whitest Dyers-Galls in a Mortar, till they are as small as Gun-Powder; put them into an Earthen Pot to five Quarts of Rain-Water, stirring them with a Stick once a Day, for ten Days; let it settle for three Days, and let the clear run thro' a Cloth, to which Liquor put six Ounces of the smallest shining Gum-Arabick, at about twelve Pence the Pound, four Ounces of the blewest Copperas; and one Ounce
of

of beaten Roach-Allum, stir it once a Day, keep it from freezing.

Thus you make a bigger or lesser Quantity.

Note, That it in *October* you soak a good Quantity of the green Peeling People taken from Wall-Nuts, in Rain-Water, and at the Month's End strain it, and use it with the same Ingredients, the Ink will be much better. *Note,* That if you boil the Water first, the Ink will not so soon Mould.

How to make Red Ink.

BOIL a Pennyworth of the Rasplings of Brazil-wood in Urine until the Water is Red, then put to it a Pennyworth of Cochineal beaten, and let it boil awhile. *Lastly,* Add a little Allum and strain it.

Note, But Red-Ink, for ordinary Use, may be made by dissolving a little Gum in Water, putting a little Vermilion to it, and put some into an Ink-horn with Cotton.

Note, Also you may make Ink of any Colour with Gum-Water, and the Colours mentioned in this Book.

To keep Ink from Freezing and Moulding.

PUT a few Drops of Brandy, or any other strong Spirits into it, and it will not Freeze in the hardest Winter that can happen: And in the Summer time, if you put Salt therein, it will keep it from Moulding,

*To write on Paper Gold Letters, called,
Shell-Gold.*

LA Y a little Leaf-Gold upon a fine Earthen Plate, and drop thereon a little clear Virgin's Honey, then work it up with your clean Knife's Haft, until it is stiff like unto a Paste, which put into an Oyster-shell, and do it close; when you are to write with it, put a little *Gum Water* on the side of the Gold, and mix a little thinly, fit for your Pen.

How to Write Secret Letters,

WRite your Mind on one side of the Paper with common Ink, and on the other side with Milk, that which you would have Secret, and when you would make the same Legible, hold that side which is written with Ink to the Fire, and the Milky Letters will shew Blewish, on the other side, and easy to Read.

Another Way.

RUle two Papers of one bigness with Lines of an equal-distance, cut full of square Holes, which being laid upon another Sheet of Paper you may write your Mind upon it through those Holes, and fill up the spaces with other Words, which ought to hang together in good Sense, to prevent suspicion. Each Person to whom you write, must have one of the cut Papers to read your Letters which shall be
sent

sent to him, and this way of Writing cannot be read by any else.

Another way.

YOU may first write a Letter, that may carry good Sense, to your Friend, but let the Lines be wide asunder: Then between these Lines write your Secret Letter, with Gall Water only, wherein the Galls have been infused but a little time; for if after you have written with it, there be any sensible Colour left on the Paper, you must throw away that Water, and make new; this being dry, and of one Colour with the Paper, will give no cause of suspicion, and the rather because the Letter purporteth a sufficient Sense already. Now for the discovery of it, you must dissolve some Coperas in fair Water, and with a fine Pencil, dipt in the Copperas-Water, you must moisten the Interlining of your Letter, and thereby you shall make it Legible. This is one of the most Secret Ways that I know, says Sir Hugh Plat, in his *Jewel-House of Art and Nature*, &c.

*How to Write both Black and Red Letters
at once, with the same Ink and Pen, and
upon the same Paper.*

PUT the quantity of a Hazel-Nut of *Litmoſe-blue*, to three Spoonfulls of Conduit-Water, wherein some *Gum-Arabick* is dissolved, and when it hath settled the space of an Hour, if you write therewith, you shall have perfect Blew Letters, and if you dip a Pencil in the Juice of Lemmons,
and

and do wet some part of the Paper therewith, and after let your Paper dry again, and then Write upon the place where the Juice of Lemmon was laid; with your Blue-Ink, the Letters will suddenly become Red, and in all the rest of the Paper the Letters will be Blue.

Letters upon several Occasions, very useful for a Young Man to Copy over: If he do,

1. **O**bserve how the Words are Spelled, to bear it in such Memory. *Secondly*, To write great Letters in such places as he finds them Printed. *Thirdly*, The Stops and Points. And *Lastly*, he may alter a Letter to answer his present Occasion.

Note, That a Letter of a piece of Paper, or a whole Sheet, is two Pence by the Post 80 Miles, or under, if carried above 80 Miles, three Pence: But if your Letter be of two pieces of Paper inclosed, it's double the Price Carriage. A Letter of an Ounce weight, is 8d. above 80 Miles, 1s. 'Tis said the Post goes 120 Miles in 24 Hours.

Note, by a New Act, a Letter of two Pence is three Pence Postage, &c.

*When Words we want; Loveth teacheth to Indite.
And what we blush to Speak, she bids us Write.*

*A Letter from a Scholar, inviting his Cousin
to betake himself to Learning.*

Dear Cousin,

TH E Kindness I have for you cannot be easily expressed ; and not only for your Person, but your future Happiness and Welfare, which you can secure no better Way, than by Learning ; it will prove a fast and faithful Friend to you, when those Friends you too fondly rely on may fail you.

Whereof, let me intreat you, not any longer to Trifle away your Time, in pursuing Things lighter than Vanity, but leaving those childish Extravagancies, betake yourself to your Book ; for certain, did you know what sweet Content and Pleasure I find in my Studies, you would not be long absent from me.

However, let me hear from you, and know how you stand affected in this Thing ; till then, I rest, in Expectation of an Answer, and am

Your very Loving Cousin,

April 9th 1722.

Adam True.

*A Son's Return of Thanks for Good Education.**Most kind Parents.*

I Am constrained, as an humble Acknowledgment of my Gratitude, often to trouble you with my Epistles, as being the only requital I am as yet capable of rendering you, for the many Benefits and Advantages I have received at your Hands: But above all, for your prudent Fore-sight, in bringing me to the Knowledge of those Things which have seasoned my Young Years with the Fear of God, and Variety of Understanding, and last will, past all peradventure, render me acceptable, on sundry Occasions, with God's Blessing; wherefore I must applaud that compelling Goodness in you, by which you even obliged me to persevere in Learning what I had begun; tho' then, indeed, not discerning what I should afterwards reap thereby, I imputed it to you as Harshness and Severity.

Therefore let mistaken Youth consider, that in their tender Age they (not knowing what is good and commendable) ought to submit to the mature Judgments of their Parents, who always, with Bowels of Love and Compassion, are studying their Welfare, tho' they perceive it not; and in this case what shall I say more, than returning all possible Thanks to you, who, next to the Love and Mercies of God, are the Authors of my Being and Well being, and ought to acknowledge my self,

*Your most Dutiful and Obedient Son,**May 8, 1722.**T. Turner.*

*A Letter from a Scholar to his Parents.**Dear Father and Mother,*

After my most humble Duty to you, and my true Love to my Brothers, and Sisters, and to my Uncle and Aunt, and Cousins, hoping you are all in good Health, as I and my Master, and the rest of his Family are at this present Time, (thanks be to God) these are to let you know, That I received your Letter, dated the 5th of this Instant *June*; for which, and also for the many Testimonies of your Love, I return you hearty Thanks; and hope that happy Progress already made in my Learning, may in the end, answer your careful Expectations, and in some measure requite all your Care and Tenderneſs towards me. I beg your Prayers to God for his Blessing on my weak Endeavours, that you, at length, may reap the Harvest of your Expectation, with Joy, and God have the Glory, to whose Protection I commit you, and remain

*June 20th 1722.**Your Dutiful Son,**Richard May.*

*If by fair Promises you Friends do gain,
Let fair Performances those Friends retain.*

Postscript.

Postscript.

Is only a Copy of my best Hand-Writing.
 Next, unto God, dear Parents, I address
 My self to you, in humble Thankfulness,
 For all your Care, and Charge on me bestow'd,
 The means of Learning unto me allow'd.
 Go on, I pray, and let me still pursue,
 Those Golden Arts the ~~Vulgar~~ never knew;

A Letter of Excuse to a Father and Mother.

Honoured Father and Mother,

TH E ill Report that you have heard of me, I suppose comes from some of my School-Fellows. who either envy my Happiness, or by aggravating my Faults, would be thought to seem less Criminal themselves; tho' I must confess, I have been too remiss in my Studies; but when I consider the Time and Credit I have lost thereby, the first being irrecoverable, my double Diligence for the future, I hope, will regain the last, that I may still subscribe my self

Your dutiful Son

May 24th 1722.

James Lowe.

To

To which I add some of my best Writing, which be pleased to accept of, unless I can write better.

*These, Honour'd Parents, are but small Effects
Of your true Love, and manifold Respects.
These few unpolish'd Lines cannot express
The thousandth Part of thy due Thankfulness
For your last Favours: yet, if these you grace
With Acceptation, I in Writing's Race
Shall run more swift by that Encouragement,
And in due Time some nobler Piece present.*

*A Letter from an Elder Brother to a Younger,
exhorting him to good Behaviour, and
seemly Carriage.*

Dear Brother,

I Thought fit, seeing you are arriv'd at sufficient Years of Discretion, to put you in mind that your childish Affairs ought now to be laid aside, and instead of them more serious Thoughts and Matters take Place, and so you may add to the Reputation of our Family, and gain to your self the good Esteem of being Vertuous, which is of great Value, and ought to be prized at no common Rate, as being the chiefeſt Ornament of Youth and Age.

Nor would I have you take this Admonition amiss, or altogether out of Humour, and consequently term it out of Season, but as the true Sense and cordial Desire of him that loves you, and wishes your Advancement and Welfare equal with

with his own ; coveting nothing more than to see you Thrive both in Wealth and Reputation: And so hoping this Advice will not be taken amiss, nor create any wrong Understanding between us, I take my Leave, and am

Your very Loving Brother,

June 28th 1722.

W. Philips.

Postscript.

But Young Men, when they first appear in the World, about Business, ought to have a particular Care what Company they keep; for their future Happiness, both Temporal and Eternal, depends very much on the Qualifications of those they converse with in Trading, &c.

Tho' such Young Men have received good Principles in their Education, by learning the Church of England Catechism, yet they want Practice to Confirm their Habits of Vertue, and Courage to Resist the Allurements of Vice and Error.

They are apt to catch at any Thing that indulges and countenances their youthful Fancies. The Misfortune is, when they want Prudence most, they have least of it. Therefore, 'tis happy when they will listen to the Advice of their Parents, or some experienced Relation, who is able to direct them in an Affair of such Consequences.

Otherwise they are apt to Sin, and by making themselves partake with other Mens Sins, make them their own; for by approving a wicked Thing, after it is acted, or inwardly delighting in it, and by appearing to praise it, makes a Man more Guilty than he that committed it; for

for that might be thro' strength of Temptation, and the Infirmary of Passion, the other is the Effects of Judgment and Consideration. Every Expression of Approbation, in proportion to its Degree, puts the approver into the Evil-doer's Case, and makes the Sin his own.

A Letter to a Friend.

Dear Friend,

I Was not a little glad, upon the perusal of your Letter of the 9th Instant, that you would be so kind at last, as to put it into my Power to do you any manner of Service, whereby I might more immediately signalize some Marks of true Friendship; nor indeed could you have required it at a more seasonable Time; wherefore, not to give you any Delay, I have sent by your Bearer what you desired, and shall always be glad to oblige you in this kind, as far as my Ability will extend. And so, with my hearty good Will towards you, and good Wishes for the Prosperity of your Affairs, I remain

Your unfeigned Friend,

June, 27th 1722.

Jasper Samm.

Post-

*Postscript.**True Friend,*

BEcause we may have Occasion to Write often to each other, I shall desire that you put in the Postscript of your Letters somewhat of News, or other Secrets, Written in one of those two ways of Writing which follow.

First, Put a Pennyworth of the Spirit of Vitriol in a Thumb Bottle, to which put half so much Spring Water; and Write with it, and when you hold it to the Fire, the Letters will appear Black, tho' no Writing before can be seen,

Or write in Transhad, which is but the changing of five or six Letters of the Alphabet, as for *o u d m* Read *e a r n*, and the contrary, and for *w, a a*. But I shall give one Example, as

*Moal palchuso Eliomts by Gifts; fel if yea tevas is
giao, choy aairr revro reao.*

a e o u l m n r n o e a r n m l.

Read thus,

Never purchase Friends by Gifts; for if you leave to Give, they will leave to Love.

*A Letter requiring the Payment of Money;
which serves as an Acquittance*

Friend and Chapman,

I Find, upon stating the Accounts between you and me, That several considerable Sums of Money are due to me from you; wherefore, having present occasion for Twenty Pounds, I desire you to send it me by the Bearer hereof, (or here name the Carrier) and in so doing, you will very much oblige me: For, indeed, I would not have given you this Trouble (at this Time) had not my Business been urgent.

As for the Payment thereof, this Letter, and the Bearer's Acquittance shall be your sufficient Security and Discharge for so much Money. In Witness whereof, I have hereunto set my Hand this 6th Day of May, 1722.

John Chapman.

An Answer to the last Letter.

Sir, or Loving Friend,

I Sent by the Bearer [or the Carrier] Twenty Pounds, according to your desire; and have taken his Acquittance for it; But, because you know I sent but for small Parcels of Goods at a time, therefore I desire you always, for the future, when I send you Money, that you mention in the Acquittances the Names of the Goods for which you receiv'd the Money, or, at least, I would have you to mention what Money remains unpaid; for

for, by certain knowledge, (for want of which) some poor Country Tradesmen have found great Loss either by the Masters or their Apprentices receiving the Money sent, never mentioning for what Goods: Pray take it not ill that I thus write, for I am satisfy'd of your honest Dealing; but know not the Servants you may intrust to receive the Money, I send in small Parcels. So with my Love to you, I rest, *Your Friend and Chapman.*

May 20th 1722.

W. Lovetruth.

A Letter of an Excuse from a Nephew to an Uncle.

Sir, [or Loving Uncle.]

I Received your Letter, and find by the Contents, that I have been represented to you, as one of the most wicked of Men. Indeed, I dare not go about to excuse all those Follies, and youthful Frailties, of which, in some measure, I have been guilty, tho', indeed, they have been aggravated by such as love me not, far beyond what they really were: But however, your Rebuke is not unseasonable, and the rather because I construe it as your good meaning, proceeding from the desire you have of my Welfare, which obliges me, if I have hitherto offended you in any thing, to beg your Pardon, and to give you my Promise, that for the future, I will make it my Study to Reform, and regain, by my Well-doing, (by God's Assistance) the Reputation I have lost by my doing otherwise; and so most Loving Uncle with my hearty Respects to you, and my Aunt and Cousins, I remain

Your most obliged Nephew.

R. M.

A

A Letter to a Friend, to desire him to endeavour to end a Difference.

Loving Cousin,

AFTER my Love to you, this is to let you know, that two of your Friends are about going to Law upon some small Occasions. I pray come over and see to reconcile them, or send your Advice how I may labour to do it, and I shall be very much obliged to you, and remain

Your Cousin, A. B.

The Answer with Advice.

My very Loving Cousin, A. B.

WITH my unfeigned Love to you, I receiv'd your Letter, and it grieves me to hear that our Friends, or any call'd Christians, should be for going to Law, and not compell'd to it, for then much Money is spent upon Lawyers, to end their Differences by Jury-Men, when two Friends may do it better.

Christ Jesus our Prince of Peace, bids us agree between ourselves, (*Mat. 18. 15*) St. Paul blames Christians that go to Law, (*1 Cor. 6. 8, 6, 7.*)

But if one of the Parties is for going to Law, and the other not, then he that is against going to Law is the most Christian, and is not to be blam'd, tho' he use the Law of the Nation to defend himself; neither, indeed, can he avoid it, if his Adversary seeks Revenge, and so force him to spend his Money in his Defence.

But you desiring my Advice about Reconciling those two Friends, they having not yet feed
Lawyers,

Lawyers, persuade the Man that is for going to Law, that two Friends chosen by both Parties may end their Differences, or one Person only.

And when they have Nominated two, to end it, then persuade the two Parties to put into the Hands of those Arbitrators 40s. a Piece, or more, according to the Value of the Trespass. This agreed on, next;

Let the Parties Sign and Seal general Releases to each other, then the Arbitrators must dispose of the Money as they see good to the Party that receiv'd the Wrong, &c.

Thus Differences among Friends may be compos'd at a much cheaper and better Rate than by Tryal at the Assizes.

But yet it's best, when contending Parties agree by themselves, as Christ Commands (*Mat. 18. 15.* and forgive Trespass, (*Mat. 6. 12.*)

Besides this having General Releases, it cuts off all former Differences, and saves from divers Expences, and from Bonds of Arbitration, and Awards, tho' they may cost above 10s. and often prove of none Effect: Therefore be Reconcil'd to thy Brother, (*Mat. 5. 28.*) If he Repent, forgive him: (*Luke 17. 3, 4.*)

I Pray God, the Advice above, of Reconciling Men at Difference, may take Effect in General, then would Peace flourish, &c.

I remain your Friend,

W. M.

*A Letter from an Apprentice, to his Friends
in the Country.*

Honoured Father and Mother,

AFTER my humble Duty presented to you both, This is to acquaint you, that the Bearer, George Stavely, coming to see me last Night, told me he was going this Morning to our Town, upon which I thought to take this Opportunity in a Line or two to let you know, that through the Goodness of God I am very well in Health, and like both my Master and Mistress, and my Trade also very well; and do intend, with God's Assistance, to use my utmost Endeavour to do every thing that belongs to it with that Niceness, that I may both please my Master, and answer your end in putting me out; which I presume was, that I might be in a Capacity to get my own Living, as I hope I shall. Pray remember my kind Love to my Brothers and Sisters, and to Aunt Nell, and my Cousin Joan; which being in haste, is all at present, with my Prayers to Almighty God for you, from

Your ever dutiful and obedient Son,

T. R.

F

A

*A Letter of Consolation to a Lady, on the
Death of her Brother.*

Madam,

ALtho' I cannot but acknowledge, that to be insensible under so great a Loss, as you have lately sustain'd in your dear Brother, wou'd be such a piece of Stupidity as cou'd by no means be justify'd, yet there is a vast deal of difference between being insensible, and falling into an Excess of Grief: To be sensible of God's afflicting Hand in such a Dispensation, and to humble ourselves under it, is what we ought to do; but to be inconsolable under such a Stroke, is as if we fell out with Heaven, instead of submitting to the Will of God: That you might not therefore, Madam, add Sin to your Affliction, by an immoderate Mourning for the Loss of your Brother; be pleas'd to consider, That you have no reason to mourn as those that have no Hope; his well known Piety and strict Vertue, both living and dying, removed all Fears on that account. Consider also that this excessive Grief is the only Product of Self-Love; you mourn your Loss, not his; for Death to him is Gain. And if the Bless'd above, know the Transactions of their Friends below, your Grief for him wou'd but impair his Happiness: Consider also, Madam, That all in him that was desirable and lovely was but an Emanation from the Fountain of all Blessedness; where all your Wants may always be supply'd: For God's an inexhaustible and over-flowing Fountain; and what wise Person wou'd grieve so much because the Stream's dry'd up, when there is a living Fountain open to repair to? Consider also, that
all

all your Tears are vain; for cou'd you weep the Ocean full, your Tears cou'd never bring him back; for Fate it self is not so fix'd as he. For not one Soul, since *Abel* first went hence, has return'd back to dwell on Earth again. Then dry your Tears up, Madam, and rejoyce; rejoyce that he has paid the Debt, that by the irrevocable Decree of Heaven, must first or last be paid by every Mortal. Rejoyce that he has shot the dismal Gulf, and landed safe on the celestial Shore: And that whilst here you're crying *Lachrimæ*, he's tuning there eternal *Hallelujahs*. Where, when you late shall follow him, that you may joyn in the same blessed Concert, shall be the daily Prayers of, Madam,

Your Cordial Friend and Servant,

W. W.

*A Letter from a Gentleman to a Gentlewoman
to beg Pardon for an Offence.*

Madam,

TIS in vain to contend with my Judge; and therefore, tho' I know my Fault has been aggravated beyond what it would justly bear; yet I will rather submit my self to your Sentence, than to go about to extenuate my Crime; I am guilty enough that I have offended you, tho' I never design'd it; and when you have done your self Justice, by inflicting upon me what you think I me-

rit for my Offence, then will I plead my Innocency, and let you know I always was so far from saying any thing that might reflect upon your Fame, that in my Opinion, not Innocence it self is more unspotted, nor can unfully'd Snow appear more white: 'Tis true, I am guilty to give you ground to think I have offended; but my Offence is not a Mistrortune, rather than my Fault; but, Madam, what if I appeal from your severer Justice to your Mercy; I know you're not inexorable, nor did you suck the Breasts of Wolves and Tygers; and since there's so much Sweetness in your Eyes; there needs must be some Pity in your Heart; at least so far as to forgive a poor repenting Criminal. And since you're such a bright Idea of the Author of all Goodness, you cannot, but like him, delight in shewing Mercy; and because nothing more engages, than shewing Mercy to a Criminal, I shall henceforth endeavour to be like *Cæsar's* Wife, not only free from Guilt, but from Suspicion: And further, shall to expiate my Offence, always remain

Your truly sorrowful

and much afflicted Servant,

T. L.

The Answer to the foregoing Letter.

I Received your Letter, and must let you know, That whatsoe're reflects upon my Fame (which is far dearer to me than my Life) tho' at the most remote distance, is what

what I can't but think a Fault; and therefore know not how you can be innocent; and indeed, to plead your Innocence, is to accuse me of Injustice, in charging you with a Crime; But from what you write, I am inclin'd to believe, that in what you said you design'd no Injury to me; and that it was a Crime of Inadvertence rather than of Malice. And for that Reason, upon your Profession of Repentance, I freely pardon you: But Charity itself does not enjoyn me to hug the Man I pardon in my Bosom: You must not expect therefore to be admitted to the former Freedoms you enjoy'd (since you have made so ill a Use of 'em) till you have given some more substantial Proofs of the Sincerity of your Repentance. And tho' I pardon this your first Offence, yet if you should relapse into your former Follies, you must expect a much severer Treatment: For then I shall no more esteem my self, as now I do,

Your reconciled Friend to serve you,

M. S.

A Letter from a Nephew to his Uncle.

Most kind and honoured Uncle,

THe many Obligations you have laid upon me compels me to lay my self at your Feet, and make you this Tender of my humblest Service; which, if you have an Opportunity, shall amount to more than Words; for I am ambitious to imitate you, and to make good my Words by correspon-

dent Actions. I am, in the mean time, cordially praying for your good Health and Happiness, expecting your Commands, which I will obey according to the utmost of my Power, and always remain,

Your truly humble

and obliged Nephew,

J. D.

The Uncle's Answer to his Nephew.

Kind Nephew,

I Received yours of the 12th Instant, and take the Expressions of your Kindness to come as gratefully as you intended 'em, Assuring you, that tho' I take well the Acknowledgments you may have made me in your Letter, and the Offers you insinuate of a Requital yet I neither expect nor desire it: But on the contrary, if at any time you will be so kind to let me know wherein I can serve you, none shall be more ready than,

Your loving and Affectionate Uncle,

B. L.

The Epistle of Agbarus, Prince of Edessa, one of the chief Cities of Mesopotamia, to our Saviour Christ Jesus, in these Words.

A Gbarus, Governour of Edessa, unto Jesus the good Saviour, shewing himself in Jerusalem, sendeth Greeting; I have heard of thee, and of thy Cures, which thou hast done without Medicines and Herbs
(for

(for as the Report goeth) thou makest the Blind to see, the
Lame to go, and the Lepers thou cleanse; foul Spirits
and Devils thou castest out, and long Diseased thou re-
storest to Health, and raised the Dead to Life: When
that I heard these Things of thee, I imagined with my
self of these two Things, either thou art a God come
from Heaven, and dost these Things, or the Son of God,
that bringeth these Things to pass: Wherefore, by these
my Letters, I beseech thee to take the pains to come un-
to me, and that thou wilt cure this my grievous Mala-
dy, wherewith I am sore vexed. I have heard more-
over, that the Jews murmur against thee, and go
about to mischief thee, I have here a little City, and an
honest, which will suffice us both.

Our Saviour Christ's Answer unto Agbarus.

AGbarus, blessed art thou, because thou hast believed
in me when thou sawest me not; for it is written of
me, That they which see me, shall not believe me,
that they which see me not, may believe and be
saved. Concerning that thou wrotest unto me, that I
should come to thee, I let thee understand, that all
Things touching my Message are here to be fulfilled;
and after the fulfils thereof, I am to return again to
him that sent me; but after my Ascension, I will send one
of my Disciples unto thee, which shall cure thy Malady,
and restore Life to thee, and them that be with thee.

After Christ's Ascension, Thaddæus one of his Dis-
ciples, was sent into those Parts. Agharus hearing
of him, sent for him, than Thaddæus, desired that
to Morrow the People might be called together, to

hear the Word preached; *Thaddæus* laid his Hand up-
on *Agbarus*, and said, *In the Name of the Lord Jesus*
I lay mine Hand upon thee, and forthwith cured him
of his Malady, and one *Abdus*, the Son of *Abdus*,
grieved with the Gout, (thus in brief.) When the
said Morning was come, *Agbarus* commanded his
Citizens to be gathered together, to hear *Thaddæus*;
which being ended, he charged Gold coyned and un-
coyned should be given to him, but he received it
not, saying, *Insomuch that we have forsaken our own,*
how can we receive other Mens.

These Things were done the 43d Year, and ta-
ken out of the Records of the City of *Edessa*, writ-
ten in *Syrian Tongue*; *Ferome* and *Eusebias* report the
same to have been, yet more at large, than herein
is expressed.

Subscriptions for Letters.

TO the King; or To his most Excellent Majesty; or
To his most Sacred Majesty *Charles the First*, King
of, &c.

To the Queen, or, To the Queen's most Excellent Ma-
jesty, *Anne*, by the Grace of God of Great-Britain, &c.
Queen,

To the Prince; or, To his Royal Highness; To the Prin-
cess, or, To her Royal Highness.

And in case of the Lords Spiritual, viz. To his
Grace the Lord Arch-Bishop of Canterbury; To the Most
Reverend Father in God, &c. If to the other Bishops,
To my Lord; or, To the Right Reverend Father in God,
&c. And to the Inferior Clergy; To the Reverend
Mr. A, &c. or, To the Reverend Doctor, &c.

To

To write to Temporal Lords, viz. To his Grace the
Duke of, &c.

To the Right Honourable the Marquis of H.

To the Right Honourable the Earl of S.

To the Right Honourable the Lord Viscount N.

To the Right Honourable the Lord B.

Nor ought Sons of the Nobility to be Dignified, tho' not in the immediate Heirs, with less than the Title of *Honourable*, as being their due by Birth-Right; and to a Knight and Baronet by Vertue of his Patent, the Title of *Honourable* and *Right Worshipful* is given. As likewise the latter to a Knight, and *Worshipful* to an Esquire.

Every Privy-Councillor, tho' not a Noble-Man, is stiled *Right Honourable*: All Ambassadors have the Stile of *Excellency*; as likewise has the Lord-Lieutenant of Ireland, and the Captain-General of His Majesty's Forces when in Being; nor has the Lord Mayor of London, during his Mayoralty, a less Title than *Right Honourable*, and the Sheriffs during that Office, are stiled *Right Worshipful*; nor does any thing less than the Title of *Esquire* extend to the Mayors of any Corporation; or at least *Worshipful Mr. Mayor*, for the Year of their Office.

Lastly, for the beginning of Letters.

TO the King; *Sir*, or, *May it please your Majesty*, and sometimes, *Sacred Sir*, *Dread Sir*, *Liege Lord*, &c.

To the Queen; *Madam*, or, *May it please your Majesty*, or, *Most Sacred Majesty*.

To the Prince; Sir, or, *May it please Your Royal Highness.*

To the Princess; *Madam, or, May it please Your Royal Highness.*

To a Duke; *My Lord. or May it please Your Grace.*

To a Dutches; *Madam, or, May it please Your Grace.*

To a Marquis; *My Lord, or May it please Your Lordship.*

To a Marchioness; *Madam, or, May it please Your Ladyship.*

To an Earl, or Viscount, or Baron; *Right Honourable, or, May it please your Lordship, Viscount found not the f.*

To a Countess, Viscountess, or Baroness; *Madam, or, Right Honourable, or, May it please Your Ladyship.*

To a Knight; Sir, or, *Right Worshipful; and to his Lady; Madam, or, May it please Your Ladyship.*

To a Mayor, Justice of Peace, Esquires, &c. Sir, or, *May it please your Worship.*

Let a Man be of a very great Office in the Nation, and shall dishonour the Holy Name of God, by *Cursing and Swearing prophane*, good Christians fear not to Rebuke him, as in the Prayers on St. John Baptist-Day.

“ A Nobleman, or Gentleman, (saith Dr. Bray)
 “ he be of what Rank or Qualification soever, must
 “ Renounce all that Honour which pretends to
 “ put him above the Laws of God or Man, and be-
 “ yond Reproof, or Punishment, when he has violated
 “ either. [His Lectures, p. 154.]

A form of a Will of a Man having no Children.

I *Thomas Man o' W.* in the County of *B.* Yeoman,
(being at this time in good and perfect Memory, thro' the Mercy of God) do make this my last Will and Testament in manner following, (that is to say) I do give unto my Cousin *G. M.* Twenty Pounds of Current *English* Money. I do give unto the poor Widows and Fatherless Children of *W.* aforesaid, Five Pounds of like Current Money. I do give and demise unto *S. W.* my Brother's Son, all that Cottage, or Tenement, situate in the Parish of *R.* in the said County of *B.* now in the Occupation of *G. S.* with the Close adjoining to him, the said *S. W.* his Heirs and Assigns.

This is a free Estate by Gift, and S. W. may Sell it. for ever. I do give unto *S. M.* my loving Wife, all the rest of my Goods and Chattels, & personal Estate whatsoever. Also I do give and demise unto *S.* my said Wife, and her Heirs,

all my other Lands and Tenements; lying in the Parish of *P.* in the County of *B.* and now in the several Occupations of *R. S.* and *J. S.* or their under Tenants. And also that Messuage, or Tenement, situate in the Parish of *St. Peter* in the said Town of *W.* and now in my own Occupation, together with the Orchard, and all other the Appurtenances thereto belonging. Lastly, I do make and constitute *S.* my said Wife, Executor of this my last Will and Testament, written with my own Hand this 2th day of *May*, in the Year of our Lord Christ, according to the *English* Account, One Thousand Seven Hundred and Ten.

*T. M.** *Note.*

Note, That a Man may give his Goods to any Person by Word-of-Mouth, before three Witnesses, (before his Death) provided that he is sure his Goods are not worth Five Pounds: But if above Five Pounds, then give them by Deed of Gift in Writing: Thus, [or by Will.]

A Deed of Gift of Goods.

TO all Christian People unto whom this present Writing shall come, I *A. B.* of, &c. sendeth Greeting, *Know ye,* That I, the said *A. B.* for divers good Causes, and valuable Considerations, me hereunto moving, *Have Given and Granted,* and by these Presents do Give, Grant, and Confirm unto *C. D.* of, &c. All, and Singular my Goods and Chattels, Household-Stuff. and all other my Substance whatsoever, in whose Hands, Custody, Possession, or Keeping soever, the same are in, or can, or may be found, *to Have and to Hold,* all and singular the said Goods, Chattels, and Household-Stuff whatsoever of me the said *A. B.* unto the said *C. D.* his Executors, Administrators, and Assigns, from henceforth to his and their own proper Use and Uses, thereof, and therewith to do, order, and dispose at his or their Wills and Pleasure, as of their own proper Goods and Chattels, free and peaceably, and quietly, without any manner of Let, Trouble, or Denial, of me the said *A. B.* or any other Person or Persons whatsoever: Of all which Premises I, the said *A. B.* have put the said *C. D.* in full and peaceable Possession by Virtue hereof; as also by the Gift and Delivery of Six-pence, in the Name of all the rest of the Premises. *In Witness whereof,* I the said *A. B.* have hereunto set

set my Hand and Seal the 21st of May, Anno Dom.
1727,

*Sealed and delivered (being
first legally Stampd) and
Possession given by the de-
livery of Sixpence, in the
Name of the rest of the
Premises, according to the
true meaning of these
Presents, in the Presence
of F. F. G. H.*

The Deed is not good (some say) if the Giver
useth the Goods: But may not the Goods be lent
him by the Giver?

*A Codicil, or Schedule to a Will, after a Will
is Seal'd.*

BE it known unto all Men by these Presents,
That I *A. B.* of, &c. Yeoman have made
and declared that my last Will and Testament in Wri-
ting, bearing Date, &c. I the said *A. B.* do by
these Presents, Codicil, Confirm, and Ratifie my
said last Will, and do give and bequeath unto *J.*
E. of, &c. the Sum of, &c. And my Will and
Meaning is, that this Codicil, or Schedule be
and be adjudged to be Part and Parcel of my said
Will and Testament, and that all Things therein
contained and mentioned, be faithfully performed
in as full and ample manner, in every Respect, as if
the same were so declared and set down in my said
Will. In Witness whereof, I the said *A. B.* have
hereunto.

hereunto set my Hand and Seal, the 21st Day of May, 1722.

Eccles. xxxiii. 18, 19. Give not thy Son and Wife, thy Brother and Friend, Power over thee whilst thou livest, and give not away thy Substance to another, lest it Repent thee, and thou intreat for it again: As long as thou livest, and hast Breath, give not thy self over to any Person, for better it is, that thy Children should pray unto thee.

Another Will.

IN the Name of God, Amen. I W. M. of, &c.
 an unworthy Member of the Church of England, being, thro' the Abundant Mercy and Goodness of God, tho' weak in Body, yet of a sound and perfect Understanding and Memory, do constitute this my Last Will and Testament, and desire it may be receiv'd by all as such; *Imprimis*, I most humbly bequeath my Soul to God, my Maker, beseeching his most gracious Acceptance of it, thro' the All-sufficient Merits and Mediation of my most Compassionate Redeemer *Jesus Christ*, who gave himself to be an Attonement for my Sins, and is able to save to the uttermost, all that come unto God by him, seeing he ever liveth to make Intercession for them, and who, I trust, will not reject me, a returning penitent Sinner, when I come to him for Mercy; in this Hope and Confidence I render up my Soul with Comfort, humbly beseeching the most blessed and glorious Tri-ty, One God most Holy, most Merciful and Gracious, to prepare me for the Time of my Dissolution, and then to take me to himself into that Peace, and Rest, and incomparable Felicity, which he has prepar'd for all that love and fear his holy Name, Amen, blessed be God.
 Amen.

Amen. I earnestly beg Pardon of any I have Offended ; and am ready to make Restitution if I have ignorantly Wronged any one, for I am sure I have not knowingly. And if any have Abus'd, or Injur'd me, I freely forgive it : And I profess my self to Die in the Faith of the Communion of the Church of *England*, the same Faith that is taught in the Holy Scripture, that was profess'd and maintain'd in the first and purest Ages of the Church, and seal'd with the Blood of vast Multitudes of Martyrs, and is contained in the Three Creeds now in Use amongst us ; and the most Primitive best Communion in the whole World : *Next*, I give my Body to the Earth, from whence it was taken, in full Assurance of its Resurrection from thence at the last Day : As for my Burial, I desire it may be Decent, without Pomp or State, at the Discretion of my dear Wife, and my Executors hereafter named, who, I doubt not, will manage it with all requisite Prudence. As to my Worldly Estate, I Will and positively Order, That all my Debts, which, to my Comfort, are but few and small, be paid out of Hand, If I don't live to pay them my self, for as I never lov'd to keep poor People out of their Money in my Life-time, as little will I allow it after my Death : To my dear and loving Wife *M.* with whom I have lived very happily, and with mutual Affection and Fidelity, for many Years. and by whom God has been pleas'd to give me several Children, most of whom are gone to Heaven before me. but whereof three are yet alive ; and I doubt not but that, she being a very good Woman, and a true and sincere Christian, Almighty God will according to his Promise, be a Husband unto her, and provide for her all Things necessary.

necessary for this Life, yet since he has blessed me with a convenient Portion of temporal Riches, to her I give, for Term of Life this House wherein I now dwell, with all the Furniture, and the Lands and Tenements that lie about it; and after her Death, to my only Son S. and his Heirs for ever; to whom I leave also, from the Time of my Death, my other two Estates situate in the Parish of N. he paying to each of his Sisters, C. and H. 1000*l*. And if he die before them, and without Issue, then his Land (all but the value of 1000*l*. which I freely empower him to dispose of as he shall think fit) shall descend, and belong equally to those my two Daughters. And I trust my dear Wife will be mindful to train them all up in the Nurture and Admonition of the Lord, as becomes a Wife, and tender truly Christian Parent, and who hopes to be eternally happy with them in a better State. My poor Debtors, who owe me some small Matters, which because they are in a low Condition, and not well able to pay them, I freely remit them all, forgiving such my Debts, as I desire God should forgive my Debts for Christ's sake. I Give 50*l*. to be distributed according to the Discretion of my Executors, among such of my Neighbours of this Parish as they shall apprehend to want some Assistance, but who do not receive Alms, nor have any Allowance from the Parish. I Give 20*l*. towards that good Work for teaching poor Children to Read, and to say their Catechism, in Charity-Schools. The small remainder of my Estate I give to my very good Friends, and dear and kind Relations, S. T. and H. M. to be divided equally between them: And do constitute them Executors of this my Last Will and Testament, and Trustees for my Wife and Children. *In Witness* whereof I have
hereunto

hereunto set my Hand and Seal the Third Day of May, in the Year of our Lord, 1727.

Witnesses, R. S.
G. A. F. O.

W. M. Here I take off my Seal and do declare this to be my Last Will and Testament.

Note, That if you have Occasion to write any Part of this Will, you must write the Words at length, and plain, without interlining any Words, but if you do interline a Word or two, set it under that which the Witnesses are to set their Hands to, thus,

The Words [give done] first interlin'd.

Note, That in the Office for the Visitation of the Sick, the Church adds this Rubrick, If he have not before disposed of his Goods, let him then be admonished to make his Will, and declare his Debts, what he Oweth, and what is owing to him, for the better discharging of his Conscience, and the Quietness of his Executors. And moreover, that Men should be put in Remembrance to take Order for the Settling of their Temporal Estates while they are in Health.

Note Further, it would be happy for England, if doubting Christians, that have any Scruple of Conscience, concerning their Salvation, or of the Church of England; would apply themselves to the Minister of the Parish, who, no doubt, can satisfy all their Doubts by Scripture Proofs.

Another Will.

IN the Name of God, Amen. I M. P. of, &c.
being in perfect Health, (praised be God) do make this my last Will and Testament as followeth,

eth; *Imprimis*, I give to my Daughter N. P. Ten Pounds, of, &c. *Item*, I give to my Daughter; R. P. One Hundred Pounds of like lawful Money, and the Trunk in the Chamber where I lie, marked [W. N.] and all the Linnen therein, with some other Goods, and all the Rest and Residue of my Goods and Chattels, and Personal Estate, after Payment of my Debts, Legacies, and Funeral Expences. And unto my Son T. P. whom I make sole Executor of this my last Will and Testament, I give, demise, and bequeath to him and his Heirs, all, and every my Messuages, Lands, Tenements, and Hereditaments whatsoever, and wheresoever, which I also charge with the Payment of my said Legacies. In Witness whereof, I have hereunto set my Hand and Seal the 19th Day of June, Anno Dom, 1722.

*Sealed, Published, and Declared
by the above named N P. for
and his last Will and Testa-
ment, in the Presence of us,
N. O. R. W. G. H.*

 *Note*, That the Party who Signs, and Seals this Will, is to do it in the Presence of Three Witnesses, who are to set their Hands, (not under three) and it is not much matter whether the Witnesses hear the Will read or no, so as they hear the Party say he acknowledgeth that Writing to be his Will; to which he sets his Hand and Seal; for if they did hear it read, it cannot be supposed that they can remember the Contents thereof. A Man above Fourteen Years of Age may make a Will of his Goods; and a Woman about Twelve; but neither can
Will

Will their Lands until Twenty One Years.

If a Man dies without a Will, and leaves both Free-Lands and Goods, his Wife will have the third Part of the Profits of the Land, during her Life, and one third Part of the Goods for ever; and the next akin to the Husband the other two third Parts. But he that makes a Will, and leaves his Wife a certain Sum to be paid her Yearly, during her Life, by his Executor, should also give also some of his moveable Goods.

If a Man dies without a Will Signed and Sealed, leaving many Children, the Eldest Son claims all the Land, but if he leaves Daughters only, they will be Co-heirs to all Free-Land.

Copy-hold Land is not given by Will, but pass'd by Surrender in Court.

Wills by Word-of-Mouth, called *Noncupative Wills*, is not good to pass Free-hold Land; but for Goods or Lease-hold Land, it often passeth the Court for good, if under 30*l.* Value, the Court Writing one from the Mouths of three or four Witnesses, and they to give Oath to it, and put it in Writing within six Months after the Party's Decease.

To Will Lands to *A. B.* for ever; or to *A. B.* and his Assigns, this is but for Life; but I give and demise unto *A. B.* his Heirs and Assigns for ever, so *A. B.* may sell it.

The Word Executor, is the Name given to him that is to see the Will perform'd: Some Men refuse to Act, tho' named in a Will, as Executor, because their Consent was not first ask'd; but if a Woman, she is called in the Will Executrix.

A Soldier in actual War, that Dies, may leave
two

two Will, and both good ; but to one that is secure in some Castle, or Garrison. Vide *Godolphine*, Fol. 70. 71.

☞ Set your House in Order while you are in Health, he that hath not a House to Will, yet hath a Soul ; No Soul can want Affairs to set in order while Life and Health is. ——— *For a [Will] Testament is of Force after Men are Dead, Heb. 9. 17. but not before.*

For if a Man hath Seal'd his Will, and deliver'd it to a Friend to keep, he may make another, which makes the other Will void.

‘ If thou givest all thy Estate [to the Poor] and
‘ dost not forsake thy Sins, thou wilt be twice de-
‘ ceiv'd losing both thy Money and thy Pardon
‘ also, [St. Aug. *Hm* 2 d. p. 50, See also *Occasig-
nal Offices*, by Dr. Comber, p. 305.]

An Umpirage.

TO all People whom these Presents may con-
cern, I O. C. Citizen and Mercer of London.
Umpire indifferently chosen by F.W. &c. and T. C.
of, &c. having deliberately heard and understood
the Allegations and Proofs of both the said Parties;
and willing, as much as in me lieth, to set the said
Parties at Unity and good Accord ; do by these Pre-
sents Arbitrate, Award, Order and Judge as follow-
eth . viz. That the said F. W. Executors, Ad-
ministrators and Assigns, shall well and truly pay,
or cause to be paid unto the said T. C. his Execu-
tors or Assigns, the full Sum of, &c. of lawful Mo-
ney of *Great-Britain*, on or before the tenth Day
of, &c. next ensuing the Date hereof, and that up-
on the Paying thereof, the said F. W. and T. C.
shall

shall in due Form of Law execute unto each other a General Release of all Action and Actions, and Causes of Actions, Suits, Bonds, Bills, Covenants, Controversies and Demands whatsoever, which either of them hath, may, might, or in any wise ought to have, of and against the other of them, by reason or means of any Matters, Cause or thing whatever, from the beginning of the World, until the Day of the Date hereof. In Witness, &c.

The Form of Letter of Attorney.

Now all Men by these Presents, That I J. R. of B. in the County of B. Yeoman, for divers good Causes and Considerations, me hereunto moving, have made, ordain'd, constituted and appointed, and by these Presents, do make, ordain, constitute and appoint my trusty Friend W. G. of L. Gent. my true and lawful Attorney, for me, in my Name, and to my Use, to ask, demand, recover and receive of and from A. C. of &c, the Sum of, &c. Giving, and by these Presents granting to my said Attorney, my sole and full Power, and Authority, to take, pursue and follow such legal courses for the Recovery, receiving and obtaining of the same, as I my self might or could do were I personally present; and upon the receipt of the same, Acquittances, or other sufficient Discharges at me, and my Name, to make sign, seal and deliver: As also one or more Attorney or Attorneys under him to substitute and appoint, and again at my Pleasure to revoke; and further to do, perform and finish for me, and in my Name, all and singular things, which shall or may be necessary, touching and concerning the Premises, as fully, throughly,

thoroughly, and entirely, as I the said J. R. in my own Person might, or cou'd do in or about the same Ratifying, allowing, and confirming whatsoever my said Attorney shall lawfully do, or cause to be done in and about the Execution of the Premises, by Virtue of these Presents. In Witness whereof, I have hereunto set my Hand and Seal, the 10th Day of *August*, in the second Year of the Reign of our Sovereign Lord GEORGE, by the Grace of God King of *Great-Britain*, &c. and in the Year of our Lord God, 1719.

The Form of a Revocation of a Letter of Attorney.

K Now all Men by these Presents, That whereas I H. R. of H. in the County of G. Yeoman upon the Trust and Confidence which I had in J. G. of, &c. Gent. by Letter of Attorney, under my Hand and Seal, bearing Date, &c. did make, ordain constitute, and appoint the said J. G. my lawful Attorney, for me, and in my Name, and to my Use to ask, demand, recover, and receive, of and from W. W. of &c. Salter, the Sum of &c. as thereby more at large may appear: Now know ye, That I the said R. H. for divers good Causes and Considerations me hereunto moving, Have, and by these Presents do revoke, disannul and make void the said Letter of Attorney, and all Power and Authority therein to him the said J. G. given. In Witness, &c.

The Form of an Indenture for an Apprentice.

THis Indenture Witnesseth, That *T. G.* Son of *P. G.* &c. doth put himself Apprentice to *G. H.* Tallow-Chandler, to learn his Art or Mystery, and with him after the manner of an Apprentice to serve from the Day of the Date hereof, for and during the Term of seven Years next ensuing; during all which Term, the said Apprentice his said Master faithfully shall serve, his Secrets keep, his lawful Commands every where gladly do; he shall do no Damage to his said Master; nor see it to be done by others, without letting or giving Notice thereof to his said Master: He shall not waste his said Master's Goods, nor lend them unlawfully to any. He shall not commit Fornication, nor contract Matrimony during the said Term; he shall not play at Cards, Dice, or any other unlawful Game, whereby his said Master may be damaged, with his own Goods, nor the Goods of others; he shall not absent himself Day nor Night from his said Master's Service unlawfully; nor haunt Ale-houses, Taverns, or Play-houses, but in all Things behave himself as a Faithful Apprentice, in the Trade or Mystery he now followeth; and procure and provide for him sufficient Meat, Drink, Apparel, Lodging, Washing, and all other Necessaries, during the said Term. And for the true Performance of all and every the said Covenants and Agreements, either of the said Parties bindeth himself unto the other jointly by these Presents. In Witness whereof, they have interchangeably put their Hand and Seals hereunto this twentieth Day of, &c. In the eighth Year

Year of the Reign of our Sovereign Lord George, King of Great-Britain, France and Ireland, &c. Annoq; Dom. 1727.

A Letter of Attorney from a Seaman.

K Now all Men by these Presents, That I H. H. Mariner, now belonging to His Majesty's Ship the, &c. for divers good Causes and Considerations me hereunto moving, have, and by these Presents do make, ordain, constitute and appoint my trusty Friend, P. Q. Citizen and Baker of London, my true and lawful Attorney for me, and in my Name, and for my Use, to ask, demand, and receive of and from the Right Honourable the Treasurer, or Pay-master of his Majesty's Navy, and Commissioners for Prize Money, and whom else it may concern: As well all such Wages, and Pay, Bounty-money, Prize-money, and all other Sum and Sums of Money whatsoever, as now are, and which hereafter shall or may be due or payable unto me; also all such Pensions, Salaries, Smart-money, and all other Monies and Things whatsoever, which now, or at any Time hereafter is or shall be due to me for my Service, or otherwise in any of his Majesty's Ship or Ships, Frigots, or Vessels. Giving and hereby granting unto my said Attorney full and whole Power to take, pursue and follow such legal Ways and Courses for the recovery, receiving, obtaining, and discharging the said Sum and Sums of Money, or any of them, as I my self might or could do, were I personally present: And I do thereby ratifie, allow and confirm all, and whatsoever my said Attorney shall Lawfully do or cause to be

*be done in and about the Execution of the Premises, by
Vertue of these Presents. In Witness, &c.*

Of Women, Children, and Servants.

First of Women,

THE Woman at her Marriage, becomes wholly the Man's, together with all her moveable Goods, and if Goods be given to a married Woman; they all immediately become her Husband's; She cannot Let, Set, Sell, Give away, or Alienate any thing without her Husband's Consent, nor her very Apparel, which at her Husband's Decease goes to the Executor, or Administrator of her Husband (excepting her necessary Apparel) which, with the Consent of her Husband, she may give by Will, not otherwise by our *English* Laws.

The Wife, after her Husband's Death, having no Jointure settled before Marriage, may challenge the third Part of his Yearly Rents of Free-Lands for her Life; and also the Thirds of the Rents of such Free-Lands as he sold in his Life-time, if she did not consent to a Fine: But she can claim no Thirds of such Lands as her Husband buys, when he has sold them again, and dieth, if he puts a-

G

nother

nother Person's Name in the Deed, besides himself, when he bought them. But if her Husband died without a Will in Writing (leaving no Child, she will claim the Thirds, as above, and the Third Part of the Goods for ever, and the other two Thirds goes to the next of his Kindred.

But if she be the Wife of a Free-man of the City of *London*, (he dying without Will, leaving no Child, as before (she will challenge by Law, Three Parts of Four of her Husband's Goods and Chattels, and one Third of the Profits of his Free Lands for Life, the Goods for ever.

The Husband must answer to his Wife's Faults, if she wrong another by her Tongue, or by Trespas, he must make Satisfaction: And pay the Debts that she causeth, except he did before give notice, that they should not trust her.

A Woman cannot hope to have the Thirds of her Husband's Land, which he Mortgaged before Marriage, till the Money's paid, and Mortgage be Cancell'd.

A Man and Wife are joint Purchasers of Land, to them and their Heirs and the Survivers, and Heirs, and if the Husband dies, the Wife may sell the Land without the consent of their Children.

A Woman that kills her Husband is to be Burnt alive.

If a Wife bring forth a Child, begotten by another before Marriage, but Born after Marriage, the Husband must own the Child as Heir at Law.

A Wife cannot be a Witness for or against her Husband, they two being so much one.

If a Wife bring forth a Child during her Husband's long Absence, tho' it be some Years, yet if he live all the time within this Island, he must Father that Child; and if that Child be her First Born Son, he shall inherit the Husband's Estate, if intailed or left without a Will.

A Woman that doth not hear of her Husband for seven Years together may Marry another Man.

If a Woman have no Son, but Daughter, the Lands, as well as Goods, are equally divided amongst the Daughters, who are Co-heirs.

Man and Wife are so fast joined by our Law, that may not be wholly parted by our Law, by any Agreement between themselves, but only by Sentence of a Judge, for Adultery, &c.

Of Children.

A Father may give all his Estate (not intail'd) to any one Child, the Consideration whereof keeps some Children in Awe.

A Son, at the Age of 14, may chuse his Guardian, be an Executor, may consent to Marriage, (if not an Apprentice) may, by Will, give his Goods and Chattels, and become bound in Bonds, or Covenants for Necessaries, as Food, Raiment, Schooling, &c.

At the Age of 15, he may be Sworn to his Allegiance to the King.

At 21, he is said to be of full Age, may sell Land, (which in other Countries is not till 25) when the heat of Youth is somewhat abated, and

they begin to be stayed in Mind as well as in Growth, viz. *Such as live in the fear of God*, Job. 28 28.

A Daughter at 7 Years may consent to marry, tho' she may afterwards dissent; at Nine she may consent to a Joynture.

At 12, she is able to confirm her former consent to Marriage, and if at that Age she dissent not, she is bound: She may at that Age make a Will of her Goods, and become bound for Necessaries, &c.

At 13, she may receive her Lands into her own Hands, that's given or falls to her. At 21 she may Let, Sell, or Will her Lands.

The Eldest Son inherits all his Father's Lands (if the Father died without a Will) and to the Younger Children, are disposed Goods and Chattels, and commonly the Eldest Son's Wife's Portion; and besides, some are careful to Educate them in some Profession or Trade.

A Man marrying a Wife, having Free-Land, and she dieth, leaving a Child that's heard to cry and dieth, the Man shall have the Lands for his Life. That is called, *The Courtesie of England*.

Of Servants.

ORdinary Servants are hired, commonly for a Year, (whereby they become Inhabitants of that Parish) at the end thereof, they may be free, giving three Months Warning before) and may serve themselves with other Masters, only it is counted Discourteous and Unfriendly, to take another Man's Servant, before leave given by his Master,

Master, and Indiscreet to hire a Servant without a Certificate of his Diligence, and Faithfulness, in the Service of his last Master, or somewhat to this effect.

Memorandum, *That I, A. B. do certifie, That C. D. the Bearer hereof, hath been a trusty Servant unto me. Witness my Hand the 3d of May, 1727.*

A. B.

Servants and Apprentices are accounted Slaves, during the time of their Service, and are put to the worst of Drudgery for the most part.

But such Masters and Mistresses that live in the Fear of God (which teacheth to do as we would be done by, *Mat. 7. 12.*) will not make Slaves or any Servants, but will faithfully instruct them in such Art, Skill, or Trade, in Meekness, as they promised by Indenture, or otherwise.

Formerly Servants were bought and sold in the Markets in *England* (as it is at this Day in some Countries) but now, if a Foreign Slave is brought into *England*, he is free from Slavery, but not from ordinary Services.

A Prayer for a Servant.

O God, of whose only Gift it cometh that thy Faithful People do unto thee true and laudable Service, grant that I, thy unworthy Servant, may truly serve thee, and for thy sake my Master.

[or Mistress] whom thou hast set over me; and that not grudgingly, and with Eye-Service, as Men-pleasers, but willingly, and withal my Heart, as unto thee. that so I may at the last Day hear thee pronounce that joyful Sentence, Well done thou good and faithful Servant, enter thou into the Joy of thy Lord. And this I beg for his Sake, who took upon him the Form of a Servant, Jesus Christ, our blessed Lord and Master, Amen.

To Work aright, O LORD, Instruct thou me,
That in thy Sight I may approved be;
Then shall my Soul have Rest and Peace for ever
In thee, which neither Death nor Hell can sever.

The first rise of Holy-Days among Christians.

HOLY-Days among Christians, had their Rise from the Gratitude of the Primitive Church, to those who had been Martyrs and Confessors for the Christian Faith: And therefore they instituted and set apart solemn Days for Commemorating their Sufferings; but the Corruptions of the Church of Rome prevailing, the good Design of the Primitive Institution became abus'd, so that instead of keeping strictly to serving God on those Days, nay, even the Lord's Day it self, is converted to scandalous Sports and Pastimes, such as May-Bushes, Mor-

ris-Dancing, Wrestling, Fighting of Cocks, Throwing at them, &c.

But Constables, Church-Wardens, &c. bind their Souls, by an Oath, to put the Laws in Execution against Drunkards, profane Swearers, &c. and do not, such are Perjur'd, so break God's Command, *Numbers 30. 2, If any Man Vow a Vow unto the Lord, or swear an Oath to bind his Soul with a Bond, he shall not break his Word, he shall do according to all that proceeds out of his Mouth.*

What Use of Oaths, of Promise, or of Test,
Where Men regard not God, but Self-Interest.

Leviticus 5. 1. And if a Soul sin, and hear the Voice of Swearing, and is a Witness, whether he hath seen or known of it, If he do not utter it, then he shall bear his Iniquity. Perjury is a Crime for which it is very difficult to obtain a Pardon, because in Swearing, we invoke the Vengeance of God, and renounce his Mercy, in case we swear falsely.

ARITHMETICK made Easy.

How to read, or know the Value of fifteen Figures set together, or under fifteen,

IF you know the Verses in the Holy Bible, then you can read three Figures, and if so, you may read fifteen (or under) by this Table.

Numeration Table.

1	0	{	Unites,
2	0		Tens,
3	0		Hundreds,
4	0	{	Thousands,
5	0		Ten Thousands,
6	0		C Thousands,
7	0	{	Millions,
8	0		Ten Millions,
9	0		C Millions,
10	0	{	Thousand Millions,
11	0		Ten Thousand Millions,
12	0		C Thousand Millions,
13	0	{	Millions of Millions,
14	0		Ten Millions of Millions,
15	0		C Millions of Millions.

Read them by threes, as 765 Millions of Millions, 473 Thousand Millions, 568 Millions, &c.

100 is one Hundred.

100 000 an Hundred Thousand.

1 000 000 is one Million.

A Million is 10 Hundred Thousand or one Thousand Thousand.

How

How many Holy-Days in the Year.

Circumcision, or New Years-Day, —————	January 1.
Epiphany, or Twelfth-Day, Wise- } Men's Gifts to our Saviour, —————	January 6.
Conversion of St. Paul, —————	January 25.
Martyrdom of King Charles I. —————	January 30.
Purification of the Virgin Mary, or } Candlemas Day, —————	February 2.
St. Matthias, in Leap-Year, Feb. 25. —————	February 24.
Lady-Day, or Annunciation of the Vir- } gin, from whence we Date the } Year, —————	March 25.
St. Mark, the Evangelist, —————	April 25.
St. Philip and James, or May-Day —————	May 1.
Birth and Return of K. Charles II A.D. } 1660, and Restored Church and State } from the Independants, —————	May 29.
St. Barnabas, the Apostle, —————	June 11.
St. John Baptist, or Midsummer-Day —————	June 24.
St. Peter, the Apostle, —————	June 29.
St. James, the Apostle, —————	July 25.
St. Bartholomew, the Apostle, —————	Aug. 24.
St. Matthew, the Apostle, —————	Sept. 21.
St. Michael, or Michaelmas-Day, —————	Sept. 29.
St. Luke, the Evangelist, —————	Octob 13.
All Saints, —————	Novem. 1.
Powder Treason, —————	Novem. 5.
St. Andrew, the Apostle, —————	Novem. 30.
St. Thomas, the Apostle, —————	Decem. 21.
Christmas, or the Birth of Christ Jesus, —————	Decem. 25.
St. Stephen, Proto Martyr, —————	Decem. 26.
St. John, the Evangelist, —————	Decem. 27.
Innocents-Day, —————	Decem. 28.

By Festival-Solemnities and Set-days, (saith St. *Augustine*) we dedicate and sanctifie to God the Memory of his Benefits, lest unthankful Forgetfulness thereof creep upon us in course of Time.

But, of all Days the Sabbath-day is to be kept Holy, *Isaiah* 66. 23. That is the Day when our blessed Saviour arose. (for Publick Worship) viz. which we call Sunday.

The *Grecians* observe Monday.

The *Persians*, Tuesday.

The *Assyrians*, Wednesday.

The *Egyptians*, Thursday.

The *Turks*, Friday.

And the *Jews*, Saturday.

So that every Nation observes one Day in seven for the Publick Worship of God; then what Punishment do those deserve that go to no Publick Worship at all; these having Liberty, and not going, are worse than the very Heathens that Honour not their Creator.

But, for Holy-days, more at large, see the seventh Edition of this Book: For the Prophanation of the Sabbath-day often brings down the Judgment of God upon a Nation, (as well as Revelling in the Night, Drunkenness, to shew their Folly and vain Joy upon the coming of News, supposed to be good News) *Leviticus* 29. 34. *Jeremiah* 17. 24, 25, 27. *Hosea* 4. 2, 3.

Also the observing of Wakes, or Sunday-Fests, which *Papists* observed in *England*, 'tis a shame for *Protestants* to tread in their Steps, as likewise their imitating them in setting up May-Poles, (in Memory of the *Whore of Rome*.)

*The Latin Names for the Days of the Month
and Money, set in Latin Bonds.*

1 **D** At Primo die }
dated the first }
Day.

2 Secundo

3 Tertio

4 Quarto

5 Quinto

6 Sexto

7 Septimo

8 Octavo

9 Nono

10 Decimo

11 Undecimo

12 Duodecimo

13 Decimo tertio

14 Decimo quarto

15 Decimo quinto

16 Decimo sexto

17 Decimo septimo

18 Decimo octavo

19 Decimo nono

20 Vicesimo

21 Vicesimo primo

22 Vicesimo secundo

23 Vicesimo tertio

24 Vicesimo quarto

25 Vicesimo quinto

26 Vicesimo sexto

27 Vicesimo septimo

28 Vicesimo octavo

29 Vicesimo nono

30 Tricesimo

31 Tricesimo primo

Latin

Latin Names of Money.

20 <i>Skillings Vigent solid</i>	60 <i>Sexagint libris</i>
30 <i>Trigint solidi</i>	70 <i>Septuagint libris</i>
40 <i>Quadragint solidi</i>	80 <i>Octogint libris</i>
3 <i>Tres libris</i>	90 <i>Nonogint libris</i>
4 <i>Quatuor libris</i>	100 <i>Cent libris</i>
5 <i>Quinque libris</i>	200 <i>Ducent libris</i>
6 <i>Sex libris</i>	300 <i>Trecent</i>
7 <i>Septem libris</i>	400 <i>Quadrigint</i>
8 <i>Octo libris</i>	500 <i>Quingent</i>
9 <i>Novem libris</i>	600 <i>Sexagint</i>
10 <i>Decem libris</i>	700 <i>Septingint</i>
11 <i>Undecim libris</i>	800 <i>Octogint</i>
12 <i>Duodecim libris</i>	900 <i>Noningent</i>
13 <i>Quatuordecim libris</i>	1000 <i>Mille libris</i>
20 <i>Vigint libris</i>	2000 <i>Duo Mille</i>
30 <i>Trigint libris</i>	3000 <i>Tres Mille</i>
40 <i>Quadragint libris</i>	4000 <i>Quatuor Mille</i>
50 <i>Quinquagint libris</i>	<i>&c.</i>

☞ *Note, That the Quarter-Days, call'd Rent-Days, are,*

Lady-Day, the 25th of March,

St. John Baptist, 24th of June.

St. Michael, the 29th of September.

St. Thomas, the 21st of December.

☞ *N. B. Lady-Day begins the Year for Law Business, &c.*

How

How to Read and Value any Number of Figures whatsoever.

100. 000. 000. 000. 000. 000. 000. 000.

Thus Read, 100 Thousand, Thousand, Thousand; Thousand, Thousand; Thousand, Thousand.

Note, That the 100 I pronounced, and for every three Cyphers I named a Thousand to the End.

573. 631. 425. 732. 473. 647. 231. 532. 933.

To Read these, say, 573 Thousand, Thousand, &c. saying Thousands for every three Figures to the End of the Line.

Then 631 Thousand to every three Figures to the End of the Line.

Do so with 425, &c.

Lastly, When you come to the Figures 231 which is, 231, Thousand, Thousand, or Millions, 532 Thousand 633.

I Suppose there is an Orchard:

Apple-Trees ——— 136

Pear-Trees ——— 076

Cherry-Trees ——— 207

Plumb-Trees ——— 036

—————
455
—————

Note;

Note, That if the four Numbers had been Pounds in Money, or Doves of Sheep, or other Things, to be sum'd up thus.

First, I begin at the bottom, on the Right Hand, saying 6 and 7 is 13, and 6 is 19, and the 6 at the Top makes 25, the odd 5 I set between the Lines, and 20 I carry as 2, because its two Tens) to the middle Row, saying 2 that I carry and three is 5, and 7 is 12, and the 3 at the Top makes 15, the odd 5 of the 15 I set between the Lines, and carry the 10 of the 15 as 1 on the left Hand Row, saying, 1 that I carry and 2 is 3, and 1 at the top makes 4, which 4 I also set between the Lines, and the Number of the Trees are in all 455.

II. Suppose a Man owes me	17—16—01
Another	20—11—07
A Third Man	23—18—09
The Fourth Man	73—17—10

What doth these four Sums of Money come to in all?

The answer will be

136—04—03

Note, That the Cypher 0 on the left Hand of any Figures signifies nothing, but only to square the Sum, or make it look handsomely.

A D D I T I O N.

*Addition joins many Sums into one,
And Comprehends them in one Sum alone.*

I Set the four Sums of Money one under the other thus

Note, That When a single l.

(10) (20) (12) is set over any Figures, is
l. s. d. shews they are Pounds in
Money (as above) then s. for
Shillings, and d. for Pence.

17 — 16 — 01
20 — 11 — 07
23 — 18 — 09
73 — 17 — 10

Note, also, That when lb
is over Figures, they are
Pound weight of Goods,
Ec.

136 — 04 — 03

Likewise 12 set over the Pence, shews that for every 12 I find in the Pence Row, I am to carry so many 20s. as I find in the Shillings Row, to the place of Pounds, as aforesaid.

But for the easiest way of casting up this Sum (for the young Learner) is by using Dots thus.

Beginning at the Pence; I say 10d. and 9d. is 19d. where against the 9 I set a Dot for 12d. (or you may make your Dots on the Waste-Paper) and the 7 above the 12 I carry to the (above 9) and it makes 14, where I set a Dot also 12, and it makes 14, where I set a Dot also for 12, and carry the odd 2 to the one on the top makes 3, which 3d. I set between the Lines, as above you see.

Next look how many Dots, and find 2, which

I carry to the row of Shillings, saying, 2 that I carry and 17s. is 19, and 8 is 27, and the 1 of the 18 makes 37, where against the 18 I set a dot for 20s. or 1*l*. and carry the odd 17s. upwards, saying 17s. I carry and 1 is 18, and the 10 of the 11, makes 28, where I set a dot against the 11 for another 20s. and carry the odd 8 to the 16 on the top, saying, 8 I carry and 16 makes 24s where I set a dot for 20s. and set between the Lines the odd 4s. as you may see.

Note, That you may sum up the Shillings Row without dotting thus; saying 2s. I carry from the place of Pence and 7 is 9, and 8 is 17, and 1 is 18, and 6 is 24, and 10 is 34, and 10 is 44, and 10 is 54, and 10 is 64s. that is 3*l*. 4s. then the 4s. being set between the Lines, the 3*l*. is to be carried to the Pounds.

Lastly, The 3 dots for the three *l*. found in the place of Shillings, I carry to the Pounds (done up as the Example of Apple-Trees) saying, 3 that I carry and 3 is 6, and 3 is 9, and 7 on the top makes 16, the odd 6 I set between the Lines, and I carry the 10 as 1 to the last Row, saying 1 that I carry and 7 is 8, and 2 is 10, and 2 is 12, and 1 is 13, which is set between the Lines, and the whole Sum comes to 136*l*. 4s. 3*d*. Answer.

Note, That when you are to write a Bill of several small Parcels, begin it in order of Pounds Shillings and Pence, thus 0 3 9, and when you are bidden to set down 16*d*. set down 1s. 4*d* or to set down 23s. you must set 1*l*. 3s. 0*d*. yet if a single thing, and not a Bill (as in a Letter) you may write 45s. or 17*d*.

He that is so bad a Husband as to spend in Ale 3*d*. every Day, it comes to, by the Year, three Pounds;

Pounds, three half Pounds, three Groats, and three Pence, that is 4*l.* 4*s.* 3*d.* by the Year; if 4*d.* a Day, by 4*d.* four half Pounds, &c.

Do for any other number of Pence spent by the Day, &c.

III. If one Pound of any thing cost 7*d.* $\frac{1}{2}$, that is 7*d.* six penny, what will 280*lb.* Weight cost after that rate? Performed by Addition thus,

	<i>l.</i>	<i>s.</i>	<i>d.</i>
200 Six-pences makes 100 <i>s.</i> or ————	5	0	0
80 Six pences makes ————	2	0	0
200 Pence is ————	0	16	8
80 Pence is a Noble, or ————	0	6	8
200 Half-pennies is ~~————~~ ————	0	8	4
80 Half-pennies makes 10 Groats, or ————	0	3	4
	—————	—————	—————
Price of the Goods	8	15	0
	—————	—————	—————

Note, That to work such Questions as this by Addition, it's necessary to have by Heart the following Table, and that you may cast up any Sum of Money without Dotting, for when you know the number of Pence, you may by this Table, know how many Shillings to carry to the Shillings place. And for the Number of Shillings in the row of Shillings, you know that 70 Shillings is 3*l.* 10*s.*

Get this TABLE by
 Heart thus, 30d. is half
 a Crown, then 60d. is 5s.
 Again 40d. is 3s. 4d. then
 80d. is a Noble, or 6s.
 8d. Again 50d. is 4s. 2d.
 then 100d. is 8s. 4d. &c.
 100 H of Cheefe, at 3d.
 the H comes to three
 times 8s. 4d. Or 25 Fag-
 gots, 120 to the Hundred
 at 1d.

d.	is	s.	d.
20	—	1	— 8
20	—	2	— 6
40	—	3	— 4
50	—	4	— 2
60	—	5	— 0
70	—	5	— 10
80	—	6	— 8
90	—	7	— 6
100	—	8	— 4
110	—	9	— 2
120	—	10	— 0

the Piece comes to 10s. as in the Table.

Then for every Crown that a Hundred of Fag-
 gots cost, reckon an Half-penny; If a Faggot cost
 me three Half-pence, one Hundred will cost 15s.
 because there is three Crowns it.

Note, That Boys may improve themselves very
 much in reckoning up divers Things, after they have
 by Heart the Table aforesaid, and learned this Rule
 of Addition.

As to a 100 Yards of Tape at one Penny the Yard,
 the Table tells you it comes to 8s. 4d.

An Hundred Yards of Galloona, at one Penny half-
 penny the Yard.

In the Table 100d. is ——— 8 s. 4 d.

And half that Sum, is ——— 4 s. 2 d.

Answer 12 s. 6 d.

Note

Note, That if it had been one Penny three Farthings the Yard, for the Farthing add half 4s. 7d. for the Farthings makes up 14s. 7.

Or 80 $\frac{1}{16}$ of Sugar or Cheefe, at Three Pence half-penny the Pound.

In the Table 80d is 6s. — 8d.

80d. is 6s. — 8d.

80d. is 6s. — 8d.

half 80d. is 3s. — 4d.

Answer 1 — 3 — 4

IV. If a Man owed me three Sums of Money, what comes it to in the whole? As,

l.	s.	d.
202	17	7 $\frac{1}{2}$
703	01	09
906	10	1 $\frac{1}{4}$
1812	09	5 $\frac{3}{4}$

Note, That the 7d. $\frac{1}{2}$ is seven Pence half-penny; and the 1d. $\frac{1}{4}$ is one Penny Farthing, and in the Total Sum between the Lines 5d. $\frac{3}{4}$ is Five Pence three Farthings.

To cast up the three Sums I do thus, the $\frac{1}{2}$ d. which is the Half-penny, and the $\frac{1}{4}$ the Farthing makes $\frac{3}{4}$, or three Farthings, which is set between the Lines, next 1d. and 9d. is 10, and 7 is 17d. where against the 7 is set a Dot for 12d. and set the odd 5d. between the Lines.

Next, 1 that I carry from the Place of Pence, and 10s. and 1 is 11, and 1 is 12, and 17s. is 29s. I set down the odd 9s. between the Lines, and the 20s. makes 1l. I carry to the Place of Pounds.

Saying 1 carry and 6 7, and 3 is 10, and 2 is

12,

12, where I set a dot for 10, and set the odd 2 between the Lines.

Next, I carry the Dot for 10, as one to the middle row, (being all Cyphers,) it's but one still, so I set the 2 under the row of Cyphers, and proceed to the last row.

Saying, 9 and 7 is 16, and 2 at the Top is 18, which I set between the Lines, and the whole Sum comes to 1812l 9s 5d three Farthings.

Note, That I have been the more large upon the last Example, with the II before, because the diligent Scholar (who useth his Pen in doing them, as well as Reading) may be enabled to call up all the Sums following in Addition, minding the dot going up every row, according to the Figures placed on the Top of each row, as in the next Sum you must dot at 16, because 16 Ounces is a Pound, and 28 Pound a quarter of an Hundred; 4 Quarters one Hundred; 20 Hundred one Tun, (or Cart Load,) and so of the rest.

V. *Averdupois Weight.*

	(20)	(4)	(28)	(16)	(16)
<i>Tuns.</i>	<i>C</i>	<i>Quarters.</i>	<i>lb.</i>	<i>3.</i>	<i>3.</i>
763	17	2	19	12	9
369	10	3	16	10	3
763	14	2	14	01	2
1897	03	0	22	07	14

These Weights are used by Grocers, &c. and to weigh Currants, Fresh Butter, Cheese, &c. Wool also, 28 lb. is called a Ted.

But because Grocers send for smaller Parcels Weekly,

ly by the Carrier, they commonly write the Bills of Carriage thus

	C. q. lb.	l. s. d.
A Parcel down	5—3—14	0—3—7
Boxes up to London	0—1—19	0—1—1

Note, That the first Line shews that the Parcel that comes down by the Carrier, weighed 5 Hundred, 3 Quarters, and 14 Pound; and the 3s. 7d. for Carriage, &c.

Note, That so many Farthings as one Pound of Sugar cost, reckon so many seven Groats, to know what one Hundred weight will cost; an Hundred weight, being 112 Pound. See a Table of this in Reduction.

Or according to this Verse:
For every Farthing that one Pound doth cost.
Reckon Two Shillings and a Groat,
And that's the Price of the Great Hundred Weight.

VI. Troy Weight.

	(12)	(20)	(24)
lb.	℥.	d w.	gr.
763	6	12	17
515	9	14	19
459	7	13	15
1739	0	01	03

Note, That this Mark is for one Ounce. ℥

For a Penny-weight this d. w.

For a Grain, write gr. Therefore 24 Grains is

1 Penny-weight, 20 d. w. is an ℥

This

This *Troy Weight* is used to weigh Bread-Corn, Bread, Flower, Gold, Silver, Amber, Jewels, Liquors, and of late Salt, &c.

The beginning of these Weights was thus, 32 gr. of good plump and dry Wheat Corns. may serve to weigh 3 d of our *English Silver Coin*.

Then 64 Grains weight 6 d. and 10 times 64 Grains may serve to weigh 5 s. in Silver Coin. or an Ounce Troy, 12 of thole a Point of Wheat, or 60s, the l. in Coin

But now the said 32 Grains of Wheat, are reduced into 24 artificial Grains called a Penny-Weight, 20 Penny-Weight an Ounce, and 12 Ounces a Pound.

Note, That 14 $\frac{3}{4}$, 12 d. W. Troy, is equal to one Pound of the Grocers Weight, called *Averdupoise*, now in Use to weigh Bread by a late Act. [See a Table in this Book to weigh a Twelve Penny Loaf.

The $\frac{3}{4}$ Troy is bigger than the $\frac{3}{4}$ *Averdupoise*, yet the $\frac{1}{2}$ is bigger, because the Troy $\frac{1}{2}$ hath but 12 Ounces, and the *Averdupoise* 16 Ounces

A Pound of pure Silver is worth 3l, 4s. but mix'd with Copper, (which, its said, makes it harder) is worth but 3l. or 60s.

It's said that Guineas are coin'd at 11 Ounces fine Gold, with an Ounce of an Alloy of Copper to the $\frac{1}{2}$.

Queen *Elizabeth* call'd in all b se Money, and caused weighty hammer'd Shillings to be coin'd, which of late Years hath been much Clipt, and the Clipt Counterfeited, until K. *William* called in all the Clipt Money to be Coin'd into mill'd Money; The Taxes paid to the King in Clipt Money, at 5s. 8d. the Ounce some Time, and paid from Man

to Man at 5s. 2d. to prevent Clipping; for some Pieces past in Payment for Shillings, as was noe broader than a mill'd Three-pence, that many Men, rather than take much of such base Money, would take Guineas at 30 s. and sometimes 32 s. the Piece, until the Parliament in the Year 1695. sunk them to 22 s. a-piece, under the Penalty of 20 l. to such as paid or receiv'd them above that Rate: So that the Fall of Guineas, together with the Clipt Money, became a very great Loss to many Men. See more of *Troy Weight in Reduction*. But of late Years, Guineas go but for 21s:

☞ *Note*, That all our *English* Money of Gold and Silver, is Coin'd in the Tower of *London*, the Place where it's Coined, is called the *Mint*.

The *Mint*-Officers are so many, that they were made a Corporation by King *Edward* the Third, and so exempted from all Publick Offices, and their Estates free from all Taxes, and Parish Duties.

The Fees of all of them come to, by the Year (it's said) about 20000 l.

The Chief Officer is called *Warden*, or Keeper of the *Mint*, who receives from the Merchants and Goldsmiths, the *Bullion*, or uncoin'd Gold Silver to be Coin'd, who receive it Coin'd of the *Warden*.

Every Way (says the Author of the State of Great-Britain) we of this Nation are indeed too lavish of our Silver and Gold, not only expending great Quantities needlessly, but wasting it prodigally, and irreparably. About 80 Years ago; upon Examination, it was found that more than
800000 l.

8000000 *l.* per Ann. was yearly wasted here in *Eng-land*, in Silver-Thread, Purls, Spangles. &c. be-
sides Gold, and how much more may be easily com-
puted, by the increase of our Luxury? For, where-
as, we complain of Taxes, it may reasonably be
supposed, that the superfluous Expence of Women
and Children would almost half maintain'd the late
War.

VII. *Apothecaries Weights and Marks.*

	(12)	(8)	(3)	(20)
lb	℥	ʒ	℥	gr.

98	— 11 —	7	— 2 —	18
45	— 10 —	6	— 1 —	17
62	— 09 —	4	— .2 —	13

207	— 08 —	3	— 1 —	8

These three Sums are cast up as the other, by dotting each Row, according to the Figures inclosed on the Top of the foregoing Sum.

You must observe, that this Mark ℥ is for an Ounce, as before shew'd; a Drachm this Mark ʒ ; and a Scruple this ℥ss

The several Denominations must be read thus;

As (20 grs.) make a Scruple; (3 ℥ss) make a Drachm, (3 ʒ) make an Ounce, (12 ℥) make a ℔ .

Again ℞ Take thou; *anna* of each alike; *M.* an handful; *℞. S.* a sufficient Quantity.

Note, That this Ounce is 480 Grains, as in *Troy-Weight*: See more in *Reduction*. And that the Apothecaries sell their Goods by *Averdupois Weight*, but compound their Medicines by this of *Troy-Weight*, 20 Grains of which make a *Scruple*, &c.

VIII. Measures in Length.

	(12)	(4)	(4)
Dozens.	Yards.	Quarters.	Nails.
756	8	2	2
342	9	3	1
576	6	2	2
1676	1	0	1

	(3)	(8)	(11)	(20)	(3)
Leagues	Miles	Furlongs	Scores	Yards	Feet.
763	2	4	6	17	2
597	1	6	5	14	1
753	0	7	6	13	2
2114	2	2	8	05	2

IX. Land-Measure.

	(4)	(40)
Acres.	Roods.	Poles.
542	02	12
761	01	13
582	01	19
1886	01	04

X: Dry-Measure.

	(4)	(8)	(4)
Lasts.	Quarters.	Bushels.	Pecks.
463	3	4	2
765	4	3	1
453	8	6	3
1685	6	6	2

	(4)	(8)	(4)
Chaldrons.	Quarters.	Bushels.	Pecks.
27	3	4	1
72	2	7	3
19	1	6	2
120	0	2	2

This for Coals at 32 Bushels the Chaldron, but commonly are 36 Bushels. *Scotch* Coal Sold by the Hundred weight.

XI. Liquid Measure for Wine.

	(2)	(2)	(63)	(4)	(2)
Tuns.	Butts.	Hogheads.	Gallons.	Quarts.	Pints.
54	1	1	61	2	0
55	0	0	60	1	1
99	1	1	62	3	1
240	0	0	58	3	0

Of Ale Measure.

	(2)	(2)	(2)	(8)
Hogheads	Barrels	Kilderkins	Firkins	Gallons.
7	1	0	1	5
6	1	1	1	7
9	0	1	0	6
24	0	0	0	2

Of Beer Measure.

	(2)	(2)	(2)	(9)
9	1	1	1	8
2	0	1	0	7
5	1	0	1	6
18	0	0	0	3

Note, That 8 Gallons is a Firkin of Ale or Soap, 9 Gallons is a Firkin of Beer, $18\frac{1}{2}$ Gallons a Runlet of Wine, $56\frac{1}{2}$ a Firkin of Butter, 42 Gallons a Tierce, 63 Gallons a Hoghead, 2 Hogheads a Pipe or Butt. 3 Pipes or Butts, a Tun of Wine, being 252 Gallons. A Load of Wheat 5 Bushels, a Comb 4 a Weigh 5 Quarters, 2 Weighs a Last.

Four Pecks a Bushel of Land Measure, 5 Pecks a Bushel of Water Measure. Note, That every Bushel with a plain even Bottom, being made 18 Inches and a half wide throughout, and 8 Inches deep, A Chaldron or Coals 36 Bushel. A Stone is 8 Pound, and in some Countries 'tis 14 A Barrel of Soap is $256\frac{1}{2}$ lb.

half a Barrel 128, and a Firkin 64 Poundt. A Weigh of Cheese two Hundred and an half, or 280 Pound. A Quire of Paper 24 Sheets. A Ream of Paper, 20 Quire. A Bale of Paper 10 Reams.

Addition of Time.

	(12)	(4)	(7)	(24)	(60)
Years.	Months.	Weeks.	Days.	Hours.	Min.
673	7	3	3	18	27
542	9	2	6	17	38
1216	5	2	3	12	05

Note, That 60 Minutes is an Hour, 24 Hours a Day and Night, &c.

Proof of Addition.

After you have cast up the Sum, and set down the Total on waste Paper, begin at the Top and cast it downwards, and if it agrees with the Total, it's right, otherwise not. This I have often proved to be the rightest and quickest Way.

And now, if young Men will not study a little (on spare Hours) to learn by the Book, but are so Idie and will learn nothing for their Good, but what a Master tells them at School they are to blame, and deserve the Rod. However, I have written the several Sums ready cast up, as above; and they may be of some Service to the young industrious School-Master in the Countrey. I endeavour the Good of all.

How to cast up Sums of Money by Counters, or Farthings, very useful to those that never learned to write Figures.

First, Make three Marks, or Chalks upon a Table, about three Inches asunder, like these.

1 1 1

Then let the first Mark be supposed to be the Place of Pounds, the second the Place of Shillings, and the third next the Right-Hand, the Place of Pence; and you may make another, if you will, for the Place of Farthings.

Secondly, Now to place your several Sums to be cast up, as suppose I begin with 3*l.* 7*s.* 3*d.* lay down as many Counters at each Mark, thus:

1.	1.	1.
o	o	o
o	o	o
o	o	o
	o	
	o	
	o	
	o	

And when you put another Sum to this, as suppose 17*s.* with the 7*s.* already, makes 24*s.* then set one Counter more in the Place of Pounds, and leave but 4 in the Place of Shillings, and your Sum is 4*l.* 4*s.* 3*d.* and so add more at pleasure.

Lastly, But if you are to cast up several Sums that are Pounds, without Shillings, or Pence, then mark upon the Table four Marks as before.

These

These being fo, easie,	○	○	○	○
I need not write much	○	○	○	○
for further Directions,	○		○	○
observing the 4 Places			○	

Thou. Hund. Tens. Ones.

Read them thus, the three Counters next the left-hand, stand for three Thousand; next two Hundred, next, four Tens, or forty; and three at the last, that is 3242.

Thus you may make the Sum bigger or lesser as you please, even from one Pound to Thousands.

Therefore I hope, that whoever can do it, will not grudge to teach their Neighbours near them Gratis, if they desire it.

SUBTRACTION.

Subtraction taketh a lesser Number out of a greater, and leaveth the Difference under the Line.

I. If you have 847 Sheep in a Field, and are to take out 533 of them to Fair or Market, how many be left in the Field?

Always let the biggest Number uppermost, thus,

Sheep in the Field, 847

Sheep to be taken out, 533

Now to subtract 533 out of 847, begin on the right-hand, thus:

Saying, Take 3 out of 7, rest 4, to be put under the Line. Lastly, Take 5 from 8, rests 3, to be put under the Line, so that there remains in the Field 314 Sheep, which you may prove, by adding 314 to 533, and the Sum will be 847.

H 4

II.

II. If King *Henry VIII.* was born in the Year of our Lord *Christ*, 1491, according as it is in a Table in an *Almanack*, how many Years is it since.

The present Year of our Lord	1726
The Year of K. <i>Henry's</i> Birth	1491
Year since	0235

This you may subtract as the last Question, or thus; Take 1 from 6 rests 5 to set between the Lines; next take 9 from 2 I cannot, so I borrow 10, and say, 9 from 12, rests 3 to set under the Lines; next, 1 that I borrow and 4 is 5, take 4 from 7, but I must pay 1 to the 4, because I borrowed 10 at 9; then say, take 5 from 7 rests 2, so that it is 235 Years since K. *Henry* was born, observe the same for other Kings and Queens, as in the Tables in *Almanacks*.

By this Rule you may know how long it is since the *Dissenters* from the Church of *England* began (as Authors saith.)

The *Anabaptist* began in the Year of our Lord, 1521, in *Saxony*, by *Nicholas Stroke*, by *Thomas Munster*, as Doctor *Luther* and *Melancton*, affirm.

The *Brownists*. in 1595, by *Robert Brown*, *Barrow*, and *Greenwood*. ————— *Presbyterians*, in 1154, by *Calvin* and *Beza*, in *Geneva*: But in *England* by *Faithful Comin*, a *Dominican Fryar*, who passed under the Notion of a Zealous *Puritan*, in the Year
1567,

1567, and by *Thomas Heath*, a Jesuit, in the Year 1568.

Independants began a little before the Year 1640, by *Goodwyn* and *Nye*, and *Sympson* and *Burrows*, alias *Brows*.

The *Antimonians* began in 1645, by *Crisp Saltmarsh*, *Tresh*, *Goad* and *Eaton*.

Quakerism in the Year 1665, by *George Fox*, *William Dewsbury*, and *James Naylor*. [I was acquainted with these three Persons, having been my self and Wife *Quakers* 40 Years till 1699.]

✍ I am apt to believe that the *Papists* would Renounce their own and twenty Errors following, if they were to be convinc'd of this one Error, viz. That the Bread and Wine in their Sacrament is the Natural Body and Blood of *Jesus of Nazareth*. Also, First, Their Divine Service in an unknown Tongue. Secondly, their taking away the Cup from the People. Thirdly, Their withholding the Scriptures from the common People. Fourthly, The Adoration of Images. Sixthly, The Doctrine of Merit. Seventhly, Purgatory. Eighthly, Their Seven Sacraments. Ninthly, Their Priests Fancies at Baptism. Tenthly, The Limbo of unbaptized Infants. Eleventh, Propriety, Sacrifice of the Mass, Twelfth, Private Masses. Thirteenth, The Sacraments of Penance. Fourteenth, The Sacrament of Marriage, with their Clergy's Refrainance there from. Fifteenth, Their Sacrament of extreme Unction. Sixteenth, Tradition unwritten. Seventeenth, Their needless Question, where was your Church before *LUTHER*. Eighteenth, The Infallibility of the Pope with their Councils. Nineteenth, The Pope's Supremacy. Twentieth, The Pope's

H 5

Pope's Deposing Power. Twenty one, Papists Uncharitableness to other Christians.

III. If 5643*l.* be owing to a Merchant, and the Debtor pays thereof at one time 4754*l.* how much of the said Sum of 5643*l.* remains unpaid.

Take Pen and Paper, and $\begin{array}{r} 5643 \\ 4754 \end{array}$
Set the two Sums thus

Beginning on the Right Hand (as before) I say Take 4 out of 3 I cannot, therefore I borrow 10, and add to it the 3, and it makes 13, then I say, take the said 4 from 13, 9 rests, which 9 I set under the Line.

Next, because I borrowed 10 to add to the Figure 3, yet I call that 10 but 1, saying 1 that I borrow'd and 5 makes 6, take 6 from 4 above it, I cannot, therefore (as before) I borrow 10 again, and add to it the 4, makes 14, then I say, take 6 from 14, rests 8 to set under the Line.

Next, take 1 that I borrowed at 4, and the 7 makes 8, take 8 from 6 above it, I cannot, therefore I borrow 10, and add it to the 6, makes 16, then I say take 8 from 16, rests 8 to set under the Line.

Lastly, Because I borrowed 10 to add to 6, I pay it again at the 4, saying 1 that I borrow'd and 4 makes 5, take 5 from the 5 above rests 0, to be set below the Line, which 0 doth not add to the Number at all, but fills up a Place.

So that 4754*l.* being paid of the Sum 5643*l.* there remains yet unpaid just 889*l.* as you see in the Margent.

IV. Suppose 5643*l.* be owing to a Merchant (as in the last Question) whereof the Debtor has paid 4754*l.* 12*s.* 8*d.* How much is unpaid?

Note, That because the Money paid is odd, that is hath Shillings and Pence, beside Pounds, set Cyphers in the place of Shillings and Pence, and the Sum will stand thus.

	(10)	(20)	(12)
	<i>l.</i>	<i>s.</i>	<i>d.</i>
Lent	5643	00	00
Paid	4754	12	08

Before you proceed to Subtract this Sum, you may do well to be perfect in the very second Question in Arithmetick at the beginning.

But to subtract the Sum, I do thus.

Saying, take 8 from 0, that I cannot do; but I borrowed the inclosed (12) and say take 8*d.* from 12*d.* rests 4*d.* to set under the Line.

	(10)	(20)	(12)
	<i>l.</i>	<i>s.</i>	<i>d.</i>
Lent	5643	00	00
Paid	4754	12	08
Unpaid	0888	07	04

Next, the 12 I borrowed at the Pence, I pay as 1 at the Shillings; saying 1 that I borrowed, and 12*s.* makes 13, take 13 from 0 I cannot, therefore

I borrowed the inclosed [20] and say, take 13 from 20 rests 7s.

Next, 1 that I borrowed at Shillings, and 4 of the Pounds, make 5, take 5 from 3 I cannot, therefore I borrow the inclosed [10] and added to the 1 makes 13; then take 5 from 13, and rests 8, to be set under the Line, as above, finishing as the last Example, and there remains unpaid, 888*l.* 7*s.* 4*d.* For Proof, add the Sum paid and that unpaid together; and if it make the Sum Lent it's right, otherwise not.

If a Man owed to another 130*l.* 2*s.* 8*d.* and hath paid of it 36*l.* 12*s.* 9*d.* what remains?

Set the Sum thus	(10)	(20)	(12)
	<i>l.</i>	<i>s.</i>	<i>d.</i>
Lent	130	02	08
Paid	036	12	09

Note, That you should be very exact in setting the Figures under each other even; and that the Cypher 0 is on the place of Hundreds, next the 36*l.* which fills up the place even with the 100*l.* as doth the Cyphers by the 2*s.* 8*d.* and the 9*d.* above the Cypher next the left Hand makes a Number never the bigger, yet a Cypher in the middle of any Number is of Service; and those next the right Hand in any Number in Vulgar Arithmetick; for the Number 2030 is read Two Thousand and Thirty, because there is a Cypher in the place of Hundreds, and a Cypher in the place of Units, or Ones which you may perceive by this.

The present Year of our Lord is 1727

The last Number above is 2030

Now most little Boys that come to write will easily read those four Figures, 1727 the Date of the Year.

The Figure 1 being One Thousand, then the Figure 2 under it must needs be Two Thousand, then the 7 over the Figure 3 is Seventy, or Seven Tens, then the Figure under it must needs be Three Tens, or Thirty.

Now for the true Substract of this 5th Example.

	(10)	(20)	(12)
	<i>l.</i>	<i>s.</i>	<i>d.</i>
Lent	100	02	08
Paid	036	12	09
Unpaid	063	09	11

First, I say, take 9*d.* from the 8*d.* above it, that I cannot do, therefore I borrow the inclosed [12] and add to it the 8*d.* makes 20*d.* then I say take 9*d.* from 20*d.* rests 11*d.* which I set below the Lines.

Next, Because I borrowed the inclosed [12] at the Pence place, I carry it as 1 to the place of Shillings, saying, 1 that I borrow, and 12*s.* makes 13*s.* take 13*s.* from the 2*s.* above it I cannot, therefore I borrow the inclosed (20) and add it to the 2 makes 22, then take the 13*s.* from 22*s.* rests 9*s.* which I set between the Lines, as above you may see.

Next,

Next, 1 that I borrowed at the Shillings, I carry to the place of Pounds, saying 1 that I borrowed and 6 is 7, take 7 from 0 I cannot, therefore I borrow the inclose (10) and say, take 7 from 10, rests 3, to be set between the Lines.

Next, 1 that I borrowed, and 3 makes 4, take 4 from 0 I cannot, therefore I borrow the (10) as I did before, and say, take 4 from 10, rests 6, which 6 I set between the Lines also.

Lastly, 1 that I borrowed in the middle of the Pounds, I carry to the 0 next the left Hand, and say, 1 that I carry and 0 is but 1, therefore I take that 1 from the 1 above, rests 0 to be set between the Lines.

So that there is unpaid 63*l.* 9*s.* 11*d.*, of the 100*l.* 2*s.* 8*d.* which you may prove by adding the Sum paid and that unpaid together.

Note, That the Examples above, I take to be sufficient for any Studious Young Man to understand the Rule of Substraction by: And if I had written ten times as many more Examples, it would do no good to those that delight not to study at spare Hours; so that it may be said, "That Serviceable and Profitable Learning cannot be bought with Silver and Gold, without Study.

Lastly, Let none that love Virtue, in themselves, ever doubt of attaining such Learning as they have need of: And if you are to Subtract 3*s.* 5*d.* from 18*s.* set it thus.

$$\begin{array}{rcl}
 \text{s.} & & \text{d.} \\
 18 & \text{---} & 0 \\
 3 & \text{---} & 5
 \end{array}
 \left. \begin{array}{l} \\ \\ \end{array} \right\} \begin{array}{l} \text{And there rests} \\ 14\text{s. } 7\text{d.} \end{array}$$

But

But the SUM of all SUMS is the SUM and SUBSTANCE of the Christian Religion, (that is to say) to have such a Faith in Christ Jesus that enables the Soul to withstand, and overcome all the Temptations (to Sin) of the World, the Flesh, and the Devil.

He that has not attain'd to such a Faith, is neither fit to pray to God, nor to Receive the Holy Sacrament, nor to Die.

M U L T I

Times: It is

2	2	4
	3	6
	4	8
	5	10
	6	12
	7	14
3	8	16
	9	18
	3	9
	4	12
	5	15
	6	18
4	7	21
	8	24
	9	27
	4	16
	5	20
	6	24
5	7	28
	8	32
	9	36
	5	25
	6	30
	7	35
6	8	40
	9	45
	6	36
	7	42
	8	48
	9	54
7	7	49
	8	56
	9	63
	8	64
	9	72
	9	81

MULTIPLICATION.

TO Read this Table of *Multiplication*.

First, Begin at the Top, at the Figures, 2 and 2, saying, 2 times 2 is 4.

Secondly, Say 3 times 3 is 9, 3 times 4 is 12, &c. Next, 4 times 4 is 16, &c. *Lastly*, The last Line is 9 times 9 is 81.

I. What is the Number of 3 times 654.

Answer, If you set the Number 654, 3 times down on Paper, one over another, the Total will be 1962.

But a much more readier way, such Question are done by this Rule of *Multiplication*, being set down thus.

654 Multiplicand.
3 Multiplier.

Now to know how much 3 times 654 is, begin thus, saying, 3 times 4 is 12, the Figure 2 of the 12, set below the Line, and bear the 10 of the 12 in mind, as 1; Next, 3 times 5 is 15, and the 1 bore in mind, makes 16, so I set 6 below the Line, and

and bear the 10 in mind as 1; next. I say, 3 times 6 is 18, and the 1 bore in mind makes 19, which I set down, and the Work will stand as in the Margin.

654

3

1962

II. To know how many Hours there are in one Year.

There are 365 Days in a Year, and 24 Hours in a Day, therefore I multiply 365 by 24, and to do that I set them thus:

365

24

Then I proceed to multiply, saying 4 times 5 is 20, and set down the Cypher under 4, and carry the two Tens to the next place, saying, 4 times 6 is 24, and 2 that I carried is 26, wherefore I set down the 6 under the Figure 4, and carry the two Tens to the next place, saying, 4 times 3 is 12, and 2 that I carried is 14, which I set down as in the Margin.

365

24

1460

Having multiply'd the 365 by the Figure 4, I will proceed to multiply it by the Figure 2 of the 24, the Multiplier, after the same manner as I did the Figure 4.

Saying, 2 times 5 is 10, therefore I set a Cypher under the 2, because I multiply by 2, and bear 1 in mind. Next 2 times 6 is 12, and the 1 I bore in mind is 13, the 3 of the 13 I set under the 4, and bear 1 in mind. Lastly, I say 2 times 3 is 6, and 1 that I bore in mind makes 7, which 7 I set under the 1, and I have done Multiplying, as you may see in the Margin above.

365

24

1460

730

Note, That the Sum above is not finished yet, until I add those two Numbers together, viz. the

1460

1460 and 730 just as they stand. Thus; as they were multiply'd,

$$\begin{array}{r}
 1460 \\
 730 \\
 \hline
 8760 \text{ Hours in a Year.} \\
 \hline
 \end{array}$$

III. *If there be 8760 Hours in one Year, as in the last Example, the Question is, How many Minutes in 8760 Hours?*

Set it down exactly thus.

Hours in one Year. 8760
 Minutes in one Hour. 60

Note, That you are to observe to set the 6 of the 60 just under the last Figure of the Multiplicand, next the Right Hand, and the Cypher, 0 by it set, the same ought to be observed, if the Multiplier had been 600, or 6000, or 10, 100, or 1000, &c.

Now, for the resolving this Question, begin thus, the Cyyher 0 set under the Line. Next, 6 times 0 is 0, which 0 I set under the Line, under the 6, next 6 times 6 is 36, the odd 6 of the 36, I set under the Line, and bear 3 in mind for the 30, saying 6 times 7 is 42, with the 3 I bore in mind, makes 45, the odd 5 I set between the Lines, and bear four tens in mind.

Lastly, 6 times 8 is 48, with the 4 I bore in mind makes 52, the odd 2 I set under the Line, and the 5 of the 52 (having no further to carry it)

it) I set it also under the Line, and the Sum stands thus:

$$\begin{array}{r} \text{Hours in one Year} \quad 8760 \\ \text{Minutes in one Hour} \quad 60 \\ \hline 525600 \\ \hline \end{array}$$

That is 525 thousand six hundred.

III. *If there are 525600 Minutes in a Year, How many Minutes old may a Young Man be, that is 23 Years of Age?*

The Question set down thus, 525600
23

Saying 3 times 0 is 0, I set the 0 under the 3, next 3 times 0 is 0, and set that under the 2, next 3 times 6 is 18, I set the odd 8 under the Line (and bear 1 in mind) next 3 times 5 is 15 and the 1 I bore in mind makes 16, the odd 6 I set under the Line, and bear 1 in mind, and say 3 times 2 is 6, and the 1 I bore in mind makes 7, which I set under the Line. Next I say 3 times 5 is 15, which 15 I set under the Line, and the Figure 3 of the Multiplier is done with, and the Sum is near half done, and stands thus:

$$\begin{array}{r} 525600 \\ 23 \\ \hline 1576800 \end{array}$$

Next,

Next, for the multiplying the Figure 2 of the Multiplier unto the Multiplicand.

Say 2 times 0 is 0 (which 0 I set just under the Figure 2, as you may see below.) Next, 2 times 0 is 0, which 0 I set under the Figure of 8; Next 2 times 6 is 12 (the 2 of the 12 I set under the 6) and bear 1 in mind. Next, 2 times 5 is 10, and the 1 I bore in mind makes 11, the odd 1 I set under the 7, and bear 1 in mind. Next, 2 times 2 is 4, and the 1 ten I kept in mind makes 5, to set under the 5. 2 times 5 is 10, and set it down as you may see underneath.

Minutes in the Year	525600
Years of his Age	23
	1576800
	1051200
Minutes old	12088800

Now I have done multiplying, and the two Lines that came thereof, added together makes 12088800, so that the Young Man of the Age of 23 Years may be said to be Minutes old, twelve Millions, 88 Thousand, 8 Hundred.

Whereas 365 is set for the Days of an Year above, yet the *Julian* Account makes the Magnitude or (or greatness of the Year) to consist of Six Hours more.

Therefore I multiply 6 by 23, the Young Man's Age in Years above, and it makes 138 Hours to be added to 8760 (the Hours before) according to this Account there are 8898 Hours in a Year.

Or

Or more exactly, the Year consist of 366 Days, 5 Hours, 49 Minutes, 4 Seconds, and 21 Thirds, which being near 11 Minutes less than we usually account a Year because that running back of our *Festivals* (saith *H C.*) which the Church of *Rome*, and most *European Nations* subject thereunto have endeavoured to amend, by adding 10 Days, before our Account, which is called *New-Style*, and by adding one Day every Century or 100 Years, since the Year 1700, they reckon 11 Days before us. so that their Twentieth is our Ninth Day of *August*.

IV. *How many Times doth the Clock strike in 24 Hours.*

1	Days in one Year	365
2		
3	Strikes in 24 Hours	156
4		
5		
6		
7		
8		2190
9		1825
10		165
11		
12		

in a Day 78	{ ——— It Strikes ——— 56940 }
in a Night 78	
Day and Night 156	

Young Man, when thou hearest the Clock strike, say, *L O R D* teach me to number my Days, that I may apply my Heart unto Wisdom, Psalm 90. 12. Also when the Clock strikes, say, So much nearer Eternity, The next Minute, and all my remaining Time, I entirely dedicate to thy Glory, O *L O R D*,
most

most Merciful, That my past Hours, and so many Years of my Life, will never return again, but must all be accounted for at Christ's Tribunal.

*Make much of every Moment of your Time,
In Wisdom's School this Lesson is the Prime.*

V. Suppose a Piece of Land be 26 Poles in length, and 182 in breadth, How many square Poles are therein.

Note, That a Pole in length is 16 Foot and an half, and a Pole of Land is a square Piece of Ground, 16 Foot and a half each ways. See the 5th Example in Division.

Length	236
Breadth	182

This may be multiplied after the same manner as the last Example was done, beginning at the Figure 2 of the breadth, saying 2 times 6 is 12, setting the 2 of the 12

	472
	1888
	236
Poles	42952

under the overmost Line, keeping 1 in mind. Next, 2 times 3 is 6, and the 1 kept in mind makes 7, &c. as above.

Lastly, Adding up the three Rows of Figures between the Lines, and the square Poles are, 42952 as in the Margin.

VI. To multiply any Number by 10, 100, 1000, &c. 20, 200, &c. set it down as follows.

Here you see I set down the Cyphers besides the other Figures of the Multiplicand, and multiply thus, *viz.* the 1 under 3.

$$\begin{array}{r} 453 \\ \times 100 \\ \hline 45300 \end{array}$$

First. The two Cyphers of the 100 I set below the Line. Next, I say 1 times 3 is 3, which I set below the Line, &c. so that 100 times 453 is just 45300, that is, 45 Thousand, 3 Hundred.

VII, How many Barly Corns will reach from London to Bedford, if 40 Miles asunder.

First, Multiply 8 by 40, and the Product is 320. Next, Multiply the 320 by 33, and so on.

Furlongs in a Mile.	8
Poles in a Furlong.	40
Poles in 1 Mile in length.	320
Half Feet in a Pole.	33
	960
Half Feet in a Mile.	10560
Inches in half a Foot	6
	Inches

Inches in a Mile.	63360
Barly Corns in an Inch.	3

Corns in a Mile.	190080
Miles to London.	40

Barly Corns in 40 Miles.	7603200

Thus read 7 Millions, 6 Hundred and 3 Thousand,
2 Hundred.

VIII. Suppose it was ask'd, How many Barly Corns
in length will reach from London to York, accounted
150 Miles.) set it thus :

Barly-Corns in a Mile.	190080
Miles from London to York.	150

9504000
190080

Barly-Corns.	28512000

28 Millions, 512 Thousand.

Note, An English Mile is 8 Furlongs, as above)

A Scottish an Irish Mile, about one Mile and an half
English.

A Dutch and Polish Mile, three English Miles and
an half.

A French, Italian, an Turkish League, near two
two Miles and 3 Quarters, English Miles.

A German Mile better than 4 English Miles.

The Russian Mile, about 3 Quarters of an English
Mile.

The *Arabian* Mile, an *English* Mile and a quarter.
 The *Hungarian* Mile, is 5 Miles *English*.
 The *Moguls*, a Mile and a half *English*.

IX. If one Seaman has 14s. the Month Wages, what will the Wages of 3349 Seamen for the same Time come to?

$$\begin{array}{r} 3349 \\ 14 \\ \hline 13396 \\ 3349 \\ \hline \end{array}$$

Shil. 46886 Answer.

The Answer is 46886 Shillings, which you may reduce into Pounds by the second Example in Reduction.

X. If there is a square pitched Field of Soldiers, containing 148 Men in Rank, and 148 Men in File, how many Men are they?

$$\begin{array}{r} 148 \\ 148 \\ \hline 1184 \\ 592 \\ 148 \\ \hline \end{array}$$

Soldiers, 21904

XI. If an Orchard contains ten Squares, and every Square 10 Trees, and every Tree 10 Branches, every Branch 10 Apples, how many Apples are there in the Orchard? I Answer Ten Thousand, viz.

For 10 Squares, thus: 10

10

100

Ten

10

Thousand

1000

10

Apples,

10000

To Prove Multiplication.

Divide the Product the Multiplicand, or Multiplier, and the Quotient will be one of them.

This you cannot do, before you have Learned the next Rule, viz. Division.

D I V I S I O N.

Note, That many Young Men, yea, Boys, do often very readily learn Casting an Account, as they call it, and when they are come as far as this very useful Rule of *Division*, make a Stop, concluding its too hard to be Learn'd without a Tutor. I say, let none be discouraged, but observe well the Directions that follow, For,

In *Divison* (as in *Multiplication*) there are three Terms to be kept in memory (that is to say) the Dividend, Divisor, and the Quotient, which will plainer appear by the Question that follows.

I. Example. Let 576l. to be devided among four Men, the two Numbers are thus placed.

Divisor. Dividend. Quotient.
4) 576 (

The Number 576 is called the Dividend, the Figure 4 before it (which is to divide by) is called the Divisor; and those Figures that shall be in the crook-ed Line, are called to Quotient. For,

*Division, one Sum or Number doth part,
By another truly, by Rule and Art.*

Now Young Man, if thou hast a Desire to know how to divide the aforementioned 576l. among

among four Men, take Pen, Ink, and Paper, and set the Sum thus.

$$4) 576 ($$

And work it with thy Pen, according to the Reading which follows.

Saying, how often can I have 4 in the 5? but 1 time, therefore I set the Figure 1 in the Crooked Line, called the Quotient, and say, 1 times 4 is 4, setting the 4 under the 5, and subtracting it from it, saying, 4 from 5 and there remains 1.

$$\begin{array}{r} 4) 576 (1 \\ \underline{4} \\ 1 \end{array}$$

Next, I make a Dot under the Figure 7, which is to shew I have taken it down, and set the 6 next to the one thus; then I ask how oft I can have the Divisor 4 in 17, which I find will be 4 times, so I set the Figure 4 in the Quotient, and say, 4 times 4 is 16, which I set under the 17, and subtract it from it, and there remains 1, as in the Margin

$$\begin{array}{r} 4) 576 (14 \\ \underline{4} \\ 17 \\ \underline{16} \\ 1 \end{array}$$

Lastly, I make a Dot at the third Figure of the Dividend, which is 6, and take it down, and set it down by the 1, and it makes 16, then I ask how many times I can have 4 the Divisor in 16, and find 4 times; I set 4 in the Quotient, and multiply the Divisor 4 by the 4 I set in the Quotient which makes 16 and set it under 16, and subtracting, find 0 remains as in the Margin,

$$\begin{array}{r} 4) 576 (144 \\ \underline{4} \\ 17 \\ \underline{16} \\ 16 \\ \underline{16} \\ 0 \end{array}$$

So

So that 576*l.* divided among 4 Men, each Man must have 144*l.*

The Proof is by multiplying the Divisor 4 into the Quotient 144, and the Product will be 576 divided thus.

144

4

576

Proof 576 equal to the Dividend.

To Divide 32956, by 7

Set it down thus. 7) 32956 (

Saying, How oft can I have 7 in 32? I can have it 4 times, therefore I set 4 in the Quotient, and say, 4 times 7 is 28, take 28 out of 32 rests 4 to be set under the 8, as in this Margin.

7) 32956 (4
28

Next, I dot at 9 in the Dividend, and take it down and set it by the remainder of the Subtraction, and it makes 49 as in the Margin; then I say, how oft can I have 7 the Divisor in 49 the new dividend? and it being 7 times, I set 7 in the Quotient, and multiply the Divisor by that 7 which makes 49, which 49 I set under the other, and subtract as in the Margin, and there remains 0.

4
7) 32956 (47
28
49
49
0

I 3

Next

Next, I make a Dot at the Figure 5 and take it down and set it by the 0, in the remainder of the Subtraction, and say, how oft can I have 7 out of 5, which because I cannot have at all, I set 0 in the Quotient, as in the Margin.

$$\begin{array}{r} 7 \overline{) 32956} \text{ (470} \\ \underline{0000} \\ 28 \\ \underline{0000} \\ 49 \\ \underline{0000} \\ 49 \\ \underline{0000} \\ 05 \end{array}$$

Lastly, I make a Dot at the last Figure of the Dividend which is 6, and bring that down and set it by the 5, and it makes 56 for a new dividend, and say how many times can I have 7 the Divisor out of 57 the dividend? and find it 8 times; therefore I multiply 7 my Divisor by 8 in in the Quotient, and it being 56, I set it under the dividend, and subtract, and find 0 remains as in the Margin. Thus the Number 32956 is divided into 7 Parts, 1 Part being 4708.

$$\begin{array}{r} 7 \overline{) 32956} \text{ (4708} \\ \underline{0000} \\ 28 \\ \underline{0000} \\ 49 \\ \underline{0000} \\ 49 \\ \underline{0000} \\ 056 \\ \underline{0000} \\ 56 \\ \underline{0000} \\ 0 \end{array}$$

II. Divide 87960l. among 20 Men.

Set the Sum thus $20 \overline{) 87960}$ (

And because there is a 0 in the last Place of the Divisor, I cut off one place in the Dividend, and work without it as below.

$$20 \overline{) 87960} \text{ ($$

Next, I say, how oft can I have the Divisor 2 in the first Figure of the Dividend 8, it being 4 times, I set 4 in the Quotient, and multiply 2 the Divisor by is, and it be-

$$\begin{array}{r} 20 \overline{) 87960} \text{ (4} \\ \underline{0} \\ 8 \\ \underline{0} \\ 0 \end{array}$$

ing.

ing 8 I set it under 8, and subtract 8 from 8 and 0 remains, as in the Margin, and then proceed as before; the same is to be observed if you divide by 10, 100, &c. or 30, 40, 200, &c.

III. Let 20736l. be divided among 12 Men.

I set the Sum thus,

12)20736(

There being 2 Figures, I make a Dot at 0, the second place of the Dividend and count it 20; then I ask how oft I can have the Divisor 12 out of the dividuall 20? I find but once, I therefore set 1 in Quotient, and multiply 12 the Divisor by 1, and set it down under the 20, and draw a Line and subtract, and there remains 8, I set it down under it, and it will stand as in the Margin.

12)20736 (1
12
——
8

Next, I make a Dot at the third Figure of the Dividend, which is 7, and bring it down and set it on the Right-Hand of the Figure 8, and it makes 87, for a new Dividual; then I ask how oft I can have 12 the Divisor out of 87 the Dividual? which being 7 times, I set 7 in the Quotient, and multiply 72 the Divisor by it, and it bring 84. I set it under the 87, and drawing a line I subtract 84 from 87, and there remains 3, and the Work will stand as in the Margin.

12)20736 (17
12
——
87
84
——
3

Next, I make a dot at the fourth Figure of the Dividend which is 3, and bring it down, and set it on the Right-Hand of 3 the remainder of the last Subtraction, and it makes 33 for a new Dividual; then I ask how oft I can have 12 the Divisor out of 33? and it being twice, I set a Figure of 2 in the Quotient, and multiplying 12 the Divisor by 2, it makes 24, which I set under 33, and draw a Line, and having Subtracted it from 33 there remains 9, and the Work will stand as in the Margin.

$$\begin{array}{r}
 12 \overline{) 20736} (172 \\
 \underline{12} \\
 87 \\
 \underline{84} \\
 33 \\
 \underline{24} \\
 9
 \end{array}$$

Next, I make a dot at 6 the last Figure of the Dividend, and bring it down and set it at the Right-Hand of the 9, and it makes 96 for a new Dividual; then I ask how oft I can have the Divisor 12 out of the new Dividual 96, and it being 8 times, I set 8 in the Quotient, and multiply the Divisor 12 by the Figure 8, and it makes 96, which I set under the Dividual 96 and drawing a Line, I Subtract and there remains nothing, and the Work will stand as in the Margin.

$$\begin{array}{r}
 12 \overline{) 20736} (1728 \\
 \underline{12} \\
 87 \\
 \underline{84} \\
 33 \\
 \underline{24} \\
 96 \\
 \underline{96} \\
 0
 \end{array}$$

So that if 20736 Pound is to be divided between 12 Men, each Man will have 1728l.

Having

Having Learned thus far, go to the first Question in *Reduction*, &c, to work small Questions in that Rule, and then come hither again to work the *Division* Sums that follows.

*IV. If the King's Revenue comes to 250000*l*. by the Year, How much comes it to by the Week?*

Divide by 52 the Weeks in a Year.

Here because 5 the first Figure of the Divisor 52 is bigger, than the first Figure in the Dividend 2, I take 3 Places for the first Dividual, dotting at 0, which I count 250, saying, how oft can I have 52 out of 250? or how oft can I have 5 the first Figure of the Divisor out of 25 the 2 first Figures of the Dividend? which tho' I can have it just 5 times, yet because there is no just remainder, that I cannot have 5 times 2 out of 0, I take it but 4 times, and set 4 in the Quotient, and multiply 52 the Divisor by that 4, which makes 208, which I set under the 250, and draw a Line and Subtract, and there remains 42. and the Work will stand as in the Margin.

Next I dot at the fourth place of the Dividend, which is a Cypher also, and bring that down and set it at the right side of the 42, the remainder after Subtraction, and it makes 420 for a new Dividual; then I ask how oft I can have the Divisor 52 out of the Dividual 420, or how oft can I have 5 the first Figure 52 out of 42, the 2 first Figures

I 5

of

of the Dividual, and find it will go 8 times, therefore I set 8 in the in the Quotient, and multiply 52 the Divisor by that 8, and it makes 416, which I set under the 420, and draw a Line and subtract, and there remains 4, and the Work stands as in the Margin.

$$\begin{array}{r} 52 \overline{) 250000(48} \\ \underline{208} \\ 420 \\ \underline{416} \\ 4 \end{array}$$

Next, I make a Dot at the fifth place towards the Right-Hand of the Dividend and take down the Cypher, and set it at the Right-Hand of the 4 that remained after Subtraction, and it makes 40, but because I cannot have the Divisor 52 out of the new Dividual 40, I set a Cypher in the Quotient, and it will stand as in the Margin.

$$\begin{array}{r} 52 \overline{) 250000(480} \\ \underline{208} \\ 420 \\ \underline{416} \\ 40 \end{array}$$

Next, I make a Dot at the last place of the Dividend, and bring down the Cypher, and set it at the Right-Hand of the 40 for a new dividual, and it makes 400, then I ask how oft I can have the Divisor 52 out of the Dividual

400? or how oft can I have 5 the first Figure of the Divisor 52 out of the two first Figures of the Dividual 40, and find it will go but 7 times, therefore I set 7 in the Quotient, and multiply 52 the Divisor by 7, and it makes 364, which I set under the 400, and having drawn a Line I Subtract, and there remains 36, as in the Margin.

$$\begin{array}{r} 52 \overline{) 250000(4807} \\ \underline{208} \\ 420 \\ \underline{416} \\ 400 \\ \underline{364} \\ 36 \end{array}$$

So that if the King's Revenue for one Year comes to 250000*l.* it is by the Week 4807*l.* Remainder 36, is so much of a Pound, or 20*s.* as it wants of 52, or if 20*s.* was divided into 52 Parts or Farthings, is is $18 \frac{24}{34}$ Farthings.

V. *In 42952 square Poles, or Perches of Land, How many Acres, Rods and Poles?*

See the sixth Example in *Multiplication*, now because there are 16 Foot and a $\frac{1}{2}$ in a square Pole of Land both ways, and that 160 such Poles make an Acre, the Poles must be divided by 160; and also because there is a 0, or Cypher in the Divisor, on the Right-Hand.

Set the Sum down thus, 106) 42952 (

Here because I have a Cypher in the first place of my Divisor towards the Right, I cut it off, and Work without it, and I also cut off a Figure in the first place of the Dividend to the Right-Hand, and the Sum will stand thus;

1610) 42915 (2

Then I make a Dot at the second place of my Dividend, and ask how oft I can have 16 my Divisor in 42 the Dividual, and find it will go 2 times, I set a 2 in the Quotient, and multiply 16 the Divisor by 2 I set in the Quotient, which makes 32, therefore I set 32 under 42; and draw a Line, and

and Subtract, and there remains 10, as below.

$$\begin{array}{r} 16 \overline{) 429512} \quad (2 \\ \underline{32} \\ 10 \end{array}$$

Then I make a dot at the third Figure of the Dividend which is 9, and bring it down and set it on the right Hand of the 10 which remain'd after Subtraction, and it makes 109 for a new Dividual, then I ask how often I can have 16 out 109? and I find it will go 6 times, therefore I set 6 in the Quotient, and multiply 16 the Divisor by 6 in the Quotient, and it makes 96, which I subtract from 109, and there remains 13 as in the Margin.

$$\begin{array}{r} 16 \overline{) 429512} \quad (26 \\ \underline{32} \\ 109 \\ \underline{96} \\ 13 \end{array}$$

Then I make a dot at 5, the next Figure in the Dividend, and bring it down and set it at the right-Hand of 13, and it makes 135 for a new Dividual; then I say how often can I have the Divisor 16 out of the Dividual 135? and I find it will go 8 times, therefore I set 8 in the Quotient, and multiply

ply 16 the Divisor by 8, and it makes 128, which I set down under 135, draw a Line and Subtract, and there remains 7 as below:

$$\begin{array}{r}
 16 \cdot 0 \overline{) 429512} \quad (268 \\
 \underline{32} \\
 109 \\
 \underline{96} \\
 135 \\
 \underline{128} \\
 7
 \end{array}$$

And the Answer is 268 Acres, and the remainder is $\frac{72}{160}$ of an Acre or 72 Poles.

VI. To know when it is Leap-Year; by the Pen:

Divide the present Year by 4, what remains shall be for Leap-Year, 0; for past, 1, 2, 3.

Example.

$$\begin{array}{r}
 4 \overline{) 1727} \quad (431 \\
 \underline{16} \\
 12 \\
 \underline{12} \\
 7 \\
 \underline{4} \\
 3
 \end{array}$$

The Figure 2 which remains, is second after *Leap-Year*. A Year is commonly divided into 12 equal *Calendar Months*, and how many Days each of them has, this Verse will inform you.

*Thirty Days hath September,
April, June, and November:
February, Eight and Twenty alone;
And all the rest have Thirty One;
Unless that Leap-Year doth Combine,
And give to February Twenty Nine.*

Leap-Year is every Fourth Year, and then One Day is added to *February*; and to keep in Memory the Day of the Month, remember what Day of the Week a Month begins. As, suppose it's *Saturday*, the next *Saturday* after, will be the eighth Day, the next Fifteen, the next *Twenty-Two*, and the last *Twenty-Nine*.

And the Year of the Reign of our Gracious King *GEORGE*, began *August* the Eighth, 1714.

VI. *A Penny Idly spent might buy a Yard square of Land, that is, 9 square Feet, after the Rate of 20 l. the Acre.*

Example, In an Acre of Land, are 43560 square Feet: and in 20 l. are 4800 d. which divide thus: (See Measuring of Land.)

Set the Sum thus, $4800 \overline{) 43560}$ (

Now, because two places on the Right-Hand of the Divisor are Cyphers, I cut them off, and Work without

without them, and also cut off two places of the Dividend, and then the Sum will stand as in the Margin.

$$48100 \overline{) 435160}$$

Then, because the two first Figures of the Divisor 48, is more than the first two Figures of the Dividend 43, I take three Figures for my Dividual, which is 435, and ask how often I can have 48 out of 435, which I find I can have 9 times, therefore I set 9 in the Quotient, and multiply 48 the Divisor by 9, and it makes 432, which I set under the Dividend, and draw a Line and Subtract, and there remains 3, and the Work will stand as in the Margin.

$$\begin{array}{r} 48100 \overline{) 435160} \quad (9 \\ \underline{432} \\ 3 \end{array}$$

So that a Penny buys somewhat more than 9 Foot, thus proved by Vulgar Fractions; therefore draw a Line, and set the Remainder 360 on the Top of the Line, and call it Numerator, and set the Divisor 4800 under the Line, and call it Denominator.

$$\underline{360}$$

Thus 4800 so that if a

Foot was divided into 4800 parts, the 360 are so many parts of that Number.

Therefore

Therefore multiply the Numerator 360 by 144 (the square of 12 Inches in a Foot of Land, or Board, the Product is 51840, which divide by 4800 the Denominator, and the Quotient will be almost 13 square Inches more than the said 9 Feet for a Penny.

Now if one Penny will buy one square Foot of good Land; then for every two Shillings you may purchase 216 Square Feet, that is a Piece of Ground of 18 Foot long, and 12 Foot broad. Space enough to build a pretty House upon, or make a little Garden (saith *H. C.*) which being planted, the Fruit thereof may every Year make a Man blush that he shou'd lose such a brave Conveniency, meerly for Drinking an unnecessary Quart of adulterated Sack, or two Bottles of stumm'd Claret, that hold not three Pints, which perhaps impairs his Health, and exposes him as a Drunken Beast, to the Reproach of Human Nature.

*Repent betimes, lest thou too late complain,
For there's a Time when tears will be in vain.*

VII. If 7306242 l. are to be equally levied upon 9034 Parishes, how much must each Parish pay?

Divide the Pounds by the Parishes, and the Quotient shews the Pounds each Parish is to contribute.

Set the Sum thus,

9034) 7306242 (

Now because the 9 the first Figure of the Divisor is more than 7 the first Figure of the Dividend,

I must take a place more of the Dividend for my Dividual, than the Number of the Figures in the Divisor, which is four places, therefore I dot at 2, and say, how often can I have 9 the first Figure of the Divisor out of 73, the 2 first Figures of the Dividend; which I find to be 8 times, therefore I set down 8 in the Quotient, and multiply the Divisor by 8, and set down the Product which is 72272 under the Dividend, and draw a line, and Subtract 72272 from 73062, and there will remain 790, and the Work will stand as below.

$$\begin{array}{r}
 9034 \overline{) 7306242} \quad (8 \\
 \underline{72272} \\
 790
 \end{array}$$

Next I make a dot at 4 in the Dividend, and bring it down and set it on the right-Hand of 790 the remainder after Subtraction, and it will make the Dividual 7904; then I ask how oft I can have the first Figure of the Divisor 9 out of the first Figure of the Dividual which is but 7, and because I cannot have it once, the Divisor 9034 being more than the Dividual 7904, I set a Cypher in the Quotient, and the Work will stand thus,

$$\begin{array}{r}
 9034 \overline{) 7306342} \quad (80 \\
 \underline{72272} \\
 7904
 \end{array}$$

Next I make a dot at 2; the last Figure of the Dividend, and set it at the right-Hand of 7904 for

Therefore multiply the Numerator 360 by 144 (the square of 12 Inches in a Foot of Land, or Board, the Product is 51840, which divide by 4800 the Denominator, and the Quotient will be almost 13 square Inches more than the said 9 Feet for a Penny.

Now if one Penny will buy one square Foot of good Land; then for every two Shillings you may purchase 216 Square Feet, that is a Piece of Ground of 18 Foot long, and 12 Foot broad. Space enough to build a pretty House upon, or make a little Garden (saith *H. C.*) which being planted, the Fruit thereof may every Year make a Man blush that he shou'd lose such a brave Conveniency, meerly for Drinking an unnecessary Quart of adulterated Sack, or two Bottles of stumm'd Claret, that hold not three Pints, which perhaps impairs his Health, and exposes him as a Drunken Beast, to the Reproach of Human Nature.

*Repent betimes, lest thou too late complain,
For there's a Time when tears will be in vain.*

VII. If 7306242 l. are to be equally levied upon 9034 Parishes, how much must each Parish pay?

Divide the Pounds by the Parishes, and the Quotient shews the Pounds each Parish is to contribute.

Set the Sum thus, 9034) 7306242 (

Now because the 9 the first Figure of the Divisor is more than 7 the first Figure of the Dividend,

I must take a place more of the Dividend for my Dividual, than the Number of the Figures in the Divisor, which is four places, therefore I dot at 2, and say, how often can I have 9 the first Figure of the Divisor out of 73, the 2 first Figures of the Dividend; which I find to be 8 times. therefore I set down 8 in the Quotient, and multiply the Divisor by 8, and set down the Product which is 72272 under the Dividend, and draw a line, and Subtract 72272 from 73062, and there will remain 790, and the Work will stand as below,

$$\begin{array}{r} 9034 \overline{) 7306242} \quad (8 \\ \underline{72272} \\ 790 \end{array}$$

Next I make a dot at 4 in the Dividend, and bring it down and set it on the right-Hand of 790 the remainder after Subtraction, and it will make the Dividual 7904; then I ask how oft I can have the first Figure of the Divisor 9 out of the first Figure of the Dividual which is but 7, and because I cannot have it once, the Divisor 9034 being more than the Dividual 7904, I set a Cypher in the Quotient, and the Work will stand thus,

$$\begin{array}{r} 9034 \overline{) 7306342} \quad (80 \\ \underline{72272} \\ 7904 \end{array}$$

Next I make a dot at 2; the last Figure of the Dividend, and set it at the right-Hand of 7904 for

a new Dividual, and ask how oft I can have 9 the first Figure of the Divisor out of 79, the two first Figures of the Dividual 79042, and I find it will go 8 times, therefore I set 8 in the Quotient, and multiply the Divisor 9034 by 8, and the Product is 72272, which I set under the Dividual, and draw a Line, and Subtract, and there remains 6770, and the Work will stand as in the Margin.

$$9034 \overline{) 7306242} \quad (808$$

$$72272$$

$$79042$$

$$72272$$

$$6770$$

Now, If 7306242*l.* are to be equally levied upon 9034 Parishes as above, then each Parish is to contribute 808*l.* but yet there remains the 6770*l.* to be divided, which you may reduce into Pence, by the first Example in *Reduction*, and the Product of Pence divided also by 9034 the Parishes and the Quotient shews the number of Pence more to be added to each Parish.

Proof of Division.

Division is best prov'd by *Multiplication*, for if you Multiply the Quotient by the Divisor, the Product and Remainder, if any, will be equal to the Dividend, as in the first Question in the Rule.

Note.

Note, That the Young Man may be the more perfect in this useful Rule of *Division*, for his Encouragement, I shall give him the following Sums for Practice, setting Q. for the Quotient, and R. for the Remainder.

86) 59942 (697 Q.

25) 52500 (2100 Q.

242) 323070 (1335 Q.

39) 456832 (3929 Q.

597) 114241 (597 Q.

92) 191520 (3683 Q.

112) 87525 (781 Q.

R. 53

344) 61404 (178 Q.

R. 172

R E D U C T I O N.

Reduction is wrought by the foregoing Rules, for any greater Number or Name is turned to a lesser by *Multiplication*.

For if you multiply Pounds in Money by 20, the Product is Shillings: Or Shillings by 12, the Product is Pence; Or Pence by 4, the Product is Farthings.

Any lesser Number or Name is turned into a greater by *Division*, for if you divide any Number of Farthings by 4, the Quotient shews the Pence, or Pence divided by 12, shews Shillings in the Quotient; and Shillings divided by 20, gives in Quotient Pounds in Money.

I. 896 l. How many
Shillings, Pence, and
Farthings?

$$\begin{array}{r}
 896 \text{ l.} \\
 20 \\
 \hline
 \text{Shillings } 17920 \\
 12 \\
 \hline
 35840 \\
 17920 \\
 \hline
 \text{Pence } 215040 \\
 4 \\
 \hline
 \text{Farthings } 860160
 \end{array}$$

II. How many Shillings,
Pence, and Farthings is
13

$$\begin{array}{r}
 \text{l. s. d.} \\
 163 \cdot 13 \cdot 8 \\
 20 \\
 \hline
 \text{Shillings } 3273 \\
 12 \\
 \hline
 6554 \\
 3273 \\
 \hline
 \text{Pence } 39284 \\
 4 \\
 \hline
 \text{Farthing } 157136
 \end{array}$$

III. In 860160 Far-
things, How many Pence,
Shillings, and Pound?

$$\begin{array}{r}
 4) 860160 (215040 \\
 8 \\
 \hline
 06 \\
 4 \\
 \hline
 20 \\
 20 \\
 \hline
 016 \\
 16 \\
 \hline
 0
 \end{array}$$

$$\begin{array}{r}
 12) 215040 (17920 \\
 12 \\
 \hline
 95 \\
 84 \\
 \hline
 110 \\
 108 \\
 \hline
 24 \\
 24 \\
 \hline
 0
 \end{array}$$

210) 179210 (896

16

19

18

12

12

0

First, According to the Rule before, I am to Multiply the 163 l. by 20, then set the Cypher 0 under the Line, but instead of that, I set 3 of the 13s. Next, 2 times 3 is 6, and the 1 belonging to the 13, makes 7, &c. and Multiplying the Shillings by 12, I add the 8d.

Note, That an Hundred Weight (as above) is 112 Pound: How many Pound is there in Five Hundred and Three Quarters, as in the Seventh Question in the *Golden Rule*, viz.

In 5C. 3q. How many Pound Weight?

4

23

28 in a quarter of C. is 28½. or Tod.

184

46

644 l.

IV. In 798 l. How many Nobles, Marks, Crowns, Shillings, Pence, and Farthings?

Three Nobles in 20 s. 3

Nobles in all 2394

2) 2394 (1197 Marks
2
 03
2
 19
 18
14
 14
0

The Nobles being 2394
 I divide them by 2, because
 2 Nobles is a Mark, or
 13 s. 4 d.

Crowns in 20 s. 4

Crowns in all 3192

Five Shillings a Crown 5

Shillings in all 15960

 12

31920

31920
15960

Pence in all 191520

4

Farthings 766080

The **Weights** and Measures ought to be by *Magna Charta*, the same all over *England*, that is, according to the King's Standard kept in the *Exchequer* by the Clerk and Comptroller of the *Market*.

The **Weights** now used throughout all *England* are of two sorts, the one called *Troy Weight*, and the other *Averdupois*; the first containing 12 Ounces, and the other 16 in the Pound; but the Ounce *Averdupois* is lighter than the Ounce *Troy* by almost a 12th Part; for whereas in *Troy-Weight*, the Ounce consists of 480 Grains, the Ounce *Averdupois* containeth but 438.

By the *Troy-Weights* are weighed Pearls, Precious Stones, Gold, Silver, Bread, all manner of Corn and Grains; and this Weight the *Apothecaries* do, or ought to use.

By *Averdupois* are weighed all Gro- *Smith the*
cery-Ware, Flesh, Butter, Cheese, *Author of the*
Iron, Hemp, Flax, Tallow, Wax, *New State of*
Lead, Steel, and all things wherof *England.*

comes waste. In Consideration where
of, 112 Pounds *Averdupois* goes to an Hundred
Weight, and proportionably 56 Pound to Half an
Hundred, and 28 to a quarter or *Tod*. A Stone a-
mong the *London Butchers* make 8 Pounds of this
Weight, but in the Country it is for the most
Part 14. In

In *Troy-Weight* 20 Grains make a Scruple, thus marked $\mathfrak{S}$ 3 Scruples make a Dram $\mathfrak{D}$ 8 Drams an Ounce $\mathfrak{O}$, and 12 Ounces a Pound $\mathfrak{L}$.

In *Averdupois Weight* 16 Drams make an Ounce, 16 Ounces a Pound; 28 Pound a quarter, 4 quarters a Hundred, and 20 Hundred a Tun.

In *Troy Weight* 24 Grains make a Penny-weight Sterling, 20 Penny-weights an Ounce, and 12 Ounces a Pound. And when Wheat is at Five Shillings the Bushel, the Penny-Loaf is then by the Statute to weigh 11 Ounces, Troy, and three-half-penny white Loaves to weigh as much; but the Household Penny Loaf is to weigh 14 Troy Ounces and 2 Thirds. See the Sixth Example in *Addition*.

As for the Weight called *Venice-Ounce*, used as in other Countries by Silk Men, there is no Standard of it, nor is it allowed by Law; this Ounce is but 13 Penny-weights and 12 Grains, it falls out that 12 Ounces *Venice* is but 8 Ounces 4 Penny-weights *Troy*, and 9 Ounces *Averdupois*.

Applicative Measures, or Things measured outwardly.

OF this sort there is first, 3 Barly Corns in length an Inch, or Fingers Breadth, 4 whereof make a Handful, and 12 Inches a Foot; Now 3 Feet make a Yard, and 1 Yard and a quarter an Ell. Five Feet makes Geometrical Pace, 6 a Fathom, 5 Yards and a half, or 16 Feet and a half, a Perch, Pole, or Rod, 40 Perches in Length a Furlong, 8 Furlongs, or 320 Perches an English Mile, and 3 English Miles a French League.

But this observe by the way, that by a Statute made in the Reign of King Henry the Seventh an English Mile ought to be 1760 Yards, or 5280 Feet, that is 280 Feet more than the Italian Mile. So that an English Mile is Furlongs 8, Chains of 4 Perches long 80; Paces 1052; Ells 1408; Links of the Chain 8000; Inches 63360, or Barley Corns 190080. Now an Acre of Land in England consists of 40 Perches in Length, and 4 in Breadth, a Yard Land, commonly of 30 Acres and a Hide of Land of 100 Acres.

In a square Mile, are Acres 64, Chains 6400, Perches, 102400, Paces 1115135, square Links 640000000, or square Inches 4014180600.

Of Receptive Measure, that is, Things Measured inwardly.

FIRST. For Liquid Measure, or things that are wet, as a Pint, which is subdivided into lesser Parts, as Half a Pint, a Quatern, or quarter of a Pint, now two Pints makes a Quart makes 2 Quarts a Gallon, 8 Gallons a Firkin of Ale, and 9 a Firkin of Beer; two Firkins of either sort makes a Kilderkin, and 2 Kilderkins a Barrel, but still the Difference in a Number for Gallons as to Beer and Ale ought to be noted and allowed; for as as a Kilderkin of Beer contains 18 Gallons, and one of Ale 16; a Barrel of Beer being double a Kilderkin, contains 36 Gallons, and one of Ale but 32. Now a Barrel and a half of Beer (being 54 Gallons) makes a Hogshead, 2 Hogsheads a Pipe or Butt, and 2 Pipes a Tun.

Note, That a Barrel of Butter, or Soap, is the same with a Barrel of Ale. As for Wine Measures they

they fall so much short of those of Ale and Beer, that 4 Gallons of these makes 5 Gallons of Wine-Measure. Thus they hold proportion, as 4 to 5 of these Gallons, a Runlet of Wine holds 18, half a Hogshead 31, and half a Tierce 42, a Hogshead 63, and a Puncheon 84, a Pipe or Butt 226, a Tun 252.

Secondly, For dry Things, such as Corn or Grain, there is first the Gallon, of a Size between the Wine and the Gallon, 2 of these Gallons makes a Peck, 4 Pecks a Bushel, 4 Bushels a Comb, or Curnock, 2 Curnocks a Quarter, 10 Quarters a Last or Way.

V. In 52 Acres, 3 Rods, and 27 Poles of Land, how many Poles.

A.	R.	P.	Note, That here I
32	3	27	Multiply 32 by 160,
160	40		(the Poles in an Acre)
1920	120		and the Product is 5120
32			and Multiply the Rods
			by 40, the Poles in a
			Rod, gives 120 Poles,
			so added to the other
			with the 27 odd Poles
			make 5267 Poles in all.
5120 Poles			
120 } Poles added,			
27 }			
5267 Poles in all			

VI. In 88 $\frac{1}{2}$ Troy, How many Ounces, Pennyweights, and Grains? See the sixth Example in Addition.

88 $\frac{1}{2}$	Proof 24)	506880	(21120 P.W.
12		48	
176	26	210	211210 (1056 Oz,
88	24		
1056 Oz.	28		
20	24		
21120 Pen. Weig.	48	12)	1056 (88 Pounds.
24	48	96	
84480	0	96	
42240		96	
506880		0	

GOLDEN RULE.

Or, The Rule of Three Direct.

*The Rule of Three Direct, by Numbers three,
Finds a Fourth, that shall in Proportion be.*

ALL Questions in this Rule of Three consist of Three Numbers, whereof two are alwas of one Kind, or Denomination. As in this Example.

*If I give 10s. for 5 Yards, what shall I give for 15
Yards at the same Rate.*

Now two of these are of the same Kind, that is, the Number of 5 and 15, which are both Yards, which place thus. The double Number, concerning which the Question is ask'd, must always be in the third Place.

Now in this Question the 15 Yards is the double Number; and the Price of which the Question requires, place it therefore in the third place.

Then seek out the other Number of the same Kind, or Denomination, which must be Yards also, which in this Question is 5, set this in the first place, and then the other Number (that is 10s.) will consequently claim the second place, and the Answer to the Question will be always of the same Denomination with it, (that is) Shillings.

Now the Question stated according to the foregoing Rules stands thus.

I. If



I. If 5 Yards cost 10s. what will 15 Yards cost?

$$\begin{array}{r} 15 \\ \hline 5 \overline{) 150} \quad (30 \\ 15 \\ \hline 00 \end{array}$$

*Multiply the second Number by the third;
Product divide by the first to catch the Bird.*

Note, That the three Numbers are 5, 10, 15.

Proof of the last Question.

II. What shall I pay for 5 Yards, when 15 Yards is sold for 30 Shillings?

If 15 Yards cost 30s. what will 5 Yards cost?

$$\begin{array}{r} 5 \\ \hline 15 \overline{) 150} \quad (10 \text{ Answer.} \\ 15 \\ \hline 00 \end{array}$$

III. If one Bushel of Rye costs 3s. 6d. what will a Last, or 10 Quarters cost after that Rate?

First, Reduce the 3s. 6d. into Pence, that is 42d. and the Quarters 10 into Bushels, that is 80, and set the Question thus.

K 3

If

If 1 Bushel cost 42d. what will 80 Bushels cost?

80

3360

The first Number (or place being 1) will neither Multiply nor Divide, then bring the 3360 d. into Shillings 12.

12) 3360 (280 Shillings
24

96
96

0

210) 2810 (14l.
2

08
8

0

The Proof of this, and the like Questions, Reduce the Answer into Pence, to know whether your work be right as appears in the Margint.

14 l.
20

280
12

560
280

3360

IV. If a Chaldron of Coals (that is 36 Bushels) cost 22s. what will 1 Bushel cost?

Reduce the 22s. into pence, by Example 1, in Reduction makes 264 d. which divide by 36 thus.

Now

Now the Remainder 12 being the third Part of the Divisor 36, shews the part of a penny, that $\frac{1}{3} d.$ so that a Bushel at 22s. at Chaldron will cost 7d. a third part of a Penny.

$$\begin{array}{r} 36 \overline{) 264} \text{ (7 d. } 12 \\ \underline{252} \\ 12 \end{array}$$

V. If 112 $\frac{1}{2}$ lb. of Tobacco cost 400d. what will 1 lb. cost?

Divide the 400d. by the 112 $\frac{1}{2}$ lb. weight, and the Quotient gives 3d. the Pound, and the Remainder will be 64, which is somewhat above half, the Divisor 112 shews that the $\frac{64}{112}$ Fraction is somewhat more than half a Penny, to be added to the 3d. the Pound above.

VI. If I paid 422l. for 525 Quarters Malt, what is the Price of 1 Quarter after that Rate?

Which being stated stands thus.

Qu. *l.* *Qu.*
If 525 costs 432 what will 1 cost;

Note, That in this question you cannot Multiply the second Number by the third, because the third Number (or place) is but one.

Therefore to perform this question with ease, reduce 432l. into Farthings by the first Example in Reduction, makes 414720 Farthings to be divided, which divide by 525, the Quarters of Malt, and the Quotient; the Answer is 789 Farthings, the Remainder after the Division is ended, are but the parts of a Farthing.

Lastly, The 789 Farthings being reduced, are 16 s, — 5 d, — 1 q. Therefore, if 525 Quarters

K 4.

ters

ter of Malt. (or Tods of Wool or Goods) be Sold for 432*l.* one Quarter will cost 16*s.* 5*d.* 1*q.* after that Rate.

VII. If a Greecer bought 5 $\frac{3}{4}$ C weight of Nutmegs, which cost him 163*l.*—13*s.*—8*d.* How may he Sell 1 $\frac{1}{2}$ C weight without Gain or Loss?

Reduce the Money into Pence, makes 39284*d.* for the Dividend, and 5 $\frac{3}{4}$ C weight into pound weight, by the third Example in *Reduction*, makes 644 pound weight for the Divisor; then divide the 39284 by 644, and the quotient gives 61 Pence, the price of one pound, 2*s.* 5*s.* and 1*l.*

Note, That what Sum of Money you desire to gain add it to the price, and work as above, to know what the price of one pound will be, so will you know what you get by every single pound.

Note, That if the Yearly Rent of 20*l.* belonging to 7 Landlords, or if 2*l.* were a Legacy to be divided equally among 7 Children, what is each part?

Reduce the 20*l.* into Farthings, and they are 19200, which divide by 7, the quotient gives 2742 Farthings, for each Landlord, from which you may Subtract the Taxes.

By the same Rule you may draw a Composition of Debts, for if a Man owe to several Creditors, as suppose it comes to in all 25*l.* 16*s.* Reduce it into Farthings, and divide it by the Number of Pounds, owing, &c. as,

Suppose

Suppose a Man leaveth 13l. to pay his Debts and he owes one Man 5l. the Second 6l. and the Third 7l. which makes 18l: what is each Man's share?

	<i>l.</i>	<i>s.</i>	<i>d.</i>	<i>q.</i>
To the first	3	12	2	2
Second	4	06	8	0
Third	5	01	1	2
	13	00	0	0

VIII. If 28 Quarters of Barley, cost 30l. 10s. 6d. tell me what 84 Quarters come to at that Rate?

Qrs.	l.	s.	d.	l.
28 costs	30	10	6	what will 84 buy?
	20			
	6:0	56		28) 615384 (21978 Pence.
Shillings	12			
	1226	55		
	610	28		
		273		
Pence	7326	252		
	84			
	29304	218		
	58608	196		
		224		
Sum	615384	224		

	co
12) 21978 (1831 Shillings.	
12	210) 18311 (91l. 11s. 6d.
	18
99	
96	03
	2
37	
36	1
18	
12	

6 Pence.

84 Quarter

84 Quarters comes to 9l.—11s.—6d.

$$\begin{array}{r}
 20 \\
 \hline
 1831 \\
 12 \\
 \hline
 3668 \\
 1831 \\
 \hline
 21978
 \end{array}$$

For a Proof I reduce the 9l.—11s.—6d. into Pence.

IX. If 50l. 8s. be paid for 112 yds. how much is that for 7 Yards?

Note, The 50l. 8s. being reduced into Shillings the Question will stand thus.

If 112 Yards cost 1008s. what will 7 Yards cost?

$$\begin{array}{r}
 7 \\
 \hline
 112 \overline{) 7056} \text{ (63s. Answer} \\
 \underline{672} \\
 336 \\
 336 \\
 \hline
 0
 \end{array}$$

X. If 3l. 3s. be paid for 7 Yards of Cloth, how many Yards shall I have for 25l. 4s.

If 63s. buy 7 Yards, what will 504s. buy.

$$\begin{array}{r}
 63 \overline{) 3528} \text{ (56 yds Answer. 7} \\
 \underline{315} \\
 378 \\
 378 \\
 \hline
 0
 \end{array}$$

XI. If

XI. If 2l. 14s. 3d. be Paid for three Yards and an half, what shall I pay for 27 Yards and 3 Quarters?

Note, The 27 Yards and $\frac{3}{4}$ being reduced, and the Money into Pence, it stands thus.

Quarters	d.	Quarters.
14	651	111
	111	
	651	
	651	
	651	
	72261	

The Dividend, the first Number 14 being the Divisor.

$$14 \overline{) 72261} (5161 \text{ Pence}$$

70

22

14

86

84

21

14

7

$$12 \overline{) 5161} (430 \text{ Shillings}$$

48

36

36

01

$$20 \overline{) 430} (21 \text{ l. } 10 \text{ s. } 1 \text{ d. Answer}$$

XII.

XII. How many Yards of Cloth shall I buy for 2*l.* 1*s.* 1*d.* when three Yards and an half is sold for 2*l.* 14*s.* 3*d.*

First, Reduce the 2*l.* 14*s.* 3*d.* into Farthings, which makes 2604, for the first Number; next the three Yards and an half into quarters, which makes 14 for the second Number, and the 2*l.* 1*s.* 1*d.* 2*q.* and it makes 20694 Farthings, then multiply that by 14 and the Product is 289716, to be divided by 2604, and the quotient gives 111 quarters of Yards, to divide by 4 (the quarters in a Yard) and the quotient is 27 Yards $\frac{3}{4}$ viz. three quarters Answer.

Thus stated being reduced.

Farthings.	Quarters.	Farthings.
2604	14	20694
		14

XIII. If one Pound of Iron cost three Pence half-penny, what will 7*l.* $\frac{3}{4}$ and 17*lb.* cost?

4

31 Quarters of Hundreds
28 Pounds in a $\frac{1}{4}$ of an Hundred

255
63

Pounds 885 in 7—3—17
14 Farthings in 3 $\frac{1}{2}$ *d.*

3540
885

12390 Farthings Answer.

$$\begin{array}{r} 4) 12390 \text{ (3097)} \\ 12 \\ \hline \end{array}$$

$$\begin{array}{r} 039 \\ 36 \\ \hline \end{array}$$

$$\begin{array}{r} 30 \\ 28 \\ \hline \end{array}$$

$$\begin{array}{r} 12) 3097 \text{ (258)} \\ 24 \\ \hline \end{array}$$

$$\begin{array}{r} 69 \\ 60 \\ \hline \end{array}$$

$$\begin{array}{r} 97 \\ 96 \\ \hline \end{array}$$

1

$$\begin{array}{r} 210) 2518 \text{ (12)} \\ 2 \\ \hline \end{array}$$

$$\begin{array}{r} 05 \\ 4 \\ \hline \end{array}$$

$$18$$

Answer. 12*l.*—18*s.*—1*d.*—2*q.*

*Note, That this XIII Example may serve for a Rule to reduce Hundreds, Quarters, and Pounds into Pounds, but most Tradersmen set the Weights in short thus 7—3—17 instead of setting them as above 7*l.* $\frac{3}{4}$ and 17*lb.**

Besides this way of Proof, of reducing the Total into Farthings again, is most necessary for Young Learners, in most of the Questions in the Rule of Three.

PROGRESSION ARITHMETICAL.

TO find the Sum of any *Arithmetical Progression*, add the first and last Number together, and Multiply that Product by half the Number of places, and that Product is the Sum. But if the Number of Places be odd, Multiply the said Number of places by half of the first and last added, and that Product is the Sum.

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16,
What the Sum.

16 Last.

1 First.

17 Product.

8 Half of Places.

136 The Sum.

Suppose a Man hireth a Room for a Year, and agreeth to pay the first Week 5*d*. the second Week 9*d*. and for the third Week 13*d*. so paying every Week 4*d* more until 52 Weeks, or a Year is finished, I demand what the Rent will come to.

Answer 23*l*. 3*s*. 8*d*.

	51	12) 5564 (463s.
	4	48
Product	204	76
	5	72
Added	209	44
	5	36
Added	214	8
	26	
	1284	210) 4613 (23l. 3s. 8d.
	428	
Pence.	5564	

Geometrical Progreffion.

Suppose one Sold 12 Ells of Cloth, to receive for the first Ell 1d. the second 2d. the third 4d. and so doubling, what is paid for the 12 Ells.

0, 1, 2, 3, 4, 5 6.

1, 2, 4, 8, 16, 32, 64.

32

128

192

2048

2

Answer 4096 Pence.

Note,

Note. That if this question had been for a Farthing a Button, to the like, the Answer would have been Farthings.

Suppose one Sold a Horse having 4 Shoes, and in every Shoe 6 Nails, to receive for the first Nail 1 Farthing, the second Nail 2 Farthings, the third Nail a penny, and so doubling, how much is paid for the last Nail, and the Price of the Horse? Answer, 17476l 5s.

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.
2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096,
4096

—————

12288

18432

81920

—————
8388608

2

—————

Farthings

16777216
—————

Or if this question had been of a Coat Sole at a Barley Corn a Button, and so doubling to 24 Buttons, accounting (900 Corns to a Pint) I divide the 18777216 by the 900 Corns, the quotient gives about 11641 Pints, which divide by 64, (the Pints in a Bushel) the quotient gives about 292 Bushels, or about 36 Quarters of Barley for the Coat.

Rule:

Rule of Fellowship or Company.

*Into three Parts we fitly may divide
 This Rule; all Donors 'twixt Partners to decide,
 In Gains in Loss, in Time, which frequent are;
 This rule doth part amongst Partners each their Share:
 To treat of Gain, I hold fit first to begin,
 For that brings Joy, the Hearts of all 'twill win.*

A General Rule.

*As General Stock to General Profit bears,
 So each Man's Stock in General Profit shares:*

That is to say,

*Every Man's particular Stock being added together,
 the Total must be the first Number in the Rule of
 Three, the Gains the second, and every Man's parti-
 cular Stock the third: As,*

*I. Suppose two Merchants in Company, A. laid
 in 20l. B. laid in 40l. wherby was gained 50l. what
 is each Man's part of the Gains?*

A. 20	If 60l. gain 50l. what will 20l. gain?
B. 40	20
60	-----
	60) 1000 (16l.—13s.—4d.
	6

	40
	36

	4

If 60l.

If 60l. gain 50l. what will 40l. gain?

40

60) 2000 (33l. — 6s. — 8d

18

20

18

2

II. Suppose two Merchants make a Stock, A. laid in 45l. and B. laid in 68l. whereby was gained 32l. how must the Gains be divided?

A. 45 } If 113l. gains 32l. what will 45l. gain?
B. 68 }

45

160

128

113) 1440 (12l. — $\frac{84}{113}$ A's part

113

310

226

84

If 113l. gain 32l. what will 68l. gain?
68

256
192

113) 2176 (19l. $\frac{29}{11}$; B's part.
113

1406
1017

29

The 29 of the Fraction Multiplied by 240 (the Pence in 20s.) and the Product divided by 113, the Quotient tells the Pence.

III. Suppose three Merchants, *A.* *B.* and *C.* join their Moneys to make a Stock of 25000l. of which *A.* laid in 10000l. *B.* 8000l. and *C.* put in 7000l. with this (after a certain Time of Trading) they gained 7500l. how must this be parted.

If 25000l. gain 7500l. what will 10000l. gain?
10000

25|000) 75000|000 (3000l. for *A*'s part
75

0000

If

If 25000 l. gain 7500 l. what will 8000 l. gain?

8000

251000) 600001000 (2400 l. B's part.

50

100

100

0

If 25000 l. gain 7500 l. what will 7000 l. gain?

7000

251000) 525001000 (2100 l. C's part.

50

25

25

0

A. 3000 l. }
B. 2400 l. } Stocks added,
C. 2100 l. }
7500 l.

If that within one Sum each Partner's Gain
We do add up, and Total we retain,
With general Profit it compar'd agree,
By Work with Praises Crowned ought to be.

Rule of Fellowship with Time. The Rule.

EVery Man's Stock must be Multiplied by his Time, and the Total of those Products added together is the first Number, the Gain: or Loss the second Number, and every Man's particular Stock and Time the third Number,

I. Suppose 2 Merchants in Company, *A.* laid in 100*l.* for four Months: *B.* put in 136*l.* for three Months, and they gained 50*l.* What is each Man's Part?

$$\begin{array}{rcl}
 \begin{array}{l} A. \text{ put in } 100 \\ B. \text{ put in } 136 \end{array} \left. \begin{array}{l} l. \\ \\ \end{array} \right\} \text{Multiply'd by} \left\{ \begin{array}{l} 3 \\ 4 \end{array} \right\} \text{give} \left\{ \begin{array}{l} 400 \\ 408 \end{array} \right\} \\
 \hline
 808 \quad |
 \end{array}$$

*If 808*l.* gain 50*l.* what will 400*l.* gain?*

$$\begin{array}{r}
 400 \\
 \hline
 808 \overline{) 20000} \quad (24l. \frac{608}{808} \text{ } A's \text{ part:} \\
 \underline{1616} \\
 13840 \\
 \underline{3232} \\
 608
 \end{array}$$

If 808l. gain 50l. what wil 408l. gain?

408

400

2000

808) 20400 (25l. $\frac{200}{8}$ B's part.

1616

4240

4040

200

Suppose three Butchers, as A. B. and C. held a Pasture, for which they pay 45l. per Annum, A. hath 24 Oxen 32 Days, B. hath 12 there 48 Days, and C. fed 16 Oxen there 24 Days, what must every Man pay of the Rent?

Oxen.

A. 24

B. 12

C. 16

Days.

32

48

24

Multiplyed by

give

768

576

384

1728

If 1728 gives 45l. what will 768l. give?

45

3840

3072

34560

1728) 34560 (20l.

3456

00

20l. A. pays of the Rent,
B. pays 15l. C. pays 10l.
which makes 45l. Rule

Rule of PRACTICE.

*Practice Abbreviates the Rule of Three,
When the first Number a Unite must be.*

<i>d</i>	Parts.
1	240
2	120
3	80
4	60
5	48
6	40

AT 1d. the Yard Tape, what will
567890 Yards be worth?

Divide the 567890 Yards by 240
(the Parts against a Penny in the
Table) and the Quotient is 2366,
and the 50 the Remainder, 50
Pence.

*At 2d. the Yard, what will 456782 Yards be
worth?*

Divide them by 120, (the Parts against 2d. in the
Table) and the Answer is 3806l. and the Remainder
(after the Division is ended) are Two-pence.

At 3d. the Pound, what costs 91685 Pounds?

Divide by 30, (the Parts, &c.) and the Answer is
1146l. and the Remainder are Three-pences, viz.
1s. 3d.

At 4d. the Ell, what costs 398560 Ells.

Divide the Ells by 60, (the Parts in the Table) and
the Quotient is 6642l. and the Remainder 40 are
Groats, which makes 13s. 4d. more.

At

At 5d. the Pound Sugar, what will 86687 lb. cost?

Divide by 48, (as in the Table, it being the 5 Pence in 20s.) the Quotient gives 1805l. the Answer, only the Remainder 47 are 5 Pence, viz. 19s. 7d. more.

Ginger at 6d. the Pound, what will 8721960 lb. cost?

40) 8721960 (218049l. Answer.

Lastly, At 7d. the Pound, what will 34567 lb. cost?

Note, that this must be done at two Operations: first 4d. then by 3d. as above, and added together.

The Rule of Three is better than this to resolve Questions.

Rule of BARTER.

HOW many Dozen of Candles at 5s. 2d. the Dozen, must be given for 3C. 2q. 16 lb. of Tallow, at 1d. Pound? By the third Example in Reduction.

First, the Tallow being reduced into Pounds makes 108, then say.

L.

lb. d. lb.
 If 1 cost 4 what will 408?

4
1632

Then divide the 1632 d. by 62 (the Pence that 1 Dozen of Candles comes to, and the Quotient shews the Dozens. The Remainder 20 being about 2 Thirds of 62, makes about 8 Pound, or $\frac{10}{3}$ or a Third.

62)1632(26 $\frac{20}{62}$ Doz.
 124
392
 372
20

To Exchange Salt at 20d. a Bushel, for Sugar at 15d the Pound, how many Bushel of Salt will be equal in Value unto 112 Pound of Sugar?

If 1 lb. of Sugar cost 15d. what will 112 lb. cost?

15
560
 112
1680

d. Bush. d.
 If 20 buy 1 of Salt, what will 1680?

20)1680(84 Bushels answer.
 16

08
 8

0

Pleasant

Pleasant Questions.

I. **S**uppose a Poulterer buys 120 Eggs at 3 for a Penny, and buys of some other Person 120 more at 2 for a Penny, and mingles those Eggs together, and sells them 5 for 2 Pence, does he get or lose?

If 2 Eggs cost 1d. what will 120 cost?

2) 120 (40 Pence, or 3s. 4d.

12

00

If 2 Eggs cost 1d. what will 120 Eggs cost?

s. l d.

2) 120 (60 Pence, or 5 ——— 0

12

3 ——— 4

00

Eggs cost 8 ——— 4 added

If 5 Eggs cost 2d. what will 240 Eggs cost?

5) 480 (96 Pence

2

45

480

30

So that he lost 4d. and his Labour.

II. Suppose the Grandfather, the Father, and the Son met together, and spent 20s. when the Reckoning came to be paid, the Grandfather would pay one Half, the Father one Third, and the Son one Quarter, how much must every Man pay of the Reckoning?

L 2

Name-

1 1 1 Numerator.

2 3 4

} The Denominators
} multiply'd make 24,

Then half of 24 — is — 12

The one Third of 24 is — 8

And the quarter of 24 is — 6

Sum 26

$$\begin{array}{r}
 \text{If 26 pay 20s. what must 12 pay?} \\
 26 \overline{) 240} \begin{array}{l} 9 \text{ } 2^6 \\ 234 \\ \hline 6 \end{array} \\
 \hline
 \end{array}
 \qquad
 \begin{array}{r}
 20 \\
 \hline
 240
 \end{array}$$

The Grandfather must pay, *Viz.* 9s. 2d. 3q.

Now, the Young Man may know the Meaning of the Fraction $\frac{6}{26}$ The 6 being the Remainder, it's called the Numerator, and the 26 the Divisor, is call'd the Denominator.

Now to reduce this Fraction into its known Parts it being the Fraction, or Parts of 12d. I multiply the Numerator 6 by 12, (the Pence in 1s.) and divide the Product by the Denominator 26, and the Quotient gives 2d.

Lastly, The Remainder 20, I multiply by 4 (the Farthings in a Penny) and divide the Product by 26, the

the same Denominator, and the Quotient gives three Farthings.

Example.

$$\begin{array}{r} 12 \\ 6 \\ \hline \end{array}$$

$$72$$

$$\begin{array}{r} 26) 72 (2 \\ 52 \\ \hline \end{array}$$

$$20$$

$$20$$

$$4$$

$$80$$

$$\begin{array}{r} 26) 80 (3 \\ 78 \\ \hline \end{array}$$

$$2$$

Note. That the $\frac{2}{8}$ is inconsiderable.

If 26 pay 20s. what must 8 pay?

$$8$$

$$\hline$$

$$160$$

$$\hline$$

26) 160 ($6 \frac{2}{3}$ the Father.

If 26 pay 20s. what must 6 pay?

$$20$$

$$\hline$$

$$120$$

$$\hline$$

26) 120 ($4 \frac{1}{2}$ the Son to pay.

$$104$$

$$\hline$$

$$16$$

s. d. q.

Grandfather

$$9-2-3$$

The Father

$$6-1-3$$

The Son

$$4-7-2$$

$$\hline$$

In all

$$20-0-0$$

$$\hline$$

Proof

III. Suppose a Countryman borrowed of his Neighbour a Stack of Hay 40 Foot square, and he pays him at one Time 20 Foot square, and some Time after 20 Foot square more? did he pay the Quantity he borrowed?

40	20
40	20
1600	400
40	20
Feet 64000	8000
	8000
Borrowed	16000
	Paid.

He paid but a Quarter of what he borrowed.

IV. Suppose a Man hath a Piece of Land lying square, of 120 Perches on each side, containing 480 Perches round about, and another Man has a Piece of Land as many Perches about, but is in Length 140, and in Breadth 100 Perches, which is the least Field?

First Field of 120 Poles on each Side.

$$\begin{array}{r} 120 \\ 120 \\ \hline 2400 \\ 120 \\ \hline \end{array}$$

Square Poles 14400

Now for the Second Field.

$$\begin{array}{r} \text{The length thereof} \quad 140 \\ \text{Breadth} \quad 100 \\ \hline \end{array}$$

Square Poles or Perches 14000

14400 Here I substract the Second from the
14000 Third, rests 400; and so many Poles he
— would have got that had the Field of 120
20400 Poles on each Side, for the narrower the
— Field is, the fewer Poles are therein.

Note, That the square Field was bigger than the long one by 400 Perches, tho' both were 480 Perches about.

V. If there were 160l. to be distributed among a Number of Poor People. some are to have Shillings, some Six-pences, some Groats, and some Three-pences, how

how many poor People will this relieve, so that the Number of those that receive Shillings, Six-pences, Groats, and Three-pences, shall be equal?

The 160 reduced into Pence is 38400 Pence for the Dividend, and the 12d.—6d.—4d.—3d. into Pence also, for the Divisor, makes 25.

25) 38400. (1536

So many Poor of a sort.

25

134

125

90

75

150

150

0

1586

Which may be thus proved.

$\left\{ \begin{array}{l} \text{Shillings} \\ \text{Six-pences} \\ \text{Groats} \\ \text{Three-pen.} \end{array} \right\}$	$\left\{ \begin{array}{l} \\ \\ \\ \end{array} \right\}$	$\left\{ \begin{array}{l} \\ \\ \\ \end{array} \right\}$	$\left\{ \begin{array}{l} \text{is} \\ \\ \\ \end{array} \right\}$	76—16—0
				38—08—0
				25—12—0
				19—04—0

The Sum 160—00—0

1536

4

Poor 6144 in all.

VI. To discover a Number which one shall have in his Mind, without requiring him to reveal any part of that, or any Number whatsoever.

Suppose

Suppose he thought upon _____ 6
 Bid him double it, and it is _____ 12
 To which bid him add some even Number }
 as suppose _____ } 4
 Then the Sum will be _____ 16
 Then bid cast away half, }
 Then he keeps in mind } _____ 8
 Then bid him subtract the first }
 Number he thought upon, and } _____ 2
 then tell him he thinks upon }
 Which 2 is half the Number you bid him add.

VII. In 640 ells of Cloth (being 5 quarters broad)
 how many Yards of 4 quarters broad?

Multiply the 640 by 5, and divide the Product by 4,
 the Quotient gives 800 Yards Answer.

VIII. Suppose one comes to a Draper, and Demands the Price of a Yard of Canvas, the Draper demands Twelve Pence, says the Chapman, I will willingly give you Two Shillings for every Yard I buy of you, provided that every Angel of my Money may go for Twenty Shillings, for which 'tis said they agreed.

Then the Chapman bids the Draper cut him off 5 Yards, which at 2s. the Yard, comes to 10s. The Chapman throws him down an Angel, which was to go for 20s. and demands 10s. so that by this reaching Trick, he had the 5 Yards for nothing.

IX. Suppose the Father and the Son Travell'd together. each of them carrying Faggots. The Son complains to the Father that he was overladen, the Father reply'd, if I should take one of your Faggots, then I should have as many more as you have, and if I should

should give you one of my mine, yet I should have as many Faggots as you have in all still; How many had each of them?

The Father had 7 } Faggots Answer.
The Son had 5 }

Suppose 50 Apples laid in a right Line, the one from the other one Yard, and one is to fetch all the other Apples, one by one. and lay them to the one Apple, I demand how many Yards he shall go and come to bring the Apples all to one Parcel?

Then divide the Yards by 220
The Yards in a Furlong) and the
Quotient gives 11 Furlongs, and
30 Yards.

Thus 220) 2450 (11 Furl. 30 Yards.

22

25

22

30

Mile Fur. Yards,

That's 1 — 3 — 30

from 50

take 1

rests 49

differ. 2

product 98

first 2

last 100

half 50

term 49

450

200

Yards 2450

XI. A Church built in the Year of our Lord 942, and now we reckon 1727. How many Years ago was the Church built?

Answer. Subtract 942 out of 1727, rests 785 Years ago since the Church was founded, and ought to be set *East and West*.

*XII. If a Lady was ask'd how old she was, and made this Answer, I have 9 Children, and there was 19
3 Years between the Birth of every one of them, 24
and my eldest was born when I was 19 Years 19
old, which is now exactly the Age of my Young-
est: How old now is this Lady? 62*

Answer. 'Tis to be resolved by Addition, thus, First set down her Age when her first Child was born, then the Difference between that and the Birth of her Youngest, and then the Age of the Youngest, which added together, shews the Mother to be 62 Years old, as in the Margin.

*The Use of the Table for Weighing of Bread,
by Averdupois-Weight, according to the
Act of the Eighth of Queen ANNE, with
the Price of a Peck-Loaf. By Mr. Parker.*

THE Price of Wheat by the Bushel being known, look for the same under the Title of the Price of Wheat by the Bushel, being the outermost Column on the left Hand, and even with it towards the right, under its proper Title, is the Weight of the Penny-Loaf; White, Wheaten or Household, and by going on further in the same Line towards the right Hand, you will find the Weight of the Twelve Penny Loaf, both Wheaten and Household; as also how much Money in either sort must be paid for a Peck-Loaf that contains 18 Pound Weight.

Example.

Suppose the Price of Wheat be 5s. 9d. the Bushel, what shall be the Weight of Penny-Bread; White, Wheaten, or Household.

Look for 5s. 9d. in the first Column; and even with it you will find 6 Ounces, 6 Drams for the White, 9 Ounces 9 Drams under Wheaten, and 12 Ounces 13 Drams for the Household Bread, for so much every one ought to weigh.

And the Twelve-penny Loaf Wheaten, at that Price must be 7 Pound, 3 Ounces, 1 Dram: The Household.

A Table for the Weight of Bread, by *Averdupois Weight*

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A Table for the Weight of Bread, by *Averdupois Weight*

Price of Wheat By the Bushel.	Penny White.		Penny Wheat.		Penny Household.		1 Shilling Wheaten.			1 Shilling Household.			Peck Wheaten.			Peck Household.		
	O.	D.	O.	D.	O.	D.	D.	O.	P.	O.	D.	s.	d.	q.	s.	d.	q.	
2 0	3	4	19	14	26	8	4	14	5	19	13	13	1	2	2	0	11	0
2 3	12	6	18	9	24	11	3	14	7	18	8	10	1	3	2	0	11	3
2 6	11	9	17	6	23	3	13	0	9	17	6	11	1	4	2	1	0	2
2 9	10	15	16	6	21	13	12	4	4	16	5	11	1	5	2	1	1	1
2 9	10	4	15	7	20	10	11	9	6	15	7	3	1	6	3	1	2	0
3 0	9	12	14	10	19	8	10	15	10	14	10	3	1	7	3	1	2	3
3 3	9	12	14	10	19	8	10	15	10	14	10	3	1	7	3	1	2	3
3 6	9	4	13	14	18	9	10	6	13	13	14	7	1	8	3	1	3	2
3 9	8	13	13	4	17	10	9	14	14	13	3	14	1	9	3	1	4	1
4 0	8	7	12	10	16	14	9	7	11	12	10	4	1	10	3	1	5	0
4 3	8	1	12	1	16	2	9	1	1	12	1	7	2	0	0	1	5	3
4 6	7	12	11	9	15	7	8	11	1	11	9	6	2	1	0	1	6	2
4 9	7	7	11	2	14	15	8	5	8	11	1	10	2	2	0	1	7	1
5 0	7	2	10	11	14	4	8	0	5	10	11	2	2	3	0	1	8	1
5 3	6	6	9	9	13	4	7	7	3	9	11	14	2	5	0	1	9	0
5 6	6	3	9	4	12	6	7	3	1	9	9	7	2	6	0	1	10	2
5 9	6	0	9	0	11	15	6	15	4	9	4	5	2	7	0	1	11	1
6 0	6	3	9	0	11	15	6	11	10	8	15	8	2	8	1	2	0	0
6 3	5	13	8	11	11	9	6	8	4	8	11	1	2	9	1	2	0	3
6 6	5	10	8	7	11	4	6	5	2	8	6	13	2	10	1	2	1	2
6 9	5	7	8	3	10	14	6	2	2	8	2	14	2	11	1	2	2	2
7 0	5	5	7	15	10	9	5	15	5	7	15	2	3	0	0	2	3	1
7 3	5	2	7	12	10	5	5	12	11	7	11	9	3	1	1	2	4	0
7 6	5	0	7	8	10	0	5	10	3	7	8	4	3	2	1	2	4	3
7 9	5	0	7	8	10	0	5	10	3	7	8	4	3	2	1	2	4	3
8 0	4	14	7	5	9	12	5	7	13	7	5	1	3	3	1	2	5	2
8 3	4	12	7	2	9	8	5	5	9	7	2	1	3	4	2	2	6	1
8 6	4	1	6	15	9	4	5	3	7	6	15	4	3	5	2	2	7	0
8 9	4	8	6	13	9	1	5	1	6	6	12	8	3	6	2	2	7	3
9 0	4	7	6	10	8	13	4	15	7	6	9	15	3	7	2	2	8	3
9 3	4	5	6	7	8	10	4	13	10	6	7	7	3	8	2	2	9	2
9 6	4	3	6	5	8	7	4	11	13	6	5	2	3	9	3	2	10	1
9 9	4	2	6	3	8	4	4	10	2	6	2	14	3	10	3	2	11	0
10 0	4	0	6	1	8	1	4	8	9	6	0	11	3	11	3	2	11	3
10 3	3	15	5	15	7	15	4	7	0	5	14	11	4	0	3	3	0	2
10 6	3	14	5	3	7	12	4	5	8	5	12	7	4	1	3	3	1	1

Houſhold 9 Pounds, 9 Ounces, 7 Drams: And the Peck Loaf Wheaten is 2s. 6d. The Houſhold is 10d. half-penny. The ſame is to be obſerved if Wheat bear any other Price.

Note, That the P. D. O. ſtands for Pounds, Drams, and Ounces; and that 16 Drams makes an Ounce, and 16 Ounces a Pound.

A Miller if he carry and re-carry his Griſt, is allowed 4 Pound, or Pints in the Buſhel, both for Toil and Waſte, but if it be brought to him, and carried back by the Owners he ought to take but 2 Pound out of every Buſhel, therefore the Owner had need to weigh his Griſt before it goes to the Mill, and when comes back again.

A Table directing how to Buy and Sell by the 100.

d. q.	l. s. d.	d. q.	l. s. d.	d. q.	l. s. d.	d. q.	l. s. d.
0 1	0 2 4	8 1	3 17 0	16 1	7 11 8		
0 2	0 4 8	8 2	3 19 4	16 2	7 14 0		
0 3	0 7 0	8 3	4 1 8	16 3	7 16 4		
1 0	0 9 4	9 0	4 4 0	17 0	7 18 8		
1 1	0 11 8	9 1	4 6 4	17 1	8 1 0		
1 2	0 14 0	9 2	4 8 8	17 2	8 3 4		
1 3	0 16 3	9 3	4 11 0	17 3	8 5 8		
2 0	0 18 8	10 0	4 13 4	18 0	8 8 0		
2 1	1 1 0	10 1	4 15 8	18 1	8 10 4		
2 2	1 3 4	10 2	4 18 0	18 2	8 12 8		
2 3	1 5 8	10 3	5 0 4	18 3	8 15 0		
3 0	1 8 4	11 0	5 2 8	19 0	8 17 4		
3 1	1 10 4	11 1	5 5 0	19 1	8 19 8		
3 2	1 12 8	11 2	5 7 4	19 2	9 2 0		
3 3	1 15 0	11 3	5 9 8	19 3	9 4 4		
4 0	1 17 4	12 0	5 12 0	20 0	9 6 8		
4 1	1 19 8	12 1	5 14 4	20 1	9 9 0		
4 2	2 2 0	12 2	5 16 8	20 2	9 11 4		
4 3	2 4 4	12 3	5 19 0	20 3	9 13 8		
5 0	2 6 8	13 0	6 1 4	21 0	9 16 4		
5 1	2 9 0	13 1	6 3 8	21 1	9 18 4		
5 2	2 11 4	13 2	6 6 0	21 2	10 0 8		
5 3	2 13 8	13 3	6 8 4	21 3	10 3 0		
6 0	2 16 0	14 0	6 10 8	22 0	10 5 4		
6 1	2 18 4	14 1	6 13 0	22 1	10 7 8		
6 2	3 0 8	14 2	6 15 4	22 2	10 10 0		
6 3	3 3 0	14 3	6 17 8	22 3	10 12 4		
7 0	3 5 4	15 0	7 0 0	23 0	10 14 8		
7 1	3 7 8	15 1	7 2 4	23 1	10 17 6		
7 2	3 10 0	15 2	7 4 8	23 2	10 9 4		
7 3	3 12 4	15 3	7 7 0	23 3	11 1 8		
8 0	3 14 8	16 0	7 0 4	24 0	11 0 1		

The use of this Table.

If you buy any thing by the Hundred, accounting 112 Pound to the Hundred, and would know by the Pound, what the Hundred is valued at.

Example I.

If you buy Goods at 4 Pence 3 Farthings the Pound, look in the Tables for 4*d.* 3*q.* in the first Column, and against it in the second Column you find 2*l.* 4*s.* 4*d.* and so much at that rate 112 Pound comes to.

Example II.

If one Hundred weight, that is 112 Pound cost 4 Pound 1 Shilling and 8 Pence, to know how much it is by the Pound, look 4*l.* 1*s.* 8*d.* in the fourth Column in the Table, and right against it, the Column next the left Hand, you may find 8*d.* 3*q.* and so much at that rate it comes to by the Pound.

Again, If you Buy one Hundred weight of Goods for 4 Pound, 1 Shilling 8 Pence, and retail it at 10 Pence the Pound, it comes to at that rate 4*l.* 13*s.* 4*d.* take 4*l.* 2*s.* 8*d.* from it, and you will find your self, by the Remainder, 11*s.* 8*d.* gainer, &c. [See the V. Example in *Addition*, and the V. Example in the *Golden Rule*.]

Several Foreign Gold and Silver Coins reduced to our Standard.

GOLD COINS.	Weight			Value.		
	o.	dw.	gr.	l.	s.	d.
French Pistole	0	4	08	0	17	04
French Lewis	0	3	14	0	14	04
Holland Rider	0	6	10	1	05	09
Hungary Duck	0	2	06	0	09	08
Spanish Pistole	0	4	08	0	17	04
Flanders Albertus	0	3	08	0	13	00
Double Sovereign of Flander	0	7	3½	1	08	06
Italian Pistole	0	4	00	0	16	07
Gilder of Porthono	0	2	03	0	06	00
Gilder of Matthias Emperor	0	2	03	0	07	02
Gilder of Noremburgh	0	2	03	0	07	01
Half Cardinal Angel	0	1	20	0	06	04
Calkeen of Venice	0	2	05	0	09	07
A Danish Coin with a Crown	0	3	20	0	35	04

SILVER.	Weight.			Value.		
	o.	dw.	gr.	l.	s.	d.
Holland Dollar	0	18	5	4	04	00
Lyon Dollar	0	17	18	3	04	02
Duckaton of Flanders	1	00	22	5	04	00
Rixdollar of the Empire	0	18	15	4	05	03
Mexico Royal	0	17	12	4	04	02
Sevil Royal	0	17	12	4	04	03
Old Cardecus	0	06	3½	1	06	01

SILVER.

S I L V E R.

	Weight.			Value.		
	o.	dw.	gr.	s.	d.	f.
French Lewis	0	17	11	4	04	01
Double Milrez of Portug.	0	14	04	3	06	01
Single Milrez of Portugal	0	07	02	1	09	00
S. Mark of Venice	0	10	04	2	06	00
Double Dutch Stiver	0	01	00	0	01	03
Cross Dollar	0	18	00	4	02	01
Zeland Dollar	0	13	00	2	07	00
Old Philip Dollar	0	02	00	5	00	00
Ferdinando Dollar 1623	0	18	06	4	03	00
Prince of Orange Dollar } 1628	6	14	06	4	03	03
Leopoldus Dollar, 1624.	0	18	02	4	03	01
Rodolphus Dollar, 1607.	0	18	07	4	04	00
Maximilian Dollar, 1616.	0	18	02	4	05	00
Portugal Testoon	0	05	00	1	02	03
New Quarter of French } Lewis	0	04	09	1	01	00
Spanish Dollar, 1620.	0	13	00	2	11	01

English G O L D.

	l.	s.	d.
A Five Guinea Piece, is	5	05	00
Jacobus, is	1	05	00
Carolus, is	1	03	00
A Guinea, is	1	01	00

Note, That if I pay a Merchant 897 Pound, to receive the Value in Guineas at 21 s. 6d. the Piece First, I reduce the 897 Pound into Pence, makes
215280d

215280d. to be divided by 252 (the Pence in one Guinea) the Quotient, gives 854 Guineas, the Remainder being 72, and the Divisor 252, then if a Guinea was divided into 252 it is 72 Parts of it, which 72 is something more than half a Guinea.

Or, in the said 215280d. How many French Pistoles at 17s. 10c Piece? Divide by 204, (the Pence in one Pistole) the Quotient gives 1055 Pistoles, and a little more than half a Pistole.

Or, In the said 215280d. How many Dollars at 4s. 8d. the piece? Divide by 56 (the Pence in a Dollar,) the Quotient gives $\text{£}44\frac{1}{2}$ Dollars. *The Answer.*

Or, in the said 215280 pence, How many Thirteen pence Half-pennies? Reduce the pence into Farthings, and it makes 861120, the which divide by 54, the Farthings in Thirteen-pence Half-penny, gives in the Quotient 15946 $\frac{2}{3}$ Thirteen-pence Half-pennies.

By this Rule you may reduce one sort of Coin into another of other Nations, when you know the just Value of each Piece, which is of great Use for Merchants, and Travellers, &c.

			l.	s.	d.
1 Pound Troy of Gold	} is worth	}	40	18	$4\frac{3}{4}$
1 Pound Awer of Gold			46	13	$8\frac{1}{2}$
1 Pound Troy of Silver	} is worth	}	03	03	00
1 Pound Awer of Silver			03	15	$3\frac{1}{2}$

A Hundred Pound in Gold, weighs 1 Pound 11 Ounces and 3 Quarters.

A Hundred Pound of Silver, weighs 26 Pound 4 Ounces *Averdupois.* 

More of Foreign Coins reduced to English Money.
Spanish Money,

6 Carnados	}	makes 1	}	Mervid
54 Mervids				Ryal, at 6. <i>English</i> ,
11 Ryals				Ducat
8 Ryals				Piece of 8, or 4s. <i>Engl.</i>
4 Quartiliards				Ryal, or 6d. <i>English</i>

Portugal Money.

40 Res	}	makes 1	}	Ryal 6d. <i>En.</i>
2½ Ryals				Testoon,
4 Testoons, or 10 Ryals				Ducat,
2½ Ducats				Milt of Gold.

French Money.

12 Deniers	}	make 1	}	Soulx, Sous, or Sol 1q. <i>English</i>
20 Soulx				Frank or Liver,
16 Soulx				Carducus.
4 Carducas				Crown.

Scotch Money.

1 Small piece	}	make	}	2 d. 1 q. <i>English</i> ,
2 Small pieces				1 Noble Scotch, or 6d. 3q. <i>Eng</i>
2 Nobles Scotch				1 Mark, or 13d. 2q. <i>English</i>
3 Nobles Scotch				1l. Scotch, or 20d. <i>English</i> ,

Irish Money.

2 Ob, or 4d. 2 <i>Eng.</i>	}	is	}	1 Harper, or 9d. <i>English</i>
20 Harpers				1l. Irish, or 15s. <i>English</i>

Flemish Money.

8 Pence	}	make	}	1 Groat,
2 Groats				1 single Stiver,
2 single Stivers				1 double Stiv. or 3d. 1q. <i>Eng</i>
20 single Stivers				1 Guilder 3s. 4d. <i>English</i> .
or 10 double				
10 Guilders				2 Pound.

Holland Money.

A Doit	} make	8	
8 Doits		1 Stiv. 3q. $\frac{2}{3}$ and 25 Dole	
2 Stivers		1 Dopplegen.	
6 Stivers		1 Shilling Holl.	6 $\frac{1}{2}$ English
1 Rix-Dollar		50 Stivers,	4s. 6d. English

Persian Coin.

2 Beestees	} is	1 Shawhee	
2 $\frac{1}{2}$ Shawhes		1 Lauree	
2 Shawhees		1 Mamnoodee	

In the *East-Indies*, among the Blacks, about *Cor-mandel*, they have a Coin call'd *Fano*, of 4 $\frac{4}{5}$ d. *English*, 20 makes 8s. *English*.

Note, That 22d. in our *English* Copper Half-pence, and Farthings, weighs 1 $\frac{1}{16}$ *Averdupois* and 112 $\frac{1}{2}$ Weight of them, almost 10l. in Silver Coin.

Of Scripture-Weights, &c. which follow.

Note, That all Measures, Weights, and Coins, were kept in the Sanctuary, 1 *Chron.* 23. 29. *Exodus* 30. 21. *Leviticus* 27. 25. according to the Shekel of the Sanctuary.

All thy Estimations shall be according to the Shekel of the Sanctuary, to oblige Men in their Dealing and Traffick, to make use of such just Measures as agreeable unto the publick Standards that were kept in the Sanctuary.

To discover a deceitful Ballance, or Scales, is by changing the Weight into each other Scale, and then the Iniquity will be manifest.

Weights

Weights and Measures mention'd in Holy Scriptures.

Measures of Application.

A *Hair's-breadth*, the Forty-eight part of an Inch.

A *Finger*, somewhat less than an Inch.

A *Hands-Breadth*, three Inches.

A *Span*, nine Inches.

A *Foot*, twelve Inches.

A *Cubit*, a Foot and an half.

An *Holy-Cubit*, a Yard.

The *King's-Cubit*, a Foot and nine Inches.

A *Reed*, Six Cubits, and an Hand's-Breath.

A *Pace*, five Feet.

A *Furlong*, a Hundred and Twenty five Paces.

A *Mile*, a Thousand Paces.

A *Sabbath Days Journey*, Six Hundred Paces.

Measures of Capacity of Things that are Dry.

A *Kab*, a Quart; an *Omer*, 3 Pints and half.

A *Measure*, or *Seah*, a Gallon and an half.

An *Epha*, half a Bushel and a Pottle.

Half *Homer*, or *Cor*, Fourteen Bushel and a Pottle.

Measures of Liquors.

A *Log*, half a Pint. A *Hin*, three Quarts.

A *Bath*, nine Gallons, and three Quarts.

A *Por*, or *Se'ary*, a Pint and an half.

A *Measure*, or *Chenix*, a Quart.

A *Fi-kin*, Four Gallons and an half.

Weights

Weights of Appension, or Counterpoise.

A *Shekel* in *Weight*, a quarter of an Ounce.

A *Shekel* of the *Sanctuary*, half an Ounce.

A *Pound*, 12 Ounces.

A *Mule's Burthen*, Two Hundred Weight.

A Table of Money,

A *Mite*, one third of a Farthing.

A *Quadrans*, or *Farthing*, 2 Mites:

An *Assary*, or *Farthing*, Half-penny Farthing.

A *Gerah*, or *Piece of Money*, a Penny-half Penny.

A *Dram*, or *Penny*, Seven Pence Half-penny.

A *Didrachm*, or *Shekel*, one Shilling and three Pence.

A *Stater*, or *Shekel of the Sanctuary*, 2s. 6d.

'Tis said that for thirty of these *Staters*, *Judas* sold our Blessed Saviour Christ.

A *Mina*, or *Pound*, Three Pounds, 2 Shillings, Six Pence.

A *Talent Silver*, an Hundred Eighty Seven Pounds, Ten Shillings.

"Gold Coins,

A *Shekel of Gold*, Piece, a *Darcon*, *Dains*, or *Dram of Gold*, Fifteen Shillings.

A *Pound of Gold*, Seventy five pounds.

A *Talent of Gold*, Two Thousand Two Hundred and Fifty Pounds.

The Form of a Rental, (so call'd.

First, Draw four Columns (as follows) in your Account Book, 1. The Tenants Names. 2. What each

each hold. 3. The Yearly Rent. And the last Column for the Rent Days As,

A Rental for the Year 1727.

		<i>l.</i>	<i>s.</i>	<i>d.</i>	<i>L. Day,</i>
<i>h. Mays.</i>	A Farm	48	10	10	<i>Michaelmas</i>
<i>A. Day.</i>	Arrable	15	10	00	<i>L. Day S. 7. E.</i>
<i>B. Carr.</i>	Meadow	24	06	00	<i>Mich. St. Thomas.</i>

Note, That the first Tenant paying *Lady-Day's* Rent, which is 48*l.* 10*s.* 10*d.* set a Cross over *Lady-Day.*

And the last Tenant paying quarterly, cross that also, as he pays.

And *Lastly,* It's convenient to write a new Rental every Year.

Tables of Use upon Use after 6 in the Hundred.

The Increase of 1 L. Stock by Interest upon Interest at 6 in the Hundred.					What a Rent is worth in ready Money at 6l. per Cent.		
Years.					Year.	Year	Quarters
	l.	s.	d.	q.			
1	1	1	2	1	1	0	3
2	1	2	5	2	2	1	3
3	1	3	9	3	3	2	2
4	1	5	3	0	4	3	2
5	1	6	9	0	5	4	1
6	1	8	4	1	6	4	3
7	1	10	0	3	7	5	2
8	1	11	10	2	8	6	0
9	1	13	9	1	9	6	3
10	1	15	9	3	10	7	1
11	1	17	11	2	11	7	3
12	2	0	2	3	12	8	1
13	2	2	7	3	13	8	3
14	2	5	2	2	14	9	1
15	2	7	11	0	15	9	3
16	2	10	9	2	16	10	0
17	2	13	10	0	17	10	2
18	2	17	0	3	18	10	3
19	3	0	5	3	19	11	0
20	3	4	1	2	20	11	1
21	3	7	11	2	21	11	3
22	3	12	0	2	22	12	0
23	3	16	4	2	23	12	1
24	4	0	11	2	24	12	2
25	4	5	9	3	25	12	3
26	4	10	11	2	26	12	0
27	4	16	5	0	27	13	0
28	5	2	2	2	28	13	1
29	5	8	4	0	29	13	2
30	5	4	10	0	30	13	3
31	6	1	8	2	31	13	3
					41	15	0
					51	15	3
					61	16	1
					71	16	3
					81	16	1
					91	16	1

The Number of Years to be purchased.

The Use of the Table of Interest upon Interest.

What will 346l. amount unto in 13 Years, Interest upon Interest, at 6 per Cent?

Look against 13 in the first Column, and against it is 2l. 2s. 7d. 3q. then say.

If 1l. gain 2l. 2s. 7d. 3q. what will 346l. gain?

20

42

12

91

42

Pence

511

4

Farth.

2047

346

12282

8188

6141

708262

Reduce the 708262 Farthings into Pounds, and the Answer to the Question will be 737l. 5s. 5d. 2q.

As to the second Table of the Worth of Annuities, or Yearly Rent, to purchase in ready Money, look for the Number of Years in the first Column, and against it is the Number of the Yearly Rent to be presently paid in ready Money: As, suppose you are to buy a Lease of 3l. a Year, and 28 Years to come; find 28, and against it is 13 Years and 2 Months Rent, which comes to near 40l. in ready Money. This in short for want of Room.

Then if the Diameter be 7 Inches in length then the Circumference is twenty two Inches.

I. If the Circumference of a Circle is 44 Inches, how many Inches is the Diameter.

Multiply the 44 by 7, and the Product divide by 22, the Quotient is 14, the Diameter.

II. If the Diameter of a Circle be 14, what is the Circumference.

Multiply the Diameter 14 by 22, and the Product divide by 7, the Quotient gives 44 to 14, the Circumference.

By Gunter's Line.

Extend from 22 to 7 downwards, that Extent will reach the same way from 44 to 14, the Diameter.
Or,

Extend from 7 to 14, that Extent from 22 the same way will reach to 44 Circumference.

III. A Globe, or Circle of $31\frac{3}{4}$ Inches the Circumference, what is the Diameter?

Multiply the 7 (of the Fraction) thus, saying 7 times 1 is 7, and the 3 above makes 10, set down a Cypher, and carry 1. Lastly, 7 times 3 is 21, and that I carry'd is 22, which makes the Product 220.

$$\begin{array}{r} 32\frac{1}{8} \\ \hline \text{Product } 220 \\ \hline \end{array}$$

Example.

$$\begin{array}{r} 22) 220 \text{ (10 Inches Diameter)} \\ \underline{22} \\ 00 \end{array}$$

M 2

17

IV. A Circle 10 Inches Diameter, what is the Circumference?

$$\begin{array}{r} 22 \\ 10 \\ \hline 220 \end{array} \quad \begin{array}{r} 7) 220 \\ 21 \\ \hline 10 \\ 7 \\ \hline 3 \end{array} \quad (31\frac{3}{7} \text{ Inches Circumference.})$$

V. How many Superficial, or Square Inches are in a round Table?

Multiply half the Circumference by half the Diameter, the Product is the Content.

Or, Multiply the Diameter in it self, and that product by 11, and the last product divide by 14, the Quotient gives the Content.

Thus 7 } Diameter
17.5

$$\begin{array}{r} 49 \\ 11 \\ \hline 49 \\ 49 \\ \hline 539 \end{array} \quad \begin{array}{r} 14) 539 \\ 42 \\ \hline 119 \\ 112 \\ \hline 7 \end{array} \quad (38\frac{1}{2} \text{ Inches.})$$

Or, Multiply the Sum of the Inches of the Circumference A. G. B. C. K. in it self, and that product by 7, and the last product divide by 88 the Quotient gives the Content.

N. B. The Sum is thus,

$$\begin{array}{r} 14) 539 \\ 42 \\ \hline 119 \end{array} \quad (38\frac{1}{2} \text{ Inches.})$$

VI. Let half the Circle above, as A. G. B. H. C. represent half a round Table or the like; how many flat Inches are thereon?

Multiply the Diameter E. C. in itself, and that product Multiply by 22, this last product divide by 14, the Quotient is the Answer.

VII. To Measure a Quadrant, or quarter of a round Table, or the quarter of the Circle above; as B. H. C. E.

Multiply the Line B. E. in its self, and that product by 11, and divide the last product by 14, the Quotient gives the Content.

Note, That if a piece of Timber be half round or quarter round at the end, measure it this way, by Multiplying the Inches at the end thereof by the Inches of the length.

Note, also, That in what kind of Measure your Measure with, the same kind will the Contents be, as if the Dimensions be taken in Inches and parts, the Contents or Area will be in Feet, if in Perch, Yard, &c.

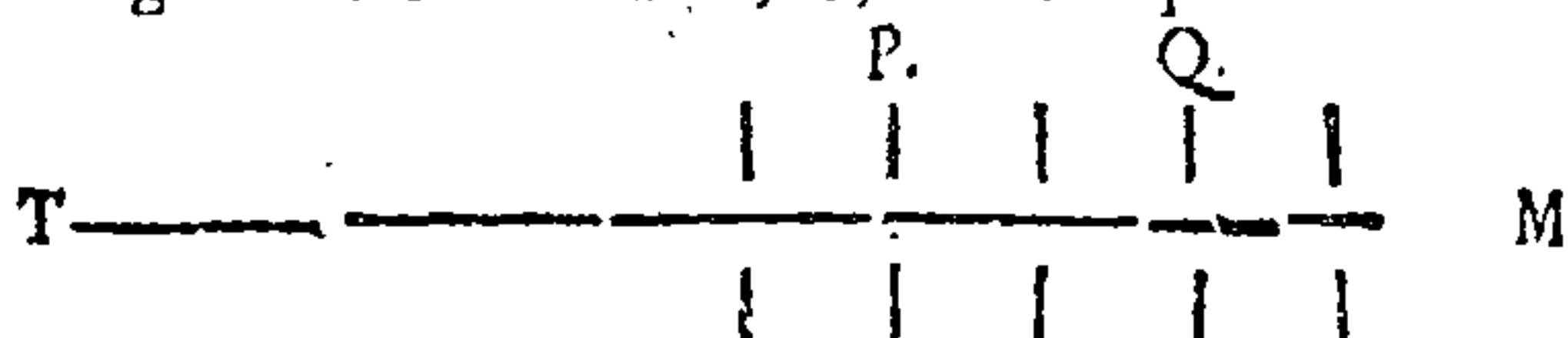
VIII. How to Measure any part or portion of a Circle, being bigger or lesser than half a Circle.

Multiply half the Arch-Line thereof by the half Diameter, the product gives the Area.

IX. How to find the Length of the Arch-Line G. B. H. and to lay it upon a straight Line.

First, Draw a right Line upon Paper, as the Line T. M. below, then with the Compasses set off the Chord Line therein, which will reach from T. to P. then take the distance between G. B. or H. B.

and set it twice from *T*. in the same Line, and it will reach to *Q*. *Lastly*, Take one third of the distance between *P*. *Q*. and set it off from *Q*. to *M*. then the distance between the *T*. to *M*. shall be the Length of the Arch-Line, *G*. *B*. *H*. required.



X. How to Measure the part of a Circle, or Sector, E. K. S. C. in the Circle above.

First, Draw the right Line *K. C.* which divide into 4 equal Parts, then set one of the Parts from *K.* to *S.* in the Arch Line, and draw the Line *S. O.* which Line *S. O.* shall be equal to half the Arch Line *K. S. C.* *Lastly*, Multiply the Line *S. O.* by the Line *E. K.* the Product gives the Content of the Sector *E. K. S. C.*

XI. How to Measure the Segment C. O. K. S.

By the last Example is found the whole Content of the Sector *E. K. S. C.* therefore Subtract the Triangle *E. C. K.* there from, and you will have your desire, in order to which I shall shew you how to Measure a Triangle.

XII. How to Measure the Triangle E. C. K.

First, The Line *E. K.* call the *Base*, and the dotted Line *C. V.* call the *Perpendicular*.

Or in the Triangle *G. E. H. R.* (in the Circle above) call the Line *G. R. H.* the *Base*, and *R. E.* the *Perpendicular*,) because the *Perpendicular* should fall from

from an *Angle* square wise upon the *Base* or longest side) if one side be longer than another. Therefore,

The whole *Perpendicular*, multiply'd by the whole *Base*, giveth the double Content of the *Triangle*.

Or, half the *Base* multiplied into the whole *Perpendicular*, gives the Content.

Or, the whole *Base* multiplied into half the *Perpendicular* gives the Content.

Note, That if the *Triangle* was Land. Multiply both ways for the Proof of your Work.

Let G. B. H. E. be the *Triangle* given in the Circle above.

XIII. How to Measure a Triangle by Gunter's Chain and Line.

Suppose the *Perpendicular* E. R. be 7 Chains 50 Links, and the *Base* or longest side G. R. H. be 45 Chains, 75 Links to find the Content in Acres.

Extend from 20 to 7, 50 upwards, that Extent the same way will reach from 45, 75, to 17, 15, Acres.

XIV. To Measure a Trapezia, being two Triangles joyned.

Let G. R. E. Z. (in the Figure above) represent a Close of Ground, of four unequal Corners.

First, Measure with your Chain the dotted Line G 17 E. called the *Base*, next measure the two *Perpendiculars*, as R. 17, and Z. 17, and add them together, and the Sum multiply by the whole *Base*, the Product gives the double Content.

And for proof, multiply the whole *Base* by the two *Perpendiculars* added, gives the just Content. See Gunter's Chain,

XV. *How to Measure the Segment, G. B. H. R. (in the Circle above.)*

By the IXth. Example above, you were taught how to find the length of the Arch-Line thereof, as G. B. H. therefore multiply the half-Arch-Line by the Semi-diameter B. E. or G. E. the product gives the Content of the Sector G. B. H. E. then to find the Content of the Segment G. B. H. R. Subtract the Content of the Triangle G. K. H. E. and the remainder is the true Content of the Segment G. B. H. R.

By the same Rule you may measure any bigger or lesser part of a Circle, which is also of great use to find the Content of a Cask, part empty, &c.

XVI. *The Figures of six sides marked X (in the Circle above) called a Polygon.*

Multiply the Circumference by half the Diameter, the same of Figures 7, 8, or other Numbers of equal sides, but if the sides are unequal, they must be measured as Triangles.

XVII. *And the Figure marked W. called a Rhombus.*
Multiply the dotted Line by one side gives the Content, if it was a Quarry of Glass, or end of a Timber-stick, &c.

An exact Way to Measure round Timber by one that can Multiply.

Co.	F.	Parts.	Co.	F.	Parts.
10	0	055	41	0	929
11	0	062	42	0	974
12	0	077	43	1	022
13	0	093	44	1	070
14	0	108	45	1	119
15	0	124	46	1	169
16	0	141	47	1	220
17	0	159	48	1	272
18	0	179	49	1	327
19	0	200	50	1	381
20	0	221	51	1	437
21	0	243	52	1	496
22	0	267	53	1	552
23	0	292	54	1	612
24	0	318	55	1	671
25	0	343	56	1	732
26	0	374	57	1	795
27	0	403	58	1	860
28	0	433	59	1	923
29	0	465	60	1	988
30	0	497	61	2	056
31	0	531	62	2	124
32	0	566	63	2	193
33	0	602	64	2	264
34	0	639	65	2	335
35	0	677	66	2	406
36	0	716	67	2	480
37	0	756	68	2	555
38	0	798	69	2	631
39	0	840	70	2	707
40	0	884	71	2	785

Co.	F.	Parts.	Co.	F.	Parts.
72	2	864	87	4	183
73	2	945	88	4	279
74	3	026	89	4	377
75	3	101	90	4	475
76	3	191	91	4	576
77	3	276	92	4	677
78	3	362	93	4	780
79	3	449	94	4	882
80	3	537	95	4	987
81	3	625	96	5	093
82	3	715	97	5	200
83	3	807	98	5	307
84	3	896	99	5	416
85	3	990	100	5	747
86	4	084			

This Table may be Figured upon a Rule.

Now, to measure a Tree that is standing take the Length of the Body in Feet by a Pole, and in the middle girt it with a String, and the Number of Inches in the Girt find in the first Column of Co. or Compass, and the Number against multiply by the Feet of the Length, and from the Product cut off three Figures to the Right Hand, and the other are Feet.

Example.

Compass 66 Inches ————— 2 406

Length in Feet ————— 12

4812

2406

Feet 28 ————— 25872

The

The Remainder is as near another Foot, as 872 is to 1000.

Now by this Rule, a Man, with a Pole and a String, and a short Ladder, may in a little Time, value a Wood, that he may not sell any one Tree too dear, and set it down in a Wood Book, as follows.

A Wood-Book, for the Sale of Timber.

First, Mark the Trees as you measure them with Stamps, as, 1, 2, 3, 4, 5, 6, 7, 8, 9, &c, (made of Iron for the Purpose) and enter them in a Book, with the Year and Day of the Month, the Owner's Name, and the Field or Wood wherein they grow, this done, make a Column, first for the Number of Trees, second for their Lengths, in the third their Squares, or Number of Feet, and the last how sold, if you will.

Having thus, by Assistance, got all the chief into your Books, you may sell them according to the Marks, if you do but send the Buyer to see them, which may prevent many Words, as is now too much used in Bargaining in these Days, tho' you go not with him to the Trees. [*Leviticus* 19. 35. *Deut.* 25. 14.]

Co.	Length.			Co.	Length		
	Inches.	F.	In. P.		Inches	F.	In. P.
10	18	11	2	33	1	6	9
11	14	11	5	34	1	7	8
12	12	6	8	35	1	5	7
13	10	8	5	36	1	4	7
14	9	2	7	37	1	3	8
15	7	10	3	38	1	3	0
16	7	0	8	39	1	2	3
17	6	3	0	40	1	1	6
18	5	7	2	41	1	0	9
19	5	0	2	42	1	0	3
20	4	6	3	43	9	11	7
21	4	1	2	44	0	11	1
22	3	8	9	45	0	10	7
23	3	4	9	46	0	10	2
24	3	1	7	47	0	9	9
25	2	10	7	48	0	9	4
26	2	8	1	49	0	9	0
27	2	5	8	50	0	8	7
28	2	3	7	51	0	8	3
29	2	1	8	52	0	8	0
30	2	0	1	53	0	7	8
31	1	10	6	54	0	7	4
32	1	0	2	55	0	7	2

The Use of this Table.

Suppose a round Timber-Stick, or Garden-stone Roll be 48 Inches about, (the Girt taken with a String) how much in length thereof will make a solid Foot, containing 1728 square Inches?

of

Of Measuring round Timber.

Co.	Length	Co.	Length.
Inches.	P. F. In. 10	Inches,	P. F. In. 10
56	0 6 9	79	0 3 5
57	0 6 7	80	0 3 4
58	0 6 4	81	0 3 3
59	0 6 2	82	0 3 2
60	0 6 0	83	0 3 2
61	0 5 8	84	0 3 1
62	0 5 6	85	0 3 0
63	0 5 6	86	0 2 9
64	0 5 2	87	0 2 5
65	0 5 1	88	0 2 8
66	0 4 9	89	0 2 7
67	0 4 8	90	0 2 7
68	0 4 7	91	0 2 6
69	0 4 6	92	0 2 6
70	0 4 4	93	0 2 5
71	0 4 3	94	0 2 5
72	0 4 2	95	0 2 4
73	0 4 1	96	0 2 4
74	0 3 9	97	0 2 3
75	0 3 8	98	0 2 2
76	0 3 7	99	0 2 2
77	0 3 7	100	0 2 2
78	0 3 6		

Look in the Column over which is set Co. (for Compass) for 48 Inches, against which stands, 0.9,4, that is, no Feet, 9 Inches, and 4 tenth Parts of an Inch, and so much in the length of the Stick, or Stone, makes a Foot solid

Of Measuring Board or Glass.

Breadth.		Length.			Breadth.		Length.		
Fe.	In.	F.	In.	Pts.	Fe.	In.	F.	In.	Pts.
0	1	12	0	0	1	7	0	7	6
0	2	6	0	0	1	8	0	7	2
0	3	4	0	0	1	9	0	6	8
0	4	3	0	0	1	10	0	6	5
0	5	2	4	8	1	11	0	6	2
0	6	2	0	0					
0	7	1	8	6	2	0	0	6	0
0	8	1	6	0	2	1	0	5	8
0	9	1	4	0	2	2	0	5	5
0	10	1	2	4	2	3	0	5	3
0	11	1	1	1	2	4	0	5	1
					2	5	0	5	0
1	0	1	0	0	2	6	0	4	0
1	1	0	11	8	2	7	0	8	7
1	2	0	10	3	2	8	0	4	5
1	3	0	9	6	2	9	0	4	4
1	4	0	9	0	2	10	0	4	2
1	5	0	8	5	2	11	0	4	1
1	6	0	8	0	2	0	0	4	0

The Use of this Table.

Suppose that a Board, or Pane of Glass, be seven Inches broad, look for 7 in the first Column, and right against it is 1 Foot, 8 Inches, and 6 Tenth of an Inch in Length, to make a Foot.

Of Measuring square Timber.

Fe. In.	F. • In. Pts.		Fe. In.	F. In. Pts.
0 6	4 0 0		2 9	0 3 9
0 7	2 11 2		1 10	0 3 5
0 8	2 3 0		1 11	0 3 3
0 9	1 2 3			
0 10	1 3 3		2 0	0 3 2
0 11	1 2 3		2 1	0 2 8
			2 2	0 2 6
1 0	1 0 0		2 3	0 2 3
1 1	0 0 2		2 4	0 2 2
1 2	0 8 8		2 5	0 2 1
1 3	0 7 6		2 6	0 1 9
1 4	0 5 7		2 7	0 1 8
1 5	0 5 9		2 8	0 1 7
1 6	0 5 3		2 9	0 1 6
1 7	0 4 8		2 10	0 1 5
1 8	0 4 3		2 11	0 1 4
			3 0	0 1 3

The Use of this Table.

If a Piece of Timber is two Foot two Inches square, look it in the first Column, and right against it, in the second Column, you may find two Inches, six tenth Parts of an Inch in Length make a Foot solid, of 1728 Inches.

Of Measuring Brick Walls.

Feet.	Fe.	In.	Feet.	Fe.	In.
1	272	3	16	17	0
2	136	1	17	16	0
3	68	9	18	15	2
4	54	0	19	14	4
5	45	5	20	13	8
6	34	4	21	13	0
7	34	1	22	12	4
8	34	0	23	11	10
9	30	3	24	11	5
10	27	2	25	10	11
11	22	4	26	10	6
12	22	8	27	10	1
13	20	11	28	9	9
14	19	5	29	9	5
15	18	2	30	9	1

The Use of this Table.

A Wall 9 Foot high, 30 Foot 3 Inches, makes a Rod in the length thereof, &c.

Again, if a Wall, or House Side be 22 Foot high, how much in the length thereof will make a square Rod? Find 22, the height, in the first Column, and against it, in the second Column, you may find that 12 Foot and 4 Inches in length thereof make a square Rod, or Perch, of 16 Foot and an half both ways.

To find 750 on the Line.

For the Figure 7, take the Figure 7 on the Line; for 50 take 5 of the great Divisions, and that's the Point.

To find 12 on the same Line.

Take the Figure 1, and for the 2 take of the large Divisions; and that's the Point, (or Center so called) To set one Point of the Compass in measuring Board or Timber, a Line of two Foot long, and Compasses a Foot long is best.

Note, Let the Measure, whether it be Inch, Foot, Yard, Pole, or the like, that you measure with, be divided into 10 equal Parts, and each 10 divided (or supposed to be divided) into 10 Parts, as Occasion shall require, on the Carpenter's Rule the Foot is so divided.

Observe likewise, that if the point of your Compasses fall off the Line in your Work, remove it to the same Figure or Place, on the other Line; and the least Extent of the Compasses is commonly the best.

Multiplication by the Line.

1. Multiply 5 by 7. Set one foot of the Compasses in 1, and extend the other to 5 upwards with that Extent, place one Foot in 7, and the other foot will fall upon 35, the product or Answer.

2. Divide 63 by 3. Extend from 3 to 1 downwards, that Extent will reach the same way from 63 to 21, the Quotient, or Answer.

Note, In Multiplying always extend upwards, that is, as. 1, 2, 3, &c. But in Dividing, extend downwards.

3. Divide

3. Divide 288l. amongst 16 Men.

Extend from 16 to 1 downwards, that Extent will reach the same way from 288l. to 18 Pounds for each Man.

4. Divide 750l. amongst 25 Men.

Extend from 25 to 1 downwards, that Extent will reach the same way from 750 to 30l. for each Man, the Answer.

5. When a Bushel of Wheat is worth 3s. 4d. or 40d. the Penny Wheaten Loaf weighing 20 Ounces, what shall a Penny Wheat Loaf weigh when Wheat is 5s. or 60d. the Bushel?

Extend from 60 (the Pence for one Bushel) to 20 downwards, that Extent the same way may reach from 40 to 13 Ounces and one third of an Ounce, the Answer.

6. If a Bushel of Rye cost 3s. what will 40 Bushels cost?

Extend from 1 to 3 upwards, that Extent will reach the same way from 40 to 120 Shillings.

7. If 1 Bushel of Malt cost 3s. 6d. what will 40 Bushels cost?

Extend from 1 to 3 and a half upwards, that Extent will reach the same way from 40 to 140 Shillings.

8. If 136 Masons in a Month be able to build a Fort, and such Expedition required that I would have it finished in 8 Days, how many Men must be employed upon that Work?

Extend from 8 downwards to 136, that Extent will reach the same way from 28 to 476 Masons.

Note, That my Room in this Book will not admit me to write more largely of this excellent Rule, or Gunter's Line, which is of great Use upon many Accounts; yea, to resolve many Questions in Arithmetick.

I have made some Use of it, as you may see in divers Places in this Book.

See the Explanation of a Circle, or the Measuring a Board, like a round Table, which if it was cut into divers Parts to measure each Part by its self.

See also of what I have written that follows in the Measuring of plain Triangles, in which is shewn; by the said *Gunter's* Line, how to find the Square and Cube Number, very useful for Travellers and Soldiers, &c.

Mr. *Leybourn* has wrote a little Book of the Use of this Line, to which I refer you that have a Desire to make use of the Line more than I have set in this Book: As saith the Poet,

*From Numbers, Aid, and Art,
Never will Fame depart.*

Now to give the honest Countryman some Rules, to compute the Charges of building a House, &c. that his Enemies with (call'd the *Spanish* Curse) fall not upon him, viz. Ruin himself by undertaking to build that which he is not able to finish; A Fault in too many.

Therefore, if he that is intended to build a House, Barn, &c. has but a little Skill in Arithmetick, let him chuse out of the Neighbourhood some Building to be a Pattern to his Workmen, who, if honest, will tell him very near what such a House or Barn will cost Building; but commonly it costs twice as much (when finished) as the Workmen told him.

But if you are sure your Workmen are honest Men, and fear God, it's best to let them work by the Day, for commonly when bargained for by the Great, it's more slightly done: And begin to Build
so

so that you finish all Walling, Tying, and Plastering before *Michaelmas*.

And Men of small Estates had better buy or hire a House than Build, there being so many built by Rich Men, who would do well not to rack Poor Men by too great Rents, nor obliging their Tenants to Uphold, &c. since Clay-Walls, Thatching, and Glazing is sufficient for a Tenant, with his Rent, and other Charges to the Church, Poor, Highways, &c.

As to building, or repairing of Churches, the Image Makers had more Zeal for their Work in building Churches, and at a more reasonable Rate than Christian workmen will now, that it became a Proverb, when Men were slow in Finishing, and very costly in Workmanship, to say *It's like Church Work*. And the Church Wardens Bills (in too many Places) for Repairs of Churches have seemed very unreasonable.

Josephus tells us, That some of the Stones that were for *Solomon's Temple* were about 21 Yards, and some 22 Yards long; and Pillars of Brass 9 Yards high, and 6 Yards round.

Deut. 22. 8. *When thou buildest a new House, then thou shalt make a Battlement for thy Roof, that thou bring not Blood upon thine House, if any Man fall from thence.*

Battlements ore Turrets of Houses, built flat, as the Leads on the Tops of Churches.

I do earnestly recommend to all Builders, and Workmen employ'd in Building, to learn to Multiply Feet and Inches together, which is the most ready way to measure Buildings, as Walling, Tying, Plastering, Land, &c. and as soon learn'd; and is called *Cross Mu'tiplication*;

One Example sufficient; as,

Let the Length of any Wall, Flooring, Tiling, Paving, and the like be 9 Feet 3 Inches one way, and 7 Feet 6 Inches the other.

First, Upon Paper I set the Length and Breadth, with a Cross between them, as in the Margin.

F. In.

9 3
X
7 6

Secondly, I multiply Feet by Feet, as 7 times 9 is 63, which I set under the first Line

—————

63 ——— 0

4 ——— 6

1 ——— 9

0 ——— $1\frac{1}{2}$

—————

69 ——— $4\frac{1}{2}$

—————

Thirdly, Then I multiply (as the Cross directs) saying 6 times 9 is 54, which I divide by 12 always.

Thus, 12) 54 (4 Foot. and the Remainder is 6 Inches.

48

6

which I set under 63 ——— 0,

Fourthly, I multiply cross again, saying, 3 times 7 is 21, which being small, for it is one 12 and 9, viz. 1 Foot 9 Inches, to be set in the Margin, thus far is well enough for Measuring Buildings.

Lastly, But for more Exactness, you may Multiply the Inches together, as 3 times 6 is 18, but every 12 here is but an Inch, so I set down one Inch, and the 6 of the 18 is half an Inch, and the Answer is 69 Foot 4 Inches, and an half.

Note. That if you were to reduce the 60 Feet, or any other Number of Feet into Yards, divide it by

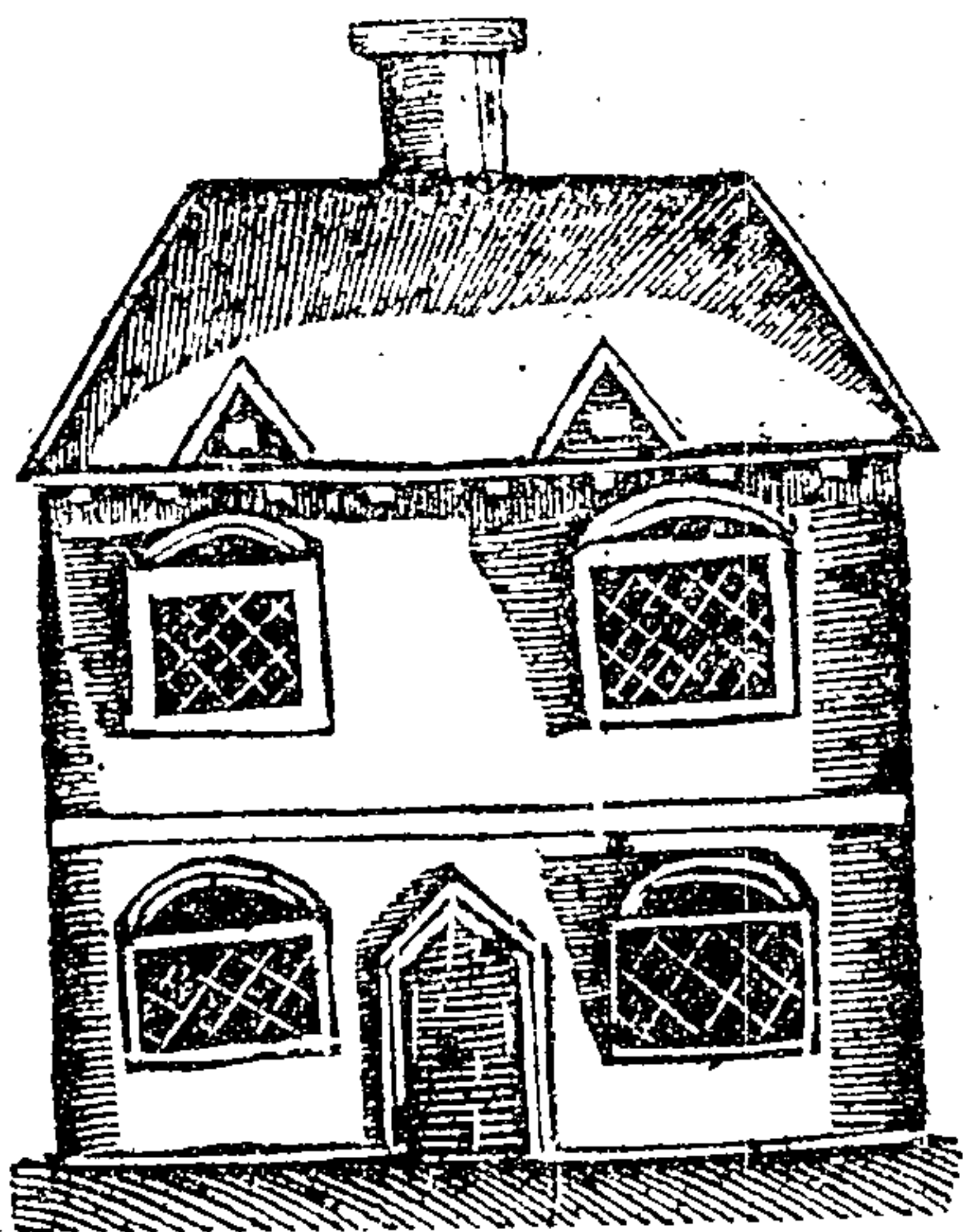
9,

9, the Feet square in a Yard, and the Quotient shews the Yards.

Now by this Rule you may measure the Ground-Plat for to build a House upon: Divide the Ground into Triangles (as I have shewed in Surveying of Land;) and suppose it contains 1606 Feet, divide it by $272\frac{1}{4}$ (the Feet into a square Perch, or Pole) omitting the $\frac{1}{4}$, and the Quotient is 5 Perches, and the Remainder 246 Feet divide by 68, (the Feet in a quarter of a Perch) and the Quotient is 3 quarters, and 42 Feet remaining, which divide by 34 (the Feet in half quarter of a Foot) and 8 Foot remain; so that the Content of the Ground Plat is 5 Perches, 2 quarters of a Perch, one half quarter, and 8 Foot.

So that to purchase such a Piece of Ground of Land worth 20^l. the Acre, would cost but about 14^s. for every square Yard thereof is but the value of a Penny, viz. 9 Feet thereof: See the Sixth Example in Division.

The Charge of Building a House like the Figure following, of two Bays, the length about 34 Feet, Breadth 18, and the Height to the Eaves 16 Foot.

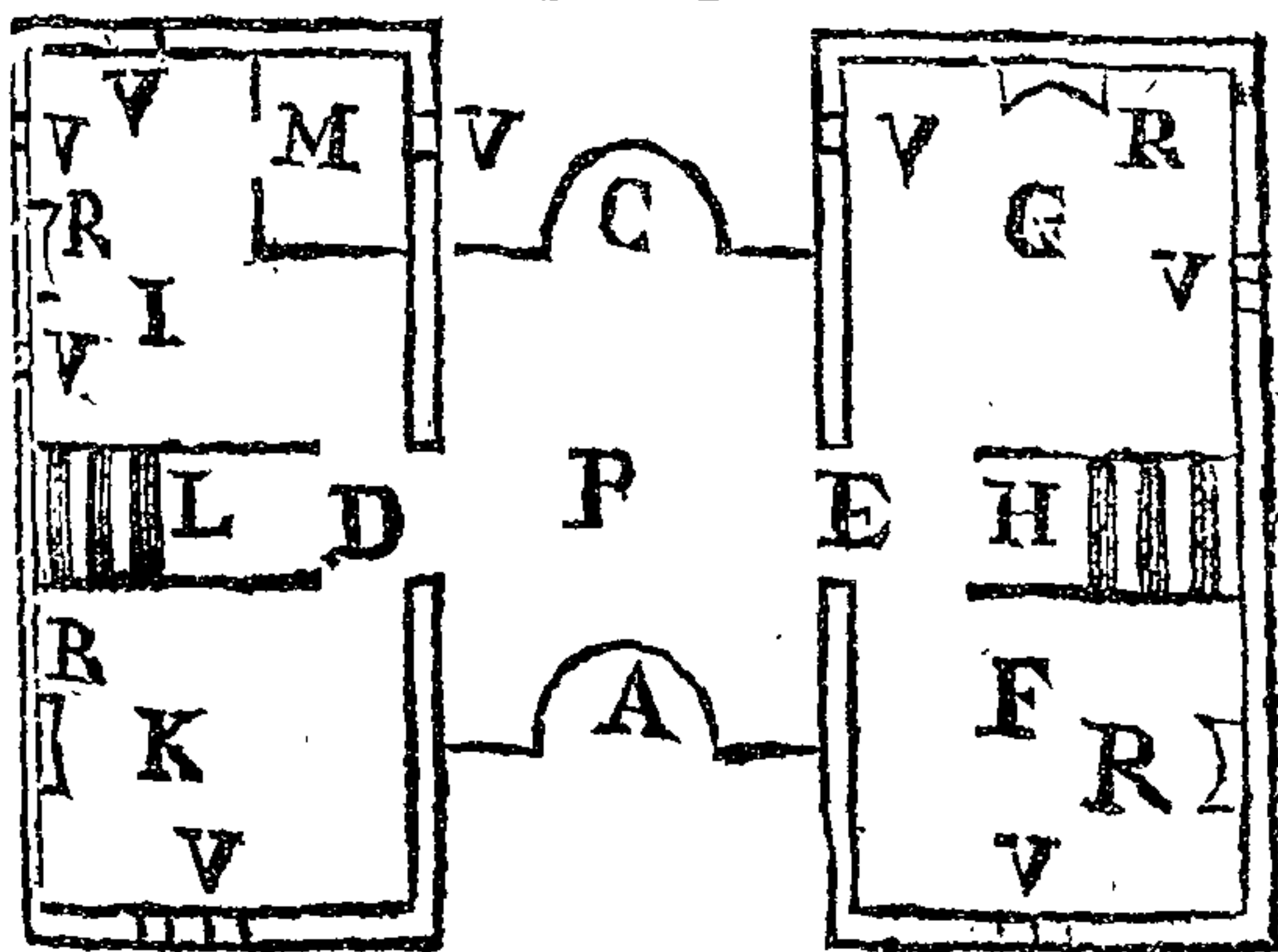


Being a Frame of Wood, the Workman finding all Materials, after the Rate of 33s. the square of 10 Foot for the Frame, and 40s. the square of Tiling, the squares at 3 and 5 Inches square of good white Oak, as also the Studs in proportion, with Window Frames and Doors, the two Chambers and two Garrets Boarded Floors, and the lower Room Paved with Brick, Clay Walls between Studs, and over that Lime and Hair, within and without Doors, except the Front of the House, which should be Lathed, and rough Cast, a handsome Porch, and a little Bay on the back of the House for a Buttery, and a Cham-

Chamber the Charge may come to Seventy Pound.

But if you was to build it of Brick, viz. each Bay 14 Foot square, the first Story two Bricks thick, and 10 Foot high. the second Story one Brick and a half, 8 Foot high, the Doors and Windows arched over, and the Front rubb'd, may come to about 8 Rod, at 6l. the Rod, which is 48l. but before it is finished, it may cost almost as much more if you make every Room handsome.

A Platform, or Foundation for a House, Cross-Bays being strongest.



A. The Door into the Hall.

B. The Hall.

E. The Steps into the Parlor.

D. The Steps into the Kitchen.

F. The Great Parlor.

G. The little Parlor.

H. The great pair of Stairs leading into the Dining-Room, over the Hall and Parlor.

N

I. The

I. The Kitchen.

K. The Brew-house.

L. The Back-Stairs.

M. A Pasterly, or Milk-house, or to set Beer in, if it be the North side of the House.

R. The Chimneys.

Vs. The Windows.

An Easie and sure way, if a Chimney be on Fire, how to Extinguish it. By Mr. Parker.

IF a Chimney happen to be on Fire, and is in Danger of setting the whole House or Building in a Flame, taking the Fire from the Hearth, and set a Tub or Vessel of Water in the Chimney in the Place thereof: Then wet a Blanket or such like thing in Water, and Nail it to the Mantle Piece and sides of the Chimney, so that it reaches the Hearth to keep the Air from the Chimney; which done, you will soon find the Effects, for the Humidness of the Water, will soon cause all the Fire to tumble down.

It was Enacted in the Seventh Year of Queen Ann; That if any Servant, by Negligence and Carelessness, shall Fire any Dwelling-house or Out-house, to pay 100l to the Church-Wardens, to be distributed amongst the Sufferers, or to be kept at Hard Labour, in the House of Correction, Eighteen Months. Exod. 22. 6.

I. Carpenters Work.

THEIR Principal Work, (where Brick or Stone Houses are Built) is Flooring, Partitioning and Roofing: All which are measured by the Square of 10 Foot both ways; so that every 100 square Foot is called a Square; but where Houses are wholly framed out of Wood, the Car-

penters

penters (out of the Owner's round Timber) will frame and set up a House at 7 or 8s. the Square, the straiter the round Timber is, the less in Building.

A Load of round Timber being 50 Foot, it loseth by the Slabs and Sawing 6 or 7 Foot; Build it with white Oak, not red, having lain cut up two or three Years, or more.

To measure the side of a House, or Roof, is done by General Rule before, as suppose the Product of one side be 326 Foot, that is 3 Squares and 26 Foot.

A Gabel is measured as the Triangle E. E. K. in the Circle before.

Note, That in the square of Partitioning they reckon the Door Frames; and that Windows Rooffed into the Roof, are not singly measured, but go into the plain square, and it is accounted amongst Workmen, to take up no more Timber than if there were no such Rooffed little Windows; nor do they deduct for Sky-Lights, and Holes for Chimney-Shafts, and the Funnel for great Chimneys may be 14 or 15 Inches within, and for Chamber Chimneys 10 or 11 Inches.

XVI. Board is measured by the General Rule, some Multiply the Length in Inches by the breadth, and divide the Product by 144 (the Inches in a flat Foot) the Quotient gives the Feet by the Line.

A Board 9 Inches broad, and 19 Foot long, Extend from 12 (called the Center) to 9 downwards, that Extent will reach the same way from 15 to 12 Foot, Answer.

A Board or Tattle 6 Inches wide, and 10 Foot long, Extend from 12 (the Center) to 35 upwards,

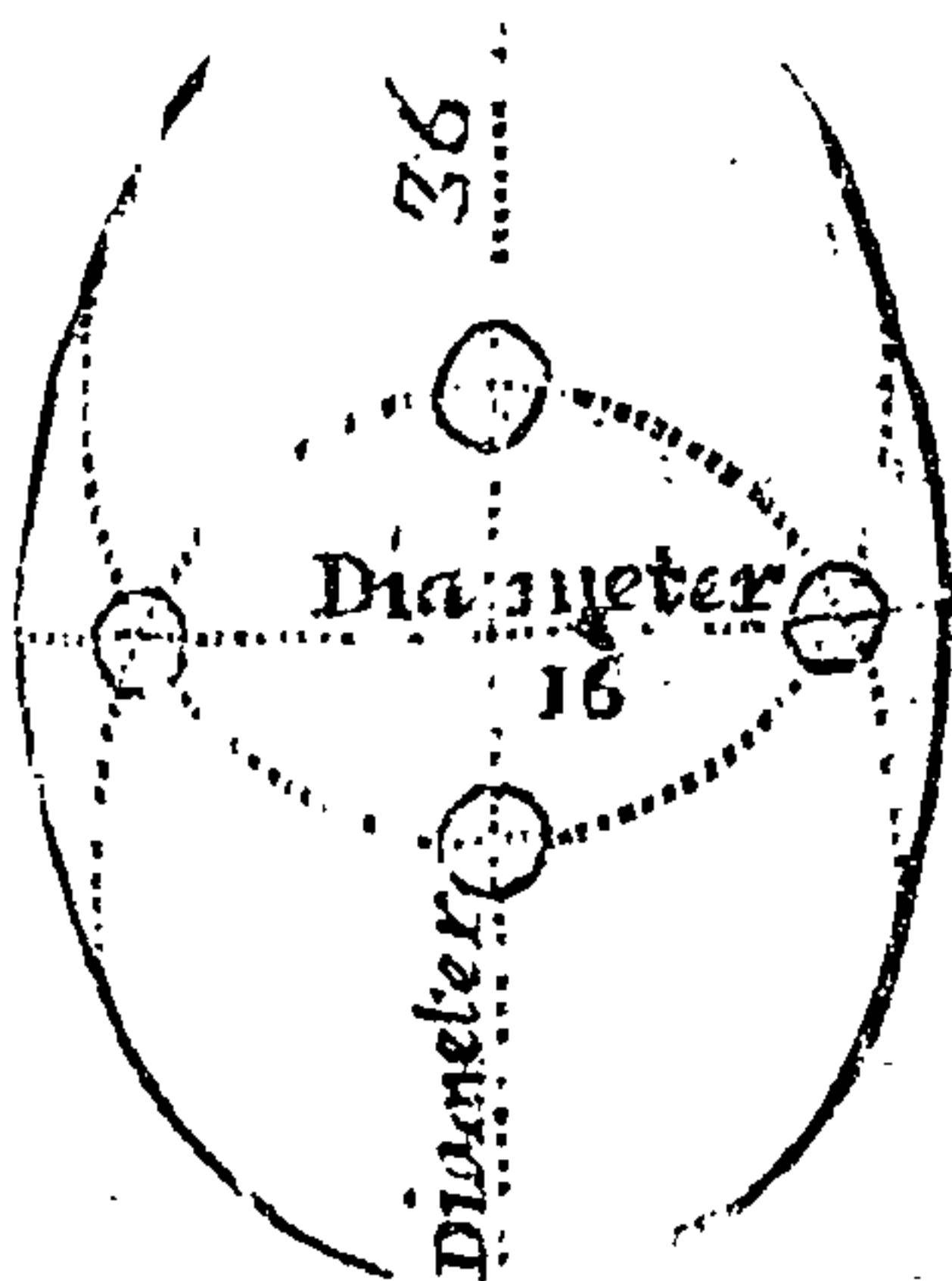
that Extent will reach the same way from 10 to 30 Foot
Answer.

Note, That the Extent was upwards (as from 1 to 2, 3, &c.) was because the Table was above 10. Inches wide, and when a Board is wider at one end than the other, measure the Breadth in the middle, or the Breadth of both Ends added together, take half that Sum for the Breadth.

Or, a Table of 532 Inches in Length, and 49 Inches in Breadth multiply together, gives 26068 square Inches, which divide by 144, gives 181 Foot, 4 Inches, the Answer.

XVII. To measure an Oval Table, or Ellipsis, as suppose the length be 36 Inches, and the breadth 16.

Extend the Compasses on the Line from 16 to 36, the mid-way of that extent is the mean Diameter, having the Diameter, measure it by the Vth Exam. of the large Circle—before, or multiply the longest Diameter by the shortest, and the Product multiply again by 11, and the last Product di-



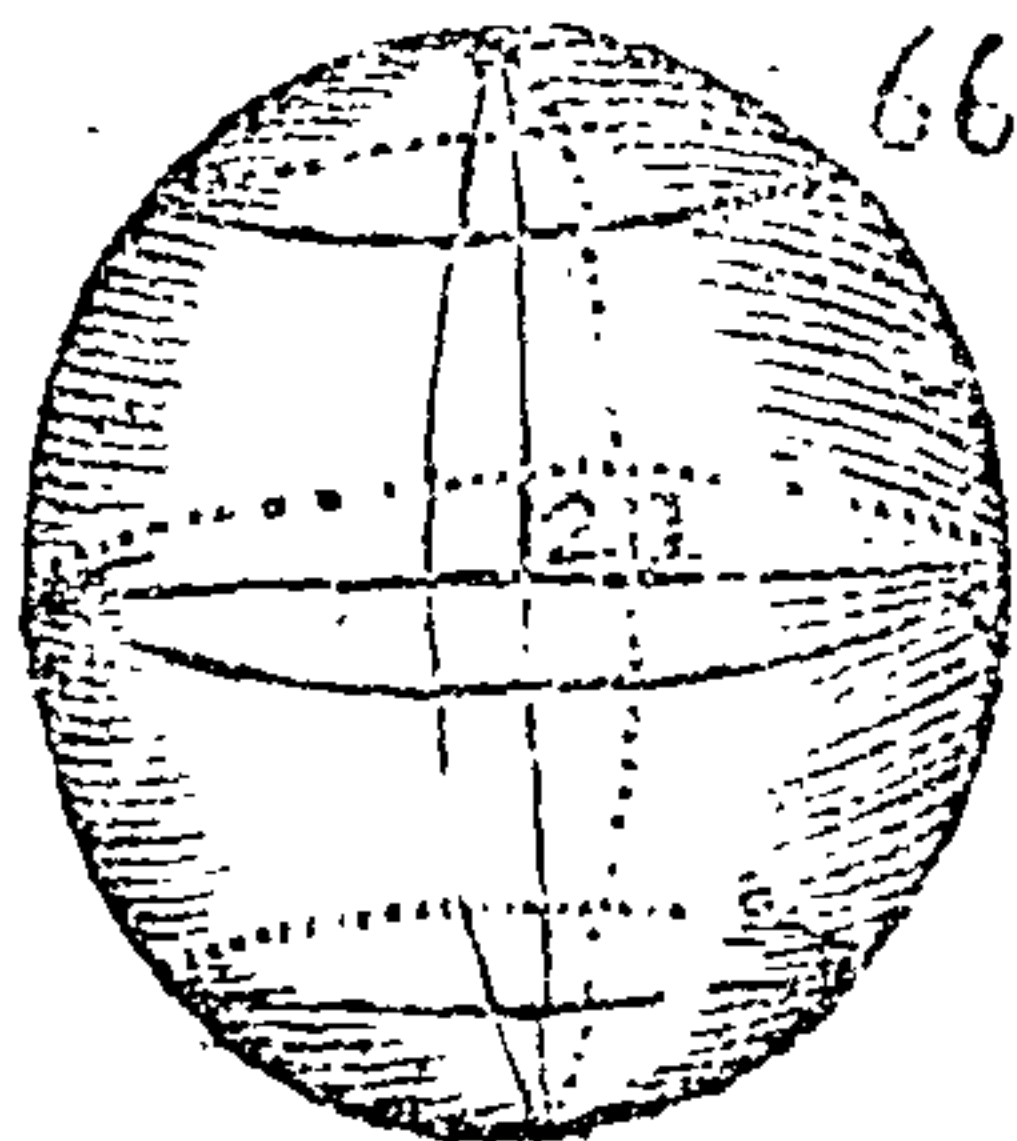
vide by 14, and the Quotient is the Answer in Inches.

Let the Circle be A. B. C D. (before) represent a Globe, or Bullet, how many superficial Inches is there in it?

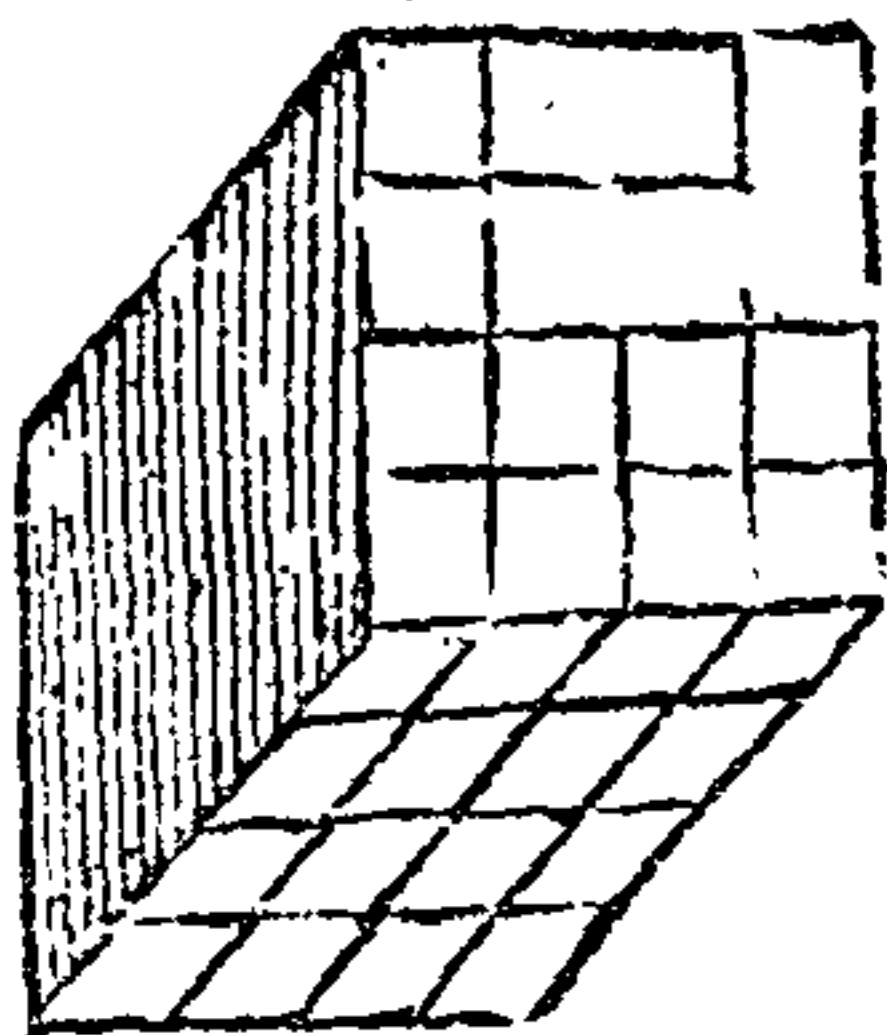
First,

First, Knowing the Circumference and Diameter, Multiply the Circumference by the Diameter, gives the Superficial Content.

To know the solid Content of a Globe, or Bullet in Yards, Feet, or Inches.



Multiply the Diameter in its self, and that Product by 21, and that Product by 11, which divide by 21, the Quotient gives the Answer.



Note, That a solid foot of Timber is 1728 Square, or Cube Inches; 864 Inches is half a foot; 432 Inches is a quarter of a foot.

In a solid foot is 8 Squares, each 6 Inches square; in a solid foot is 64 square quarters of

a Foot; a Board one Inch thick, and 147 Inches and a little above a quarter of an Inch round, as a Circle or round Table, contains a solid Foot; a Vessel of a Foot square may hold about 3 half Pecks and 7 Quarts; a Yard square, that is 27 solid feet, may hold about 22 or 23 Bushels of Wheat; 10 Foot is in a Hoghead, 20 in a Buttr.

But such Allowance ought not to be in measuring of Ash, Elm, Wallnutt-Trees, Pear-Trees, and the like solid Wood (the Bark being cut off round the middle of the Stick, where you take the Girt with a String. as,

Suppose a round Timber Stick of 44 Inches in the Girt, and 27 Foot long, how many solid Feet is therein?

The quarter of the String of the Girt is 11 which they call the square of the Stick in Inches, which Multiplied in it self is 121 Superficial Inches in the Girt (as suppose it were a round Table.)

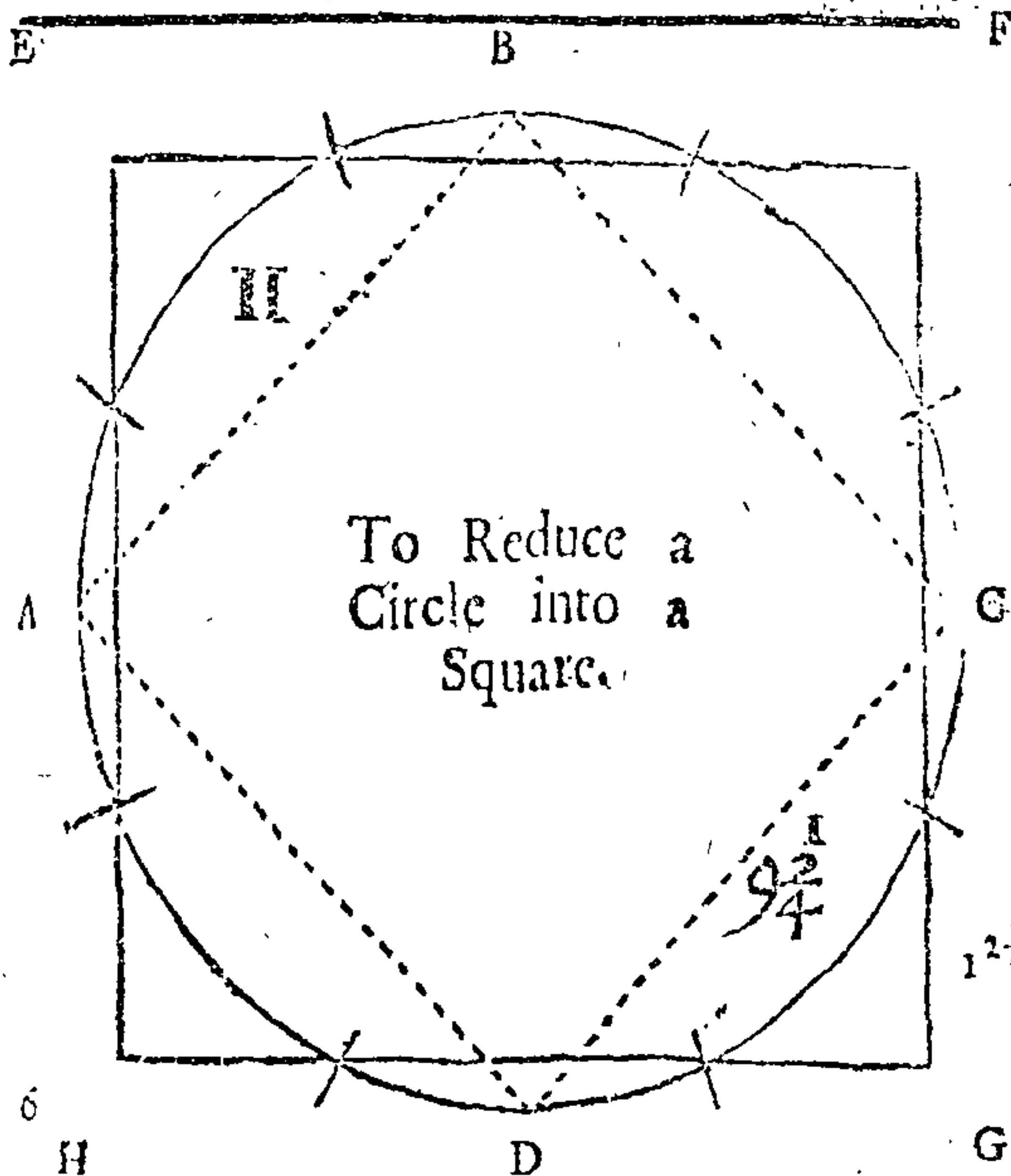
Next, I multiply 121 by 324 (the length of the Stick in Inches) makes 39204 solid Inches, which I divide by 1728 (the solid Inches in a Foot, gives 22 Feet, and 540 Inches, which wants about 5 Foot of true measure.

But this will more plainly appear, reducing any Circle (to prevent the Girt) into a Square exact enough for this, somewhat like the Figure following.

Note, That it is very needful (I think) that a Law was made, that such Gentlemen, that stock up by the Roots, Oak, Elm, or Ash (being found) should plant as many young Trees, for the good of the People to come, as our Fore-Fathers planted for us.

*Good Husbands labour for Posterity,
To after Ages, Saints must have and Eye.*

First,



First, Take your Compasses and draw a Circle upon Paper (of what bigness you please) and lay a Ruler on it, and divide it into 4 Quarters, just through the Center thereof, and divide one of the Quarters into 11 Parts, to represent 11 Inches, the quarter of the Girt, as the Arch-Line A. B. in this Figure A. B. C. D.

Secondly, To draw a Square to be equal to the Circle. Your Compasses having the same Extent you made the Circle with, set one Foot in the Arch-Line, at the Point A. and extend the other Foot towards B. and D. and make Marks in the Circle, as at E. B. do so from B. C. and lay a Ruler

ler upon these Marks, and draw the Square E. F. G. H.

Thirdly, I divide the Arch-Line A. B. into 11 Parts, then with the same Extent of the Compasses divide one side of the square, as the Line F. G. makes $12\frac{1}{2}$ Inches (but to avoid the Fraction $\frac{1}{4}$) I multiply 12 by 12, makes 144, and that by 324 (as before) gives 27 Foot.

Lastly, The quartering of the Strings of the Girt cuts almost all the Slabs, (as I may say) making the the round Stick, as it were square, or squar'd hew'd Timber, somewhat like the dotted Square A. B. C. D. (within the Circle above one side thereof being $9\frac{1}{4}$ Inches (according to the Extent of the Compasses I divide the Arch-Line A. B.) which in the Circle is the dotted Line D. C.) but suppose it is 10 Inches square, and the Stick (as above) 324 Inches long, it makes 18 Foot. Thus it plainly appears that the folding the String of the Girt into Quarters, and call that Quarter in Inches, the true square of that round Timber Stick is false Measure, which way of Measuring is not to be used, except in the Measuring of fappy Oak Timber, because this is most allowed by all Sellers of such Timber: And it is as bad to use false Weights as false Measure. *Lev. 19. 35. Deut. 25. 15. Mat. 7. 2.*

Some more Examples.

The Circumference (as above) being 44 Inches, I Multiply 2821 (the fix'd Number) by it, the Product is 124124, (*viz.* 12 cutting off 4 Figures of the right Hand) gives 12 Inches for the side of the square.

Lastly, The Fraction 4124 so cut off, being less than

than half a 1000, so that the true side of the square is 12 Inches, and almost half an Inch.

Or thus, by Gunter's Line.

Extend the Compasses from 1 (in the middle of the Line upwards) to 44 in Circumference, that Extent will reach from 2821 (a fix'd Number) to $12\frac{1}{2}$ the side of the square, or very near.

To find the side of the Square, having the Diameter only.

Let the Diameter be 15 Inches, extend the Compasses from 1 (in the middle of the Line) upwards to 15 (the Diameter) the Same extent will reach from 8862 (a fix'd Number) counted upwards from the lower part of the Line, will reach to about 13, for the side of the Square: *But by Practice comes Experience.*

The Diameter being 15 Inches, what is the Superficial Content.

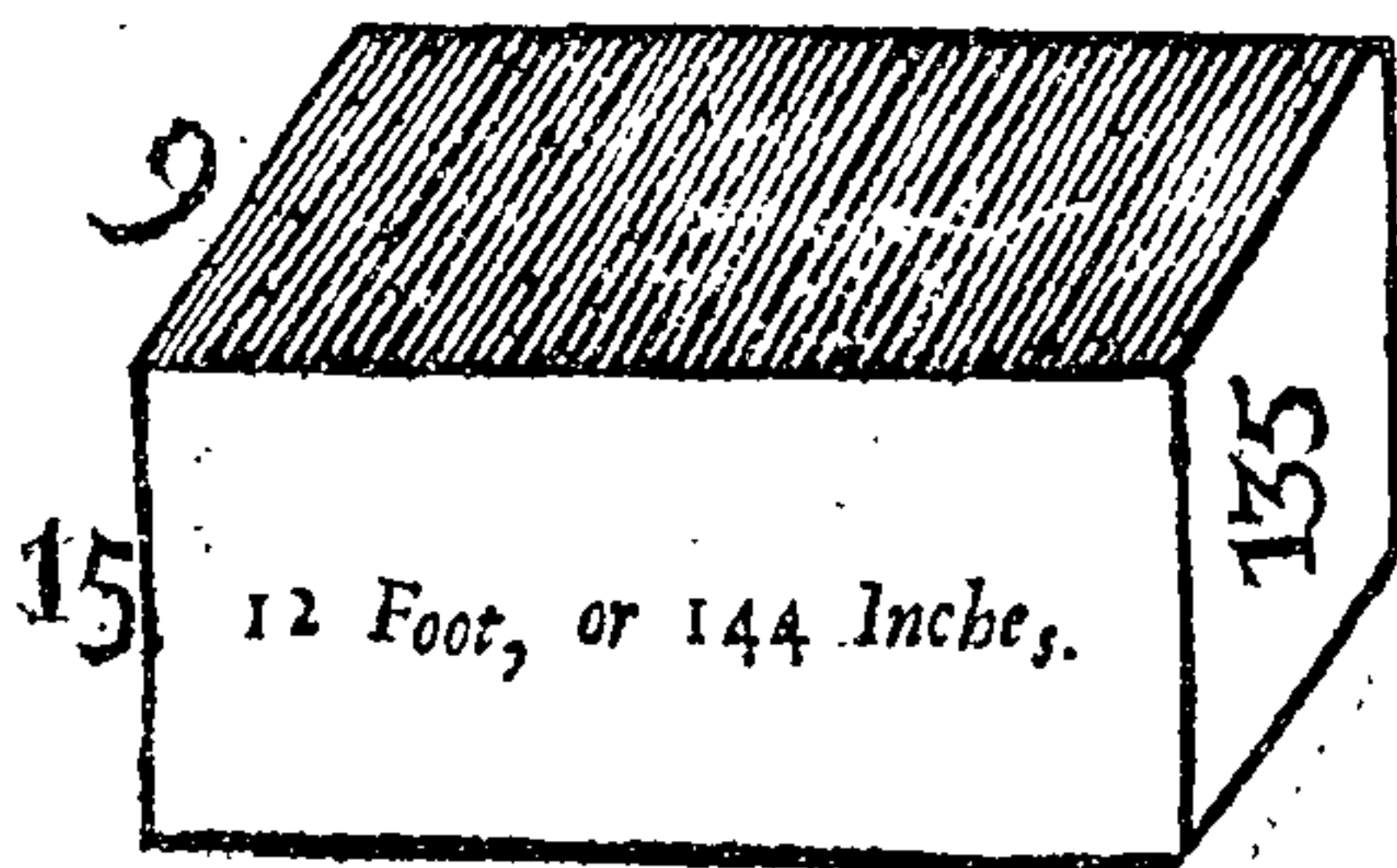
Extend the Compasses from 1 to 15 the Diameter then set one Foot of that distance always downwards to 7854, (a fix'd Number) and turn that distance twice from the Number 15 the same way, and then the Compass Point will fall upon 176 Inches, 74 Parts, the Superficial Content, or Inches in a round Table.

Note, That when your Compasses fall off that part of the Line next your Right Hand, place it

on the same Number on the lower Line, and proceed.

Note, also, When you have found the Superficial Inches of the Girt of a round Timber-Stick, or a Stone-Roll for Garden-Walks, which last, because it's all of a thickness (from end to end) such like forms are called Cilinder, which you may easily measure, by multiplying the Superficial Inches, at the end (or Girt) by the length in Feet or Inches, to find the Content in Feet.

This you may also do by Multiplying Feet and Inches together, viz. Multiply half the Circumference by the half the Diameter, and that product by the length in Feet and in Inches gives the Content in Inches. As suppose the Girt is 44 Inches, to find the Diameter, to take half thereof, multiply it by 7, and the Product divide by 22, the Quotient is 14, the Diameter. Then half the Circumference, which is 22, and half the Diameter 7, multiplied together, gives 154 Superficial Inches for the end of the Timber.



As to the Figure of a Square piece of Timber (above) multiply 15 Inches, the Breadth, by 9, the Thickness, and

and the Product is 135 Square Inches of the end of the Timber, which multiplied by 144, the Length in Inches makes 19440 square Inches, which I divide by 1728, (the Inches in a solid Foot) and the Quotient gives 11 Foot and 14 quarters of a Foot.

Board and Timber Measure by Fractions.

A Board of $15\frac{3}{4}$ Inches broad; how many Inches in Length will make a Foot?

Note, Reduce the $15\frac{3}{4}$, being a whole Number, and a Fraction: Multiply 4 the Denominator, by 5, the whole Number, adding 3, the Numerator.

Thus $6\frac{3}{4}$ which is an improper Fraction.

$$6\frac{3}{4} \times 144$$

Note, the 144 signifies the Inches in a Foot, then multiply Cross-ways, as once 63 is 63, and 4 times 144 is 576, for Dividend and the 63 is the Divisor.

63) 576 ($9\frac{2}{3}$ Inches in Length, the Answer.

567

9

11. If a Board be 6 Foot $\frac{2}{4}$ long, and $8\frac{5}{8}$ broad, how many square Feet is therein?

$6\frac{1}{2}$ $8\frac{5}{8}$ being reduced are $1\frac{7}{4} = 5\frac{3}{8}$;

Then

Then Multiply 27 by 53 for Dividend, and the Denominators 46 together, makes 24.

24) 1431 ($59\frac{15}{4}$ Foot, and almost half.

120

~~120~~

231

216

~~216~~

15

Makes $14\frac{3}{4}$

III. How many Inches of Board is contained in $15\frac{3}{4}$ Inches Broad, and $9\frac{2}{3}$ Inches long? Answer.

$15\frac{3}{4}$ $9\frac{2}{3}$ reduced as before, makes for Numerators 36218 to be the Dividend, and 252 for Divisor.

252) 36218 (144 Inches Answer.

252

~~252~~

1108

1008

~~1008~~

1008

1008

~~1008~~

Timber Measure.

1 **A** Piece of square Timber of 6 Foot and an half long, and $5\frac{1}{4}$ broad, and $7\frac{1}{3}$ Foot thick, how many solid feet is therein?

Reduce the whole Numbers and Fractions severally into improper Fractions (as before) then multiply the Numerators one into another for Dividend, and the Denominator for Divisor.

Example,

Example.

$6\frac{1}{2}$ foot; $5\frac{1}{4}$ foot; $7\frac{1}{3}$ foot;

being reduced,

Are $\frac{1}{2}$ $2\frac{3}{4}$ makes $6\frac{0}{24}$.

24) 6006 (250 $\frac{6}{24}$ Foot, Answer;

48

120

120

06

The whole
divided.

11. If a Piece of Timber be $34\frac{1}{4}$ Foot long, $42\frac{1}{3}$ Foot broad, and $50\frac{1}{6}$ Foot thick, how many solid Feet? Answer, $72737\frac{3}{2}$.

$34\frac{1}{4}$ foot; $42\frac{1}{3}$ foot; $50\frac{1}{6}$ foot;

being reduced,

Are $13\frac{7}{4}$ $12\frac{7}{8}$ $30\frac{1}{2}$.

Numerators multiplied, are 5237099

Denominators multiplied, are 72

Divide them as before, Quotient $72737\frac{3}{2}$

Suppose there is a Walk, which is a long Square, whose length is 40 Yards, and breadth 7 Yards, to be Paved with Stones that are 28 Inches in length and 24 in breadth, I demand how many of such Stones will pave the said Walk.

Breadth

Breadth in Inches 252
Length 1440

10080
1008
252

Square Inches in the Walk 362880

Stones { 28 Length } in Inches.
 { 24 Breadth }

112
56

Inches 672 of the Stones.

672) 362880 (540 Stones, Answer.
3360

2688
2688

0

How many Foot of Glass is there in 488 Squares, each Square being $7\frac{3}{4}$ Inches one way, and $8\frac{1}{2}$ Inches the other?

They being whole Numbers and Fractions, reduce them into improper Fractions. [See Timber Measure by Fractions before.]

Being reduced stands thus, $3\frac{1}{4}$ and $1\frac{7}{2}$

Then Multiply 31 by 17, makes 527 for Dividend, and the 4 by 2, makes 8 for Divisor, gives in the Quotient $65\frac{7}{8}$ Inches in one Square, then say,

If

If $65\frac{7}{8}$ Inches be one Square, what will 488 Squares?

Being reduced are $488\frac{527}{8}$; then multiply 527 by 488, and the Product is 25716, to be divided by 8 gives 32147 Inches, which divide by 144 (the Inches in a Foot, gives $223\frac{35}{44}$ Feet, Answer.

Suppose a Bridge of Planks 103 Feet long, five Feet and a half wide, and 3 Inches thick, how many solid Feet of Timber is there in it?

Length 103 Feet.
Breadth $5\frac{1}{2}$

The 5 multiplied is 515
The half of 103 is 51

The 51 added is 566
Multiply this 3 Inches thickness,

Sum of Inches 1698
which divide by 12, because 11 Feet of Board make a Foot solid, this

12) 1698 (141 $\frac{1}{2}$ Feet, Answer.

12

49

48

18

12

6

A more exact way.

Reduce the 103 and $5\frac{1}{2}$ Feet into Inches by 12, and multiply them together, and the Product multiply

multiply by 3 (the thickness) the last Product divide by 1728 gives $141\frac{3}{4}$ foot of solid Timber.

Note, That in such Questions as this, I would not have the Carpenter trust to *Gunter's* Line alone, but prove his Work by the Pen in Arithmetick.

The Use of the Carpenters plain Rule in the Measuring of Board, Glass, &c. Shewing somewhat of the Errors in the Carpenters in measuring Timber with the Rule.

First, The Rule two foot long, and divided into 24 Inches, and every Inch into half Inches, and half Quarters.

Secondly, The Table for under-board Measure is thus described.

1	2	3	4	5	6	1	7
12	6	6	3	2	2		
0	0	4	0	4	--		

This line begins at 6 and goes on to 36, within 4 Inches of the end of the Rule to the right Hand.

The Use.

If a Board be $\left. \begin{array}{l} 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 6 \end{array} \right\}$ Inches broad. $\left. \begin{array}{l} 12 \\ 6 \\ 4 \\ 3 \\ 2 \\ 1 \end{array} \right\}$ F. I. Pts. in leng. will make a foot square.

By

By this Table you may see that a Board of 4 Inches broad, will require 3 foot thereof in length to make a foot square.

Also, a Board of 5 Inches broad, will require a foot 4 Inches, and $\frac{4}{5}$ Parts of an Inch.

The Use of the Line.

If a Board be 9 Inches broad, how much of that in length will make a foot square?

Look for 9 Inches upon the Line, (that is, at the figure 9 upon the Line) and just against that, on the other side of the Rule, you shall find 16 Inches, which sheweth, that every 16 Inches of that Board in length will make a foot square.

Note; That if a Board be 9 Inches and a half broad, see the part of the Line, against which, on the other side, will be 15 Inches, or about $\frac{1}{2}$ part.

A Pane of Glass that is 22 Inches broad, how much thereof will make a foot square?

Look for 22 Inches in the Line, and right against it (on the other side of the Rule) you will find 6 Inches, and almost one half, and so much in length of that breadth will make a foot square.

If a Table or Board, be 30 Inches broad, how much thereof in length will make a foot square?

Look for 33 Inches on the said Line, and right against it (on the other side of the Rule) you shall find 4 Inches $\frac{3}{4}$, that is, 4 Inches, and 4 fifth parts of an Inch, and so much thereof will make a foot.

At the other end of the Rule is the Table, called Under-Timber Measure. thus described.

1	2	3	4	5	6	7	8	9
144	36	16	9	9	4	2	2	
0	0	0	0	9	0	11	3	

This Line begins at 8 and an half, and so goes on (by Divisions) to 36.

The Use.

If a piece of Timber be	1	Inches square	144	0	in length will make a Foot Solid.
	2		36	0	
	3		16	0	
	4		9	0	
	5		5	9	
	6		4	0	
	7		21	1	
	8		2	3	

Here you may see that a piece of Timber that is 4 Inches square requires 9 Foot in length to make a Foot solid.

The square of any piece of Timber at the End thereof being known, to find how much of that piece in Length shall make a Foot solid.

Example.

A piece of Timber that is 13 Inches square, how much thereof in Length will make a Foot solid?

Look

Look for 10 Inches in the Line of Timber Measure, and right against it, on the other side of the Rule, you shall find 17 Inches, and somewhat above a quarter of an Inch, and so much of that piece in length will make a foot solid, containing 1728 Inches to the foot; but in a square foot of Board is 144 Inches.

Another.

If the square of a piece of Timber be 21 Inches, how much thereof, in Length, will make a foot solid?

Seek 21 Inches in the said Line, and against it you will find, on the other side of the Rule, almost 4 Inches, and so much in Length will make a foot solid.

Note. If squared Timber be broader at one End than the other, the usual Way is to add both Ends together, (the true way for Board-Measure) and take half thereof for the true Square; but if the Difference be very much, this way is erroneous, (yet for the most part practiced) which I shall prove by the following Example.

Suppose a piece of Timber be 9 Inches thick, 15 Inches broad, and 12 foot or 144 Inches long, how many square feet is in the same? The Answer will be 12 foot by the Rule.

XX. To measure Timber that is squared by the Ax.

Multiply the Breadth by the thickness in Inches, and that Product by the length in Inches, and the last Product divide by 1728 as before.

A piece of Timber 24 Inches square, and 8 Foot long

Extend from 22 (the Center) to 24 upwards, the Extent, twice the same way will reach from 8 to 32 foot.

Note, That some Carpenters add the breadth and thickness together Inches, and call half thereof the square of that piece of Timber, but if it be wider than it's thick, they measure it for more than is in it.

But to find the true square, is by placing one foot of the Compasses upon the Line for the breadth, and the other foot for the thickness in the midway of that Extent, is the true square in Inches.

II. Of Bricklayers Work.

Bricklayers measure their Walls commonly by the Rod of 16 foot and half, (as Land) the Rod containing 272 and a quarter square feet upon the Superficies of the Wall.

Their Materials, or Brick, made of a reddish Earth, which ought to be digged before Winter, and not made till Spring, to be well seasoned with Frost, the Moulds according to the Statute, ought to be within side in length 9 Inches, in breadth 4 Inches and half, and in thickness 2 and a quarter; a Cart Load of Bricks is counted 500, and of Tiles 1000.

It's said that a square Yard of well wrought Clay will make 7 or 800 Bricks, and that out of the Owners Clay a Workman for 6 or 7s. the 1000 will

will make them without any further Charge to the Owner.

But if you buy Brick or Tile, chuse such as are of a bright red Colour, and that will ring when knock'd, but the blackish glazed Bricks are best for Chimney Stacks.

Note, that the less Water you put to your Lime, and Sand, the better will the Morter be, but it will require much more Labour in working it: For Morter to abide such Weather, put Cinder Dust with it, to be had at the Smith's Shop.

Digging Clay to make Bricks. A square Yard being
27 square Feet.
A Pit 18 Foot broad.
8 Foot deep.

144
20 Foot in length.

2880 Feet in all.

27) 2880 (106 Yards 18 Feet, *Answer.*

27
—
180
162
—
18

To measure Brick-Walls.

Suppose a Wall be in length 120 foot, and 13 foot 3 inches high, the Product will be 1590 foot, which reduce to Rods, by dividing it by 272, omitting the $\frac{1}{4}$ of a foot as

as not regarded by Workmen) the Quotient gives
Rods, 3 Quarters, 26 Foot.

Note, That 136 Foot is half a Rod, 68 a Quarter
and 204 Foot, 3 quarters of a Rod.

Or extend from 272 to 13, and a quarter of the
great Division on the Line downwards, that extent
will reach the same way, from 120 to five Rods
and above 4 Parts, the Answer.

Having measured the Face of the Wall, or House
on the outside thereof, then measure the end thereof
on the inside, and make Deduction for Doors and
Windows. *Note,* But if the Wall be either thicker
or thinner than a Brick and half, it must be reduced
into Standard Measure, (that is one Brick and half
thick.)

The Rule.

Multiply the Number of Feet, Measured on the
Face of the Wall, by the Number of half Bricks the
Wall is in thickness, one third part of that Product
gives the Number of feet contained in the Wall
which reduce into Rods, by dividing it by 272,
above. By the *Line*.

How many Rods of Brick-work is there in 4085
Foot? Extend from 272 to 2 downwards, that extent
will reach the same way from 4085, to about 15
Rods, Answer. Or thus,

If a Wall be 9 Rods on the outside, and 5 half
Bricks thick, How many Rods of a Brick and a half
is there in the Wall? As 3 is to 5, so 9 to 15, Answer.

Extend from 3 downwards to 5, that extent will
reach the same way, from 2 to 15 Rods, Answer.

Charge of a Rod of Brick-Work.

For 4500 Bricks at 15s. the 100	l. 33 — s. 15 — d. 0
For 32 Bushels of Lime at 9d.	1 — 04 — 0
For 3 Load of Sand	0 — 05 — 0
Workmanship by the Great	1 — 02 — 0

Feet 1 Brick 1 Brick & half

1	0176	0264
2	0352	0528
3	0523	0784½
4	0704	1056
5	0880	1320
6	1056	1584
7	1232	1848
8	1401	2110½
9	1584	2376
10	1760	2640
11	1936	2904
12	2112	3168
13	2288	3432
14	2464	3696
15	2640	3960
16	2816	4224
17	3092	4638
18	3168	4752
19	3344	5106
20	3520	5280

A Table shewing the Number of Bricks, or very near that a Wall may take up of 16 Foot and half long, of any thickness, and to any height, not exceeding 20 Foot high.

The Use.

A Wall of under pinning, a Rod in length, and one Foot high.

Look in the top of the Table for 1 foot in the first Column, and against it is 176, shews that so many Bricks will do it, at 1 Brick length thick, and 264 at 1 Brick and a half thick, as the Table sheweth. At 3 Bricks

thick, double the Number 264, and so of the rest.

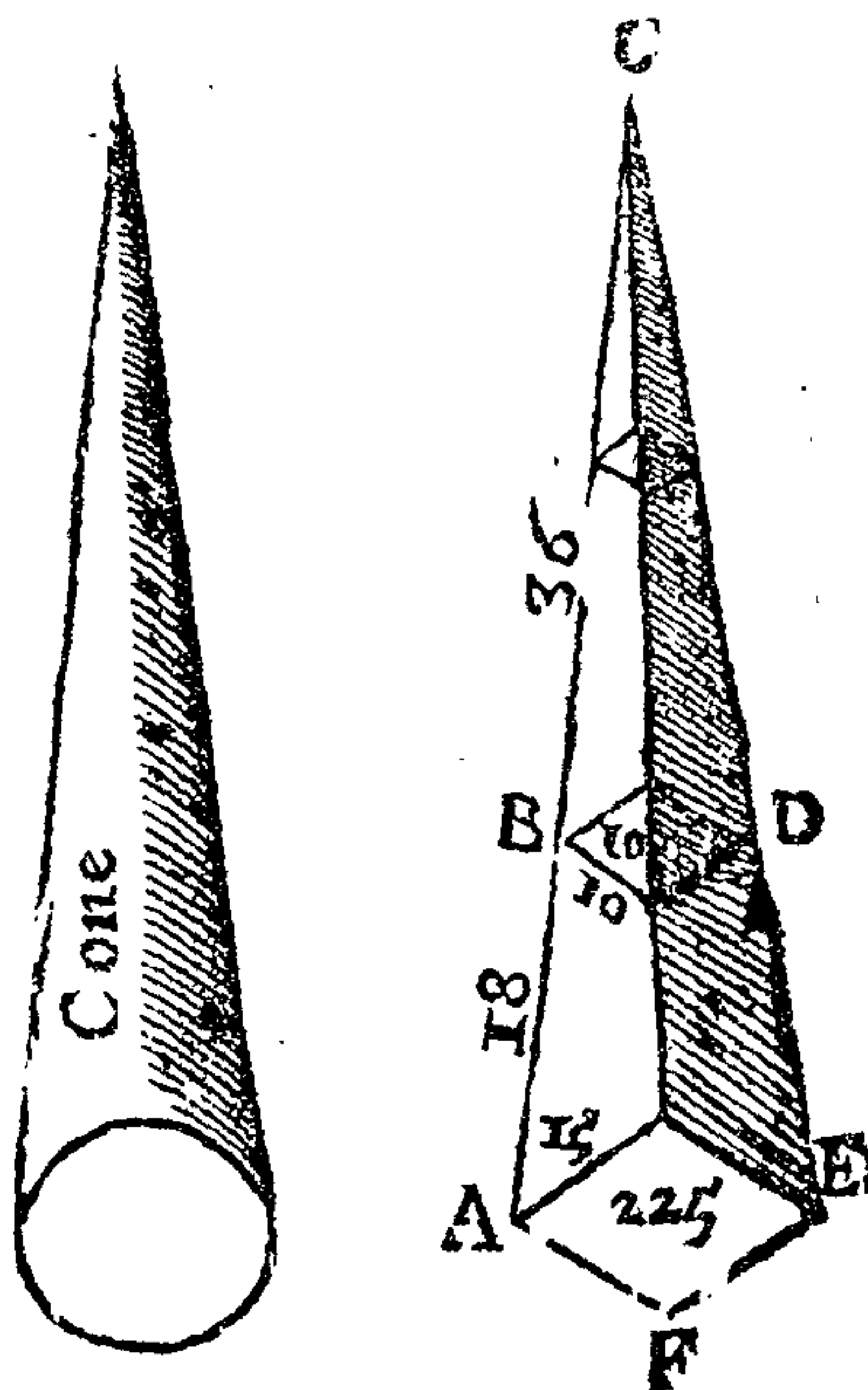
Note,

Note, That all Joyns and Summers that are to lie in Brick-Walls, ought to have their Ends run over with Pitch, to preserve them from Lime.

As to measuring of Chimneys, I need not write of, for they commonly are done by the Great; and *Note*, That if the inside of a Chimney Shaft does as it were lean Northwards, it carries off the Smoak better: And that all Chimneys, tho' of Stone or Brick, should be well Morter'd on their insides with Clay, well temper'd with Horse Dung; for Sparks have got thro' the Cracks of a Brick Chimney, for want of Plaistering, and set the House on Fire.

Where the Foundation of Brick-Walls are to be Built should be firm and dry; but if any Spring, drive Elm Stakes there, with a two Handed Beetle.

To measure a Cone, or round Spire-Steeple.



Multiply the Superficial Inch at the bottom thereof, which having found, Multiply them into one third of the length in Inches, gives the Solid Inches, which divide by 1728, the Quotient gives the Feet.

To measure the other Pyramid, or square Spire-Steeple.

Multiply the Line or Side A. F. (that is, one side in its self) gives the Superficial Inches at the bottom,

bottom; then Multiply the *Sum* or *Product* into one third part of the length (as the *Cone*) gives the Content in Square Inches.

By the Line.

Extend from 1 to 225 the Flat Inches at the Base (or the bottom of a Pyramid A. E. F.) upwards, that Extent, the same way, will reach from 18 (one third part of the length) to 4050 the Content in Cubical Inches.

To measure the Segment, or Frustrum, (so call'd) of the Pyramid, or lower end A. B. C. D. E. F. the lower B, C. D. being cut off.

The easiest way thus: Suppose the whole Pyramid, or Cone, to contain (as before) 4050 Inches, then measure the top part B. C. D. singly, which suppose to be 1200 Inches; Subtract this from 4050 and the Remainder is 2850 Inches, the Content of the *Frustrum* A. B. D. E. F,

III. Of Tiling.

Tiling is measured by the *Square* or *Foot*, as the *Carpenters* Work.

The Charge of a new Square of Tiling.

	<i>l.</i>	<i>s.</i>	<i>d.</i>
For 700, or 750 Tiles, at 18 <i>d.</i> the	100	00	— 11 — 03
For 100 of 5 F. Lath, 7. nail'd in 2 F.	00	— 02 —	00
For 2 <i>Bushels</i> of Lime well burnt	— 00 —	01 —	00
For half a Peck of Oak Tile-Pins	— 00 —	00 —	03
For 500 of Reparation Nails	— 00 —	00 —	10
For half a Load of sifted Sand	— 00 —	01 —	00
For 7 Ridge Tiles	— 00 —	01 —	02
Workmanship by the great	— 00 —	03 —	00
	Sum	01 — 00 —	06

Note, The readiest way to measure a Tyled Roof, is to tye a Stone to the end of a Line, and put it over the Ridge to reach from Eves to Eves, then Measure the Line and Work, as is shew'd in the General Rule.

A Workman will find all Materials (in some Places) at 25 *s.* the *Square*; or repair old Tiling with new Lath, Mortar and new Tiles, where Need is, for about 12 *s.* the *Square*.

It's said, that a strait-grain'd round peice of Oak-Timber, 10 Inches *square*, may be render'd into 400 Laths and that a Workman will rend 1000 for 3 *s.*

Five foot Lathe is 5 score to the 100, and four foot Lath 120 to the 100.

A Piece of Timber (it's said) of six Inches and half broad, and three Inches and half thick, cuts 8 Eves Laths.

When the Morter is worn much out of your old Tiling, point it with Lime, Hair, and Sand, to prevent the Wind blowing them off, or Snow driving under the Tiling, for there it lodgeth on the Ceiling under the Tiles, (if ceiled) and when it thaws may do much Damage to the Ceiling and to some Goods in the House.

Plain Tile to be in length 10 Inches and a half, in breadth. 6 Inches and a quarter, in thickness half an Inch and half quarter at the least.

Roof Tile in length 13 Inches, and the thickness half an half quarter at the least.

Gutter Tile 10 Inches and half in length, and he that Sells any that is not so, forfeits to the Buyer double the Value, and further Punished, 17. Edw. c. 17.

IV. Of Plastering.

Plastering or Cieling is measured by the Yard square, of 3 Foot, which is 9 Foot.

The length and breadth being Multiplied together.

To make Rough cast Blewish, work Lead Dust in the Morter, to be had at the Plummers, and cast small Pebble Stones on the Plastering, before it is dry, and when dry Colour it.

Note, That if you are about to measure the Plastering

stering of most of the Rooms in a House, by the general Rule, do thus:

First, Upon a Sheet of Paper draw 4 Columns, as (1) the Name of the Wall, lying East or West, &c. or Gable End: (the length in Feet and Inches; and the last Column for the Content in Yards, Feet, and Inches, done from the general Rule.

Having finished every Room, you may (if you will) prove your Work by *Gunter's Line*, thus,

A Wall Ceiled 4 foot wide and 7 foot long.

Extend from 9 always (the feet in a Yard) to 5 upwards, that Extent, the same way, from 7 will reach to 4 Yards, Answer.

Note, also, In another place of the Sheet of Paper, make four Columns more, for the several Deductions of Windows, Doors, Chimneys, and Hearths, and the like.

To reduce the several Products of Feet, Divide them by 9; and the Quotient gives the Yards to be placed in the last Column.

Note, That bricks between Studs keep not out driving Rain so well as Lathing and Plaistering without Doors.

The Charge of a Ceiling of 6 Yards.

	s.	d.
For 100 of five foot Laths	2	00
For 500 Reparation Nails	0	10
For 2 bushels of Lime and Sand	1	06
For 3 pecks of Hair	0	09
Workmanship, with Lathing 3d. the Yard	1	06
0 3		It

It is dangerous to sleep in a Ceil'd, or Plaister'd Room, with the Door shut where *Charcoal* is burning, but more especially if the Room was lately Ceil'd: It was the Death of the Emperor *Forian*, Historians say. And for my part, when I was in a Room where *Charcoal* was burning, the Door being shut, I came out almost stifled, and did hardly recover it till Night.

The Plaisterers in *Bedfordshire* will find Materials and Workmanship for 12 *d.* the Yard Without Doors, and 10 *d.* the Yard within Doors; but if there's a considerable quantity of Work to be done, they will do it at 10 *d.* the Yard, or 2 *d.* the Yard, the Owner finding Materials.

Note, That Hart Lath is best to be used both within and without Doors, tho' some are for Sap-Lath in the House, but there's nothing saved, at long run, by using Sap-Lath.

A Room Ceil'd, you may easily keep out both Rats and Mice, by stopping the Holes they come in at with Morter mix'd with *Rats-Bene*; but if either Dogs or Cats come there, then stop them with Pebbles and Mortar wrought with beaten Glass.

V. *Paving with Brick.*

THirty two covers a Yard. A Workman will find Lime and Sand, and lay them at 8 *d.* the Yard. Some People lay them with Sand only, and serve pretty well in a dirty Room.

VI. Of Pitching and Paving.

Pitching is also measured by the Yard: The Charge of Pitching eight Yards, *viz.* A great Cart Load of Pebbles worth 4 s. and a Cart load of Gravel 2 s. Workmanship 2 d. half-penny the Yard; but there will want more Gravel, if the Ground be not firm.

Paving with free Stone, well smoothed, is worth 12 d. or 14 d. a Foot: But Marble Stone, so smoothed, 2 s. 6 d. a Foot.

VII. Of Joiners Work.

Joiners Work is measured by the Yard, somewhat as the Plasterers, only where there is a Cornish, (in a Room Wainscotted) or swelling Pannels, and Mouldings, they take the depth of the Room with a Line, denting it into the hollows, and then measure the Line in Feet and Inches for the height of the Room; and then measure round the Room with a four foot Lath, (as Plasterers do for the more Expedition) and multiply the length and breadth, as in the General Rule, Example III; and the *Product* divide by 9, and the *Quotient* shews the Yards (as of Plasterers Work) before, deducting for Doors, Windows, Chimney pieces, &c.

In measuring Window-Shutters, (in a Room) being all of one height, they measure the height of one, and call that the breadth; and for length they measure the breadth of them together, which are to be *Multiplied* together, *viz.* the length and breadth by the said General Rule, (which is more

exact than by *Gunter's-Line.*) Now suppose the Product is 246 foot 6 Inches.

The Joyner being paid for the out side of the Shutters for the whole Work so called; and for plaining the other side of the Shutters is called half Work, to be paid at half the price of the other.

Therefore the said Product for the best side of the Shutters being 246 foot 6 Inches, to which add half thereof for the said half Work, makes 369 foot 9 Inches, to be reduced into Yards by dividing it by 9 as before.

The same way of measuring they observe for Wainscot Doors, and Cupboard-Doors, where they are plained on both sides.

Lastly, If the Cheeks or Jambes of three Windows Wainscotted, be in length in the whole 62 foot, and the breadth 5 Inches, done by the general Rule, makes 25 Feet 10 Inches

VIII. Of Glaziers Work.

THE Glazing of new Windows is measured by the foot. Plain Glazing 6*d.* the foot; new Leading 3*d.* Repairing 2*d.* a foot; single Quarry fixing 1*d.* the Glazier finding the Quarry.

A Quarry of ordinary Glass (like the Figure marked W in the Circle before) is six Inches from Corner to Corner oneway, and 4 Inches the other, containing 12 Inches in all, and therefore 12 Quarries make a Foot.

To measure large square Panes of Glass, see the Question in Timber Measure by Fractions.

Note, Let the Panes be rubbed well when fixed in the Lead, with Linseed Oyl to keep out Rain.

If

If you have several Panes of Glass in one Room all of one height, lay a String along the Glass of the Window, and take the breadth of all them together into one Sum, which call the length; and the height of one Pane, the breadth; and work by the general Rule, not deducting for Ovals and half round or crooked Windows as in Stone-work, for they are all measured as if they were square, because of the loss of Glass, and the trouble in fitting them.

To stop Cracks in Glass Windows, Pots or Bottles, Grind Bole-Armoniack, white and red Lead, with Linseed Oyl, make Plaisters with Rags, But for broken Earthen Dishes, that are to stand on Shelves only, you may set them together with the White of an Egg well mixt with a little fine Wheat Flower.

Every Foot of new Sheet-Lead weighs, it's said, 8 or 9 $\frac{1}{2}$ but the old 6 or 7 $\frac{1}{2}$.

A Yard square of new Sheet-Lead is worth 13, 14, or 15s. and a square of 10 foot, 7 or 8l. in Money, besides Soder at 9d. or 10d. the $\frac{1}{2}$. The Exchange of old Sheet-Lead for new, is in some Places, 3s. the 100 Weight.

Note, That when Workmen have undertaken to finish a Building, &c. and leave the same Work without just Cause, two Justices may commit the Offenders to Prison, without Bail, for a Month, and to forfeit five Pounds. See 5 Eliz. 4.

Note, also, That new Panes of Glass may be set up within Doors of Garret Windows by Pieces of Lead soldered round the edges about 7 Inches asunder to twist on Nails, driven into the Jambs.

IX, *Of Painters Work.*

THEIR Work is measured as the Joyners Work, by the Yard, But dected in where the Brush goes.

Painting Wainscot with Oyl Colour, thrice done over, 10 *d.* the Yard, if Linseed Oyl is not too dear, and 6 *d.* the Light for large new Window-Frames,

Note, That Linseed-Oyl, done over any Timber both within and without Doors, preserves it from Worm and Weather, so as it be done over with a Brush in dry Weather, once evrey seven Years, without being ground with Colours, as the Glovers grind their Colours for Gloves.

Whites are, *Ceruse*, *Flake White*, and *White Lead*,

Black, are *Lamp Black*, or the Soor that comes by burning Oyl in Lamps, *Cherry-stones* burnt, or old *Ivory Knife-hafts* burnt.

Reds are, *Red-Lead*, *Vermillions*, *Red-Oker*, *Indian-Lake*,

Greens, are *Verdigrease*, *Verditer*, and *Sap Green*, made of the Juice of ripe *Buckthornberries*, and kept in a Bladder.

Yellows are *Saffrons*, *Yellow-Pinks*, and *Gambogia*, *Brown* is *Umber* burnt. And a *Gold Colour* is *Orpiment*.

Lastly, *Verdigrease*, with a very little *Sap-Green*, makes a right *Green Colour*.

Note, That all the Colours may be Ground (in a Glovers Grinding stone) with fair Water, severally, and dried, and kept in Paper for use, except

except Lamp black, Saffron, Smalt, Gumbogia, and Sap-Green.

Blews, are Ultramarine, Smalt, Indico, Blew-bicc Gum-Water, Tie clear Gum-Arabick in a Rag, and let it dissolve in a Gallipot of Water.

Size is made by boiling eight Ounces of Glew in two Gallons of Water very well to Whiten Rooms.

For Colouring of Maps, mix a Colour with Gum-Water in a shell, using a fine Pencil.

Or put a Colour into an Inkhorn to Cotton, you may write with it, and draw Flowers upon Wooden Cups, and after Varnish them, or make them represent China Earthen Dishes: if (you have one to look on) by tempering Flake White with the Gum-Water, on a Board, with your Knife's Point, first doing it over with a Pencil, very thin of the Colour three or four times, letting it dry every time.

Turn'd Chairs you may Brush over with Whiting and Size, and after with some other Colour, and after Varnish then with this Varnish: Boil 4 Ounces of Gum-sandruck in a Quart of Linseed-Oyl till the Gum is dissolved; or only heat the Oyl till thin. You may use it without Doors also; and if the Flame catcheth it, do but cover it with a Cloth, or the like, and the Flame goes out.

If you would Colour Wood of a bright brown Colour, take the hard knotty Soot out of a Chimney where Wood is burnt, and let it dissolve in old Urine: With this, brush the Wood while you are turning it for Chairs or Table Frames, or to do over Wainscot, Varnish afterwards.

If you Varnish Cloth for Tents, with the said Varnish, they will keep out wet.

Japan Varnish for Cups, &c is made by putting Gum-sandrick and Mastick, of each five Ounces, and Gum-Amine 1 Ounce, in Powder, into a Glass Bottle to a Pint and a half of the strongest Spirit of Wine, setting it in the hot Sun. and shaking it often, your Cups to be done over with it by the Fire divers times; if on a Chest of Drawers, you must at last polish it, by rubbing it with a wet Linnen Rag, and the Powder of Tripolo under it.

'If you have a choice Paper Map to past on a Board that it may be durable, dip a Napkin in Water and wring it, in which lay the Map to damp a little; then stir a Spoonful of fine Wheat Flower into three or four Spoonfuls of Water, heat it a little, and with a Feather, dipp'd in it wet the Board, and lay the Map smooth thereon, and on that a Sheet of Paper to smooth with your Hands. When you put a Map on a Frame of Wood (that has no back-board) damp it first, as above.

An old Linnen Sheet to make a Bed-Teaster on, nail it to the Wall very strait, and daub it over with the following: Boil half a Pound of Glew in a Quart of Water, till the Glew is dissolved, always stirring; then mix a handful of Wheat Flower with cold Water, and put it to the rest and boil it well, and brush the Sheet, when it is dry scrape it, (if need be) colour it, if you will, with the Size warm and some colouring.

To colour a Sign-Post: Grind Spanish Brown and Red Lead thinly with Linseed Oyl, and brush it over; when it's dry use White Lead twice (some basely use Whiting) and if it be not white enough, do it over again. Observe the same for Window Frames.

Cleanse

Cleanse your Pencils and Brushes (before they are too dry) with hot Water and Soap, and if they are hard and dry, boil them in the same; keep your Oyl Colour in Bladders tied close; and those in Pots, put them in Water till you need them.

Lay a Lantern Horn on a Printed Flower, and with Ink draw the Strokes on Horn; when it's dry breathe on the Lines, and press it hard on the Paper.

Priming Dial Boards, is the brushing them over with Linseed Oyl thinly ground with Spanish Brown, done over three or four times (drying between) thicker and thicker of the Colour.

Oyl for Dials: Boil Red Lead and Linseed Oyl and a little Litharge of Gold, a Pennyworth, till it is as thick as a Syrup almost; when it's cold and well settled, pour the clearest into a Bladder, or Glass, for use, and it's call'd the *Fat-Oyl*.

The Gold Size for Dials: Mix fine ground Yellow Oker with the Fat Oyl, so that when a figure is made with it, it may be of that thickness as to set it self smooth.

To mark out a Dial upon a Wall: Fix the Dial drawn upon Paper against the Wall with Nails, and you may mark out the Hour-lines to what length you please; the Hour-lines may be drawn with Vermillion, or Lamp-black, ground with Fat Oyl.

To draw Golden Letters, or Figures, for the Hours; first draw them with a Pencil dipped in the Golden Size, which, when so dry as they will just stick to your Finger, but none come off, then, with a smooth edged Penknife, shape the Leaf Gold to your mind, and take it up with a Piece of Cotton Cloth tied about the End of a Stick, and

and lay it on the Size, and press it down with the same Cotton; when it's dry brush off the loose Gold with a Feather, and the rough edges of the Letters smooth a Pencil dipp'd in red or black Colour.

Dr. Salmon's Turpentine Varnish for Prints or Pictures in Oyl

R Venice Turpentine 1 ℥, put it into an Earthen Pot over a Fire, when melted thin, add to it Oyl of Turpentine 2 ℥, as soon as they boil, take off the Pot, and when cold put it into a Glass Bottle, and keep it close stop'd for use. With this you may Varnish your Prints on Glass, or other things, to render them Transparent, and this is what the Shops sell for fine Varnish. if it should prove too thick, you may remedy it by an Addition of Oyl of Turpentine.

A Paste to strike over Paper-Maps, before you Varnish them, Heat white Starch in Skim-Milk, and do it over with a Feather.

Note, That whereas the Spaces between the Hour-Lines being white, but if you desire to have them blow, the Hour-Lines being very dry, and the Letters, do the Spaces all over with white Lead, thinly temper'd with the Fat Oyl, then sift all over the Dial the fine Powder of Smalt, and dab it down with Cotton; when it's dry blow off the loose Smalt with a Pair of Bellows.

*An Addition to the Painter's Work, especially concerning
Sun Dials, and Dying-Stuffs, &c.*

LET the *Dial Board*, or *Boards*, be made of the firmest and clearest Oak; if you cannot get one of two Foot, or more square, and three or four Inches thick, take 2 Boards, let them be Planed on both sides, and laid in the Sun-shine, or near the Fire, two or three Weeks together, and Plane them again, and shoot them with good Joints and fasten them together, in the Glewing, with Wooden pegs, as Coopers do the Bottoms of their Tubs; being thus glewed and dried, Plane them again, and if you do not nail to narrow Plats of Iron on the back of the *Dial*, fit the Edges into a Moulding round it like a Pannel of Wainscot, if your *Dial-board* is not three or four Inches in Thickness, drive in a Staple on the back of it.

And if you cannot get well season'd Oak, but new cut from the Roof, or green Wood, to turn Wooden Cups, and the like, before you use it, put it in Boiling Water, to boil about one Hour.

Wood for Dials I take to be better than Stone, which is sooner apt to cast the Colouring than Wood.

And before you Colour your Dial-Board, fix your Iron-still of 38 Degrees, which may indifferently serve for all *England*, having marked your Hour-Lines with Ink, and knock'd in a Nail at the End of each Hour-Line, that the Head of each Nail may guide you to the Center when it's coloured.

And because Golden-Letters for the Hours decays in a few Years, you may make your Letters, or
Figures,

Figures, white, dotted with red, in a black Margin. I have Dials now against my House, one of them has been up about twenty seven Years, and does well: And when your Dial is finished and dry, dip a Feather in your Oyl, and anoint it thinly, and I have found it by Experience, that the finer you grind the Colouring with the Oyl, the sooner the Colouring decays.

To which I add the Experiments of an Old Painter. To take out a Colour out of your Work, (he says) take a little common Soap and lay on it, and on that a Rag, and it will eat the Colouring so that you may easily take it out.

In all South Erect Dials, and Post Dials, the Hour-lines between 11 and 12 are equal to 12 and 1, and so of the other Lines distant from 12, but encreasing every one wider than the other to 6, where the greatest Distance is, viz. between 5 and 6, and 7 and 6.

Now what he saith as to Colours: For,

A Blue. Temper a little Indico and Smalt with Oyl.

A Light Blue. Mix Smalt and White-Lead together.

A Red Colour. Lamp Black and White-Lead, and Marble with it.

A Fox Colour. Umber burnt.

To make a Board red. Do it over twice with Indian Red, and when dry'd, do it in the Lights thereof with Vermillion.

Gold Colour. Use Orpiment with the Oyl, tempered with a Knife on a Earthen Plate. No Colour

lour will crack, if you put some Oyl of Walnuts to it.

The Red-Colour above will serve to Marble Wooden Chimney-Pieces, and when dry to Varnish it with Gum-Sandrick Varnish,

Yellow-Colour. Beat Saffron to Powder, tie it in a Rag, and lay it in White Wine Vinegar.

Glaze of Eggs. If the Whites are beaten well and set in a pot one Night, with a Feather dipt therein, you may grind any Colour with it, and paint a Printed Picture within Doors; but Oyl'd Pictures you may varnish over the Fire with Linseed-Oyl,

To make Size. The Shreads of Glovers Leather, 1 lb, boillit in 2 Quarts of Water to a thin Jelly strain it,

Gum-Arabick Water. Dissolve it in Water.

Allum-Water. Boil 8 Ounces of Allum and a Quart of Water.

Yellow-Colour. The yellow Cives in white Lillies with Gum Water.

A Red Colour. Vermillion in an inkhorn with Gum-Water.

Blots out of Writings Wet it a little with Gum-Water, and scratch it a little with a Penknife, and rub it with Gum Sandrick, which Gum makes Paper bear Ink well.

Golden Letters to write, Grind Vermillion and Gum-Armoniack with Glaze of Eggs.

A Yellow to Colour Silk, Thread, Linnen, white Leather Parchment, Paper, &c. Dissolve Gambogia in Allum-Water.

To Blew Skins. Boil Elder-Berries, and smear the Skins therein, and wring them, then boil the

Berries

Berries in *Allum-Water*, and wet the Skins twice therein, and dry them: Or *Blew Logwood* with *Allum-Water*.

To Die Linnen Cloth, Thread, &c. like Red. The Powder of *Brazil* and *Vermillion*, of each 1 Ounce, boil'd in *Allum Water*.

To Die Blew. Take *Wood* 1 $\frac{1}{2}$ lb, mix it with 4 Points of Boiling Water, and infuse Whites in it 24 Hours.

To Die Green. First Die it Yellow, (which follows) then take 60 Pints of Water wherein Wheat Bran has been soaked 24 Hours, then strain it, and let 3 lb of *Adum* be dissolved in it, and boil the Stuff in it for 2 Hours.

To Die Yellow. Take *Wood* 2 lb to the said Water, and boil it till the Colour is good: But to make the same Stuff Green, put it into the said Blew Die.

To Die a clear Red. Take 60 Pints of Bran Water made as above, strain'd clear, in which dissolve *Allum* 2 lb, and *Tartar* 1 lb, in which boil the Stuff for 2 Hours, then take it out, and boil it in as much fresh Bran-Water, viz. 30 Quarts, to which add *Madder* 3 lb, perfect the Colour to a moderate Heat without Boiling.

To Die a Sad Colour. Add *Logwood* to the Blew above.

To Cement broken Glasses. Glare of Eggs ground with Quick Lime; Or burnt Flints and Eggs Shells of each alike; and with the Whites of Eggs and *Gum-Sandruck* make Glew.

For broken Pots and Dishes. Grind on a Glover's Grinding-Stone with new Lime, Crumbs of old Cheese and Whites of Eggs, or the Skin of Oyle Colours: But for those Dishes that only are to stand

on Shelves; Wheat Flower ground with the Whites of Eggs, done together speedily.

Grease upon Woollen, Wet the Stain with wet Starch, and let it dry, then rub it, and daub it over again and dry it, do so till the Grease is out. But if it be *Pitch on Woollen,* Dip it in cold Water, and rub it out by often Dipping

Surveying, or Measuring of Land; But first take a Description of the Quadrant.

First, The Outward Limb, or Arch, is divided into 90 Part, called Degrees, and figured 10, 20, 30, &c to 90

Secondly Above the Figures 20 30, 40, 50, 60, &c is Capital Letters for the Names of the 12 Months, as J for January F. for February, &c. each Month is supposed to be divided into Parts for the Days.

Thirdly Above the Letters for Months, are the Hour-Lines to know the Hour of the Day.

Fourthly, Upon the Line G. D. is to be fixed two pieces of thin Brass, with a Hole thro' each Piece, for the Sun to shine from one to the other, but some drive in two little Nails without Heads, that when the Quadrant is held in the Sun. the shadow of the Sun at G. may cast the Shadow to D.

Fifthly, In the Center, or Point of the Quadrant, at A, let a Thread, or Silk be fasten'd thro' a Hole, and a Plumbet of Lead at the other End of the Thread, having first put upon the Thread a Pin's Head, or small Bead.

To know the Hours of the Day.

First, Lay the Thread, or Silk, just over the Day of the Month very strait, and so hold it, untill you slip the Pins Head to rest over one of the 12 a Clock Lines; this done let the Sun shine from the Sight or Stump at G. to the other at D. (the Plummets hanging at Liberty) the Pin's Head will rest against and Hour-Line, which, with a little Practice, you'll find easy.

To find the height of a Tree or Steeple.

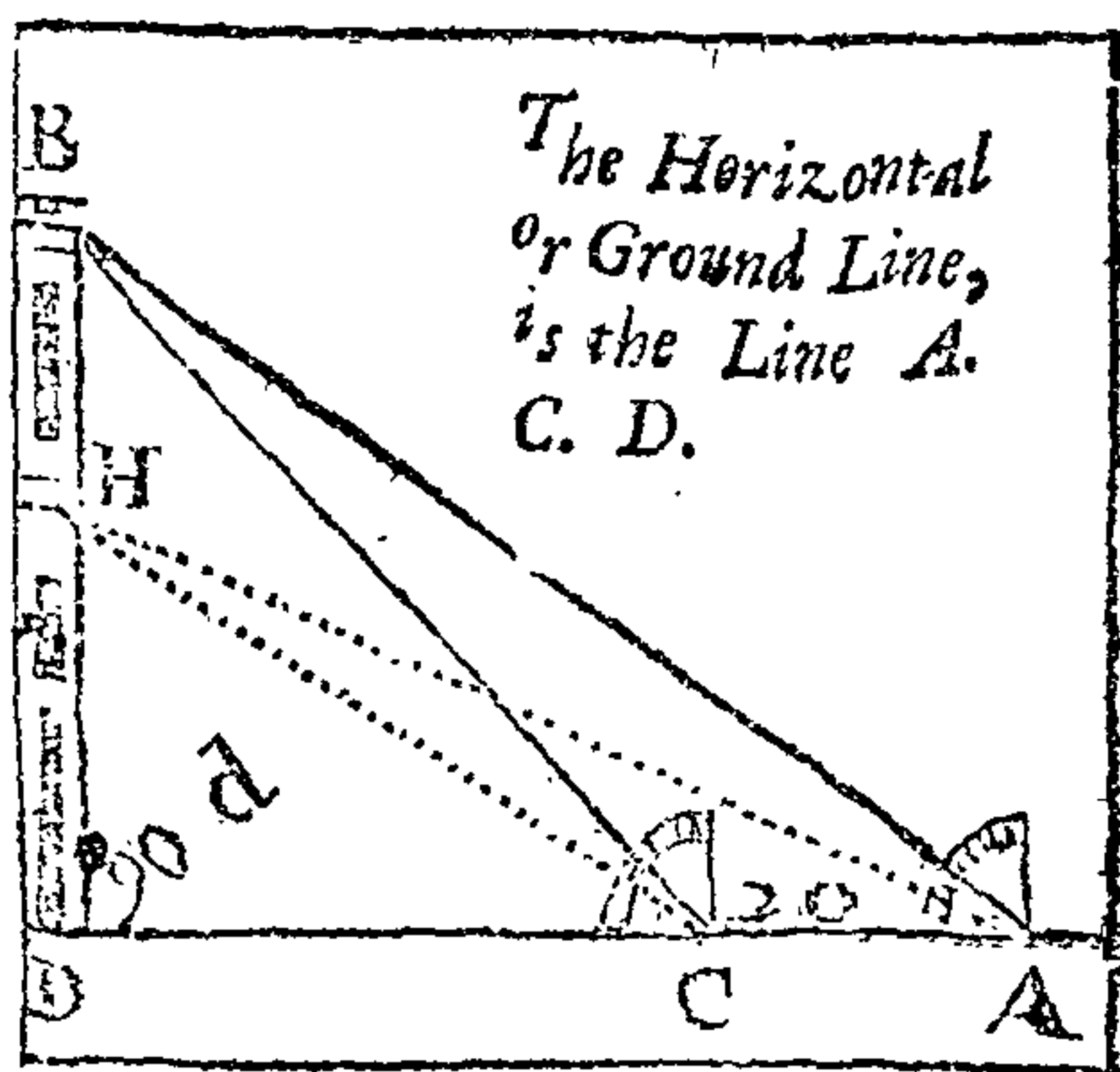
Hold up the Quadrant, and spy thro' the Sights, or along the Edge by D. G. the Top of the Tree, stepping backwards or forwards, untill the Plummets hangs at Liberty just again 45 Degrees, (that is the very middle of the Degrees of the Quadrant) then is the height of the Tree equal to the Distance of the Root of the Tree to your standing Place, to which add somewhat more, for the Height you hold the Quadrant above the Ground, which Distance measure into Feet or Yards.

But if the Plummets cuts one quarter of the Quadrant (or 22 Degrees and half) in taking of Sight, then twice the Distance from your standing to the Bottom of the Tree, or Steeple, is the Height, to which add the Height of your Quadrant.

Lastly, If the Plummets cuts three quarters of the Quadrant (or 72 Degrees and half) then half the Distance is the Height; &c. Of these Things more hereafter.

How to measure Distances, Heights, and
Depths, by the Quadrant.

First, To find the Height of the Tower B. D.
you must make two severall Angles (as before)
at two severall Stations: If you are at the Point, or
Station A. there place your Quadrant, as the Fi-
gure following sheweth.



And from the Center thereof spy the Top of
the Tower at B. (laying the Rule from the Center
to find how many Degrees of the Quadrant are cut)
then draw the black-line A. B. so shall the lines
A. B. D. make a Triangle, The Point D. being a
right Angle, 90 Degrees, as the Quadrant is.

Then change your Standing from A. towards D.
suppose 20 Yards (or other Distance backw rd or
forward)

forward as you please) taking that Distance from a Scale of equal Parts, and place your Quadrant which in the Figure above, is at the Point C, and from thence take your Sight to the Top of the Tower, as you did at A. and draw the Line E. C. where is also a black Line, so you have the Triangle A. B. C. then the base A. C. 20 Yards, from whence you take a Scale, will be your Rule to measure the rest of the Lines by.

Then having found the Degrees of the Quadrant at the Point A. and C. add those Degrees together, (as before is taught) and what they want of 180 is to be made up at the Angle B. the Top of the Tower, but if you understand the Figure before this last, I need not enlarge upon this.

Then, Suppose a Perpendicular Line let fall from B. (the Top of the Tower) which is to be measured by the Scale you measured the Distance between A. and C. gives the height of the Tower.

Lastly, If it were required to know the Height of the Window, at H. work as before, and you may subtract the Height above, from the whole Height of the Tower, which is easily done.

How to take a long Distance that you cannot measure
to, by Reason of Water, &c.

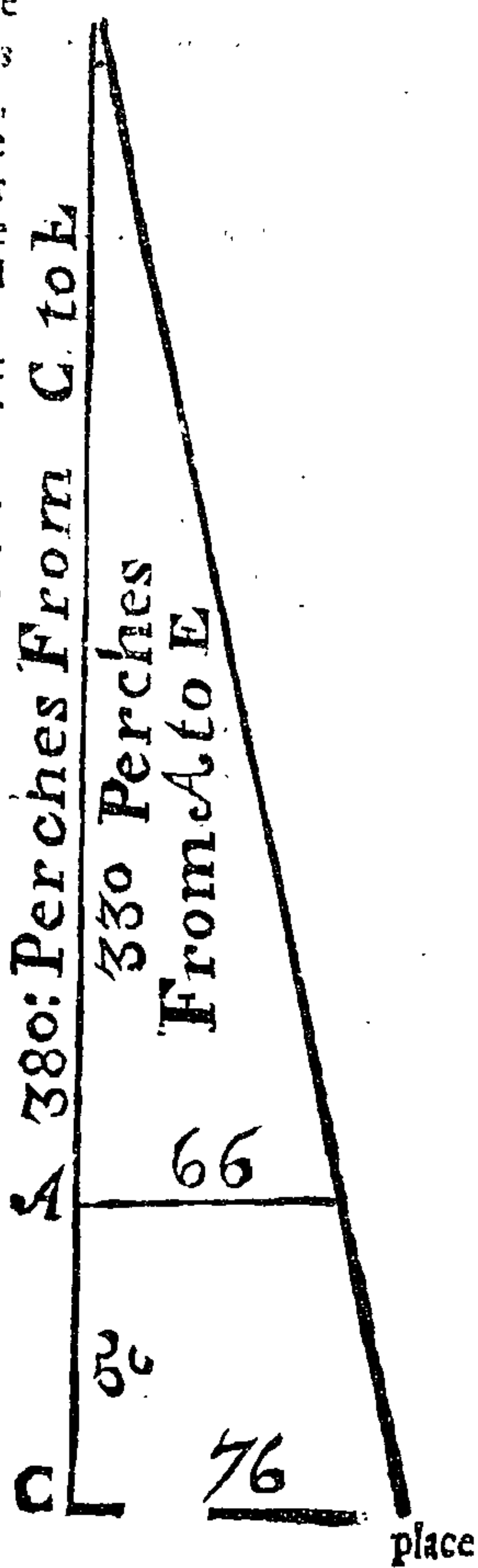
First, Observe the
Figure, and let C. be
your standing Place,
and let E. be the
Castle or Mark afar
off, whose Distance
from C. you would
know.

Then walk right
forwards from your
standing at C. to-
wards E. any Num-
ber of Yards or Per-
ches; as suppose 50
to A. where set a
Staff

Then move in a
Perpendicular Line
to C. E. from A. to
B. making a right
Angle at A. any Di-
stance.

Suppose 66 and
set up another Staff
at B.

Then come back
again to C. and re-
move in a Perpendi-
cular Line to C. E.
till you see the Mark
set up at B. and the
Point E. in the right
line, and set up ano-
ther Staff at that



place

place at D. getting the exact Distance thereof from C. which suppose 76; then substract A. B. 66 from the Measured distance C. D. 76, and not to the Remainder, which is 10, then say by the Rule of Three.

As 10 is to 50, so 66 is to 330.]

50

3300

11)3300 (Perches from A. to E. Answer,

33

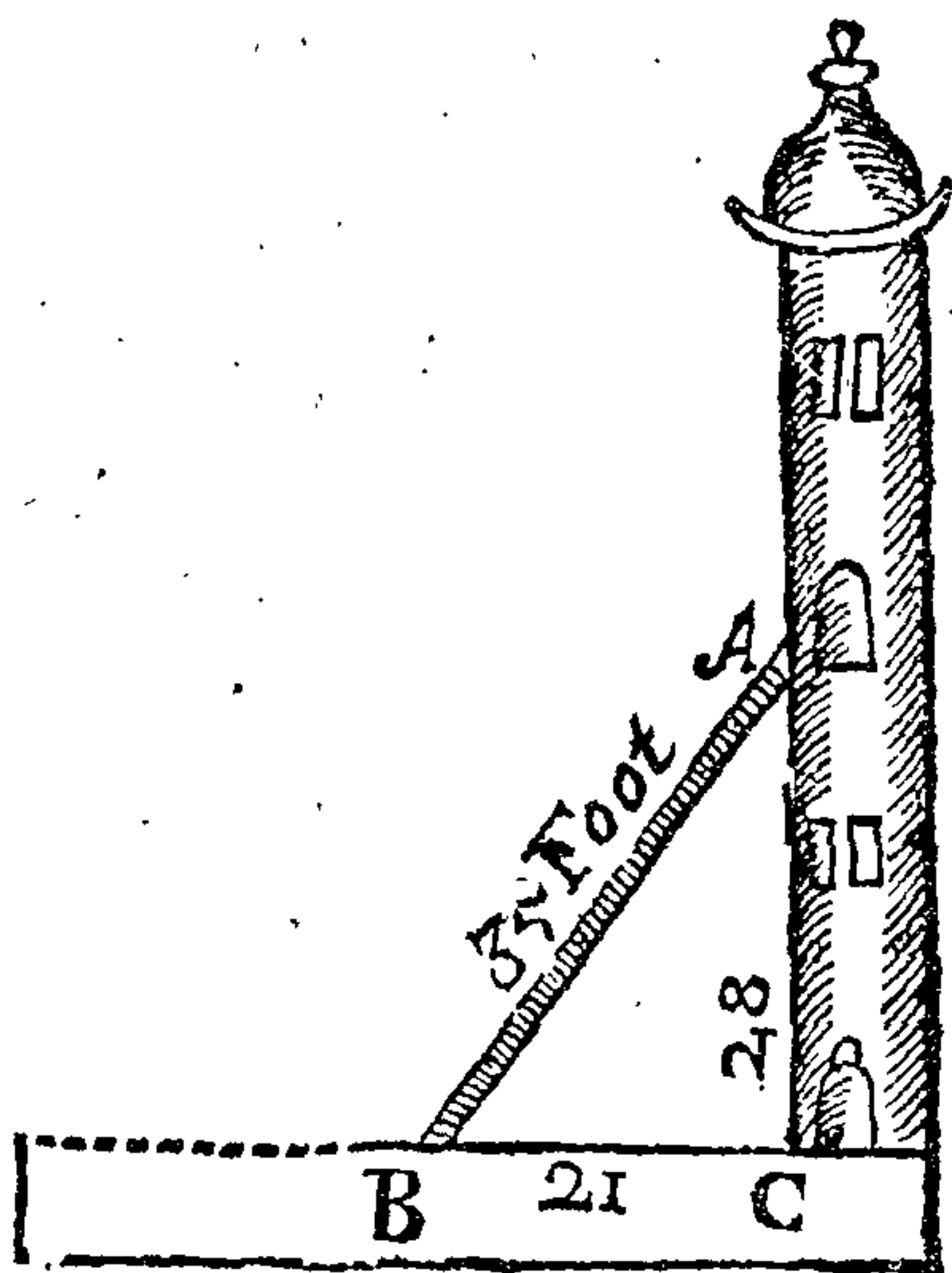
000

Or, as 10 is to 50, so 76 is to 3800.

Further

Further of plain Triangles.

If two Ships set Sail at one Time, the one directly East, 74 Leagues, (as from C. towards A, by the Figure of the following Tower;) and the other sails directly North, 62 Leagues, how many Leagues are they asunder.



74 Multiply by 74, is	5476
62 Multiplied by 62, is	3844

Added, are	9320

Extend the Compasses on Gunter's Line from
P

to 9320, the Mid way is 97, the Root, or Leagues Distance, the Answer.

To find the Square Root of any Number.

The Square Root is found by Extending the Compasses on Gunter's Line from 1 upon the Line to that Number; the Mid-way of that Extent is the Root, or Number desired, for 12 is the Root of 144, because 12 times 12 is 144.

As suppose a Captain hath 5476 Soldiers. how to place them square, viz, How many to set in the Front and Flank,

Extend the Compasses from 1 upon the Line to 5476, downwards, the Mid-way of that Extent is 74 Soldiers both for Front and Flank.

 The Square Root of 144 being 12, then the 12 is the Cubick-Root of 1728.

Thus proved.

Extend from 1728 upon the Line to 1, two thirds of that Extent will reach from 1728 downwards to 12 the Cubick Root.

Or Extend from 1 upwards, that Extent thrice the same way from 12 will reach to 1728, the cube Number.

Now for the Triangle (as in) A.B.C.

Suppose the line A. B. the Ladder, be 36 Foot long; B. C. the Distance from the Foot of the Ladder to the bottom of the Tower, at the Point C. be 12 Foot,

The

The Question is, *How many Feet is from the bottom of the Tower at C to the top of the Ladder at A?* The Answer will be 28, Feet.

A. B. the Hypothenufal 35 } foot
multiplied in its self 35 }

175
105

Product 1225

Note, That the line B. C. is called the Base, the line A. C. the Perpendicular, and the line A. B. or Ladder, is called the Hypothenufal.

Then B. C. the Base 21 } foot
multiplied in it self. 21 }

21
42

take 441 Product
from 1225

rests 784

Lastly, Extend from 1 to 784 upwards, the mid-way of that Extent is 28, the Root, or length of the line A. C. the Answer.

Secondly, Knowing the length of the Base 21, and the Perpendicular 28 foot; of what length must the Ladder, or Hypothenufal-line be, a Moat being between B. C.

21 multiplied by 21 makes 441
28 multiplied by 28 makes 784

Added; are 1225
P 2 Extend

Extend from 1 to 1225, half that Extent is 35 the Root or Ladder, Answer.

Lastly, Knowing the Hypothenuſal line, or Ladder, to be 35 foot, and the Perpendicular A. C. 28 foot, how many foot is the Baſe, or diſtance from the foot of the Ladder at B. to the bottom of the Tower at C.

35 by 35 makes 1225 from

28 by 28 makes 784 take

Reſts 441

Extend the Compaſſes on Gunter's Line from 1 to 441, the Midway of that Extent is 21 foot, the Diſtance, or Answer.

How to know whether the Top of the Poſt you are to place an Horizontal Dial on be level.

Lay a Ruler on the Top of the Poſt, and apply the Edge of the Quadrant A. G. D. to the under ſide of the Ruler, ſo that the Plumbet may hang over the line A. B. of the Quadrant; and if it falls directly on the level line A. B. making no Angle, it is a true level, or Horizontal Plane.

By the ſame you may know an upright Wall to place a Dial thereon, by holding the line A. B. againſt the Wall.

To know whether Water will come from a Spring, or Pond to your Dwelling, by a Leaden Pipe laid in the Earth.

Set a Pole upright in the Pond, and mark how many

many feet and Inches of it above Water; then place another Pole in the place, of equal length with the other, where you would have the Water to come, then place the Edge of the Quadrant A B. the Center A. on the Top of the Pole, the Plummer hangigg at liberty, and spy thro' the Sights and Top of the Pole that is in the Water, and if the Thred cutteth any Degrees of the Quadrant, the Water may be convey'd, &c.

Of Measuring of Land.

12 Inches is a foot, 16 foot and half a Pole; 40 Poles makes a Furlong; 8 Furlongs a Mile in length.

160 Square Poles is an Acre of Land. In a square Acre are Roods 4, square Chains 10, square Poles or Perches 160 (as above) square Yards 4340, square feet 43560, square Links 100000 square Inches 6272642. In a Mile in length is Furlongs 8, Chains 80, Perches 320, Paces 1056, Yards 1760, Feet 5280, Links 8020, Inches 63260, Barley Corns 190080.

In a square Mile is Acres 640, Chains 6400, Perches 102400, square Links 640000000, square Inches 4014189600.

An *Italian* Mile is 1000 Paces, (of 5 feet to the Pace) less than an *English* Mile by 280 Feet, so that a League at Sea wants about one Furlong of three *English* Miles.

A Table shewing how to lay out an Acre of Ground by a Pole of Ash, in a Pasture.

breadth Poles	Length of the Acre.		breadth Pole.	Length of the Acre.	
	Poles	Feet.		Poles	Feet.
1	160	0	28	5	$11\frac{1}{2}$
2	80	0	29	5	$8\frac{1}{2}$
3	53	$5\frac{1}{2}$	30	5	$5\frac{1}{2}$
4	40	6	31	5	$3\frac{1}{2}$
5	32	0	32	5	0
6	26	11	33	4	14
7	22	14	34	4	$11\frac{1}{2}$
8	20	0	35	4	$9\frac{1}{2}$
9	17	13	36	4	$7\frac{1}{4}$
10	16	0	37	4	$5\frac{1}{4}$
11	14	9	38	4	$3\frac{1}{2}$
12	13	$5\frac{1}{2}$	39	4	2
13	12	5	40	4	0
14	11	7	41	3	15
15	10	11	42	3	$13\frac{1}{4}$
16	10	0	43	3	$11\frac{1}{2}$
17	9	7	44	3	$10\frac{3}{4}$
18	8	$14\frac{1}{2}$	45	3	9
19	8	7	46	3	8
20	8	0	47	3	7
21	7	10	48	3	6
22	7	$4\frac{1}{2}$	49	3	4
23	6	$15\frac{1}{2}$	50	3	3
24	6	$11\frac{1}{2}$	51	3	3
25	6	6	52	3	1
26	6	$2\frac{1}{2}$	53	3	$1\frac{1}{2}$
27	5	$15\frac{1}{4}$	54	2	16

Poles

breadth Poles	Length of the Acre.		breadth Poles	Length of the Acre,	
	Poles.	Feet.		Poles.	Feet.
55	2	15	68	2	6
56	2	4	69	2	$5\frac{1}{2}$
57	2	13	70	2	5
58	2	14	71	2	$4\frac{1}{4}$
59	2	12	72	2	4
60	2	11	73	2	$3\frac{1}{2}$
61	2	10	74	2	3
62	2	$9\frac{1}{2}$	75	2	$2\frac{1}{2}$
63	2	9	76	2	2
64	2	$8\frac{1}{4}$	77	2	$1\frac{1}{2}$
65	2	8	78	2	1
66	2	7	79	2	$0\frac{1}{4}$
67	2	$6\frac{1}{2}$	80	2	0

The Use of the foregoing Table,

Suppose the length, or side of a Close, or Furlong, be 43 Poles: how much in breadth will make an Acre?

Look 43 in the first Column, and right against it is 3 Poles, 11 Feet, and about 10 Inches in breadth to make an Acre; twice that is two Acres &c.

Note, That if the Table should be mis-printed, I will give you one Example whereby you may prove all, or any part of this Table.

The side being 43 Poles (according to the Example above, I divide 160, the Poles in one Acre, by 43, and the Quotient gives 3 Poles, 31 Parts.

43)160

129

31

(3 Poles

Secondly,

Secondly, I multiply the 31 Parts by $16\frac{1}{2}$, (the Feet in 1 Product half 31, that is $15\frac{1}{2}$, makes $511\frac{1}{2}$).

$$\begin{array}{r} 31 \\ 16\frac{1}{2} \\ \hline 186 \\ 31 \\ 15\frac{1}{2} \text{ half of } 31 \\ \hline 511\frac{1}{2} \text{ Product.} \end{array}$$

Thirdly, I divide the $511\frac{1}{2}$ by 43 also, and the Quotient gives 11 Feet, and $38\frac{1}{2}$ Remainder.

$$\begin{array}{r} 43) 511\frac{1}{2} \\ 43 \\ \hline 81 \\ 43 \text{ (11 F.)} \\ \hline 38 \end{array}$$

Fourthly, I multiply the Remainder $38\frac{1}{2}$ by 12, (the Inches in a Foot in length) adding to the Product the half of the 12 the Multiplier, and the Product is 462 Inches.

$$\begin{array}{r} 38 \\ 12 \\ \hline 76 \\ 386 \\ \hline 462 \text{ Inches.} \end{array}$$

Lastly, I divide the 462 by 43 also, and the Quotient gives 10 Inches, and 32 remaining being gathered into one sum, the breadth

$$\begin{array}{r} 43) 462 \\ 43 \\ \hline 32 \end{array}$$

P. P. In.
Is 3 ~~—————~~ 11 ~~—————~~ 10 $\frac{32}{43}$

A Table to lay out an Acre of Land by Gunter's Chain.

Ch.	Li.	Ch.	Li.
0	25	4	00
0	35	28	57 $\frac{1}{2}$
0	45	22	22 $\frac{1}{9}$
0	55	18	18 $\frac{1}{11}$
0	65	15	38 $\frac{6}{12}$
0	75	13	33 $\frac{1}{13}$
0	85	11	64 $\frac{2}{17}$
0	95	10	90 $\frac{1}{19}$
1	00	11	00
1	10	9	09 $\frac{1}{10}$
1	20	8	33 $\frac{1}{12}$
1	30	7	69 $\frac{3}{17}$
1	40	7	14 $\frac{4}{14}$
1	50	6	66 $\frac{1}{15}$
1	60	6	77 $\frac{1}{16}$
1	70	5	88 $\frac{4}{17}$
1	80	5	55 $\frac{1}{18}$
1	90	5	26 $\frac{6}{19}$
2	00	5	00
2	10	4	76 $\frac{4}{21}$
2	20	4	54 $\frac{16}{22}$
2	30	4	34 $\frac{8}{23}$
2	40	4	16 $\frac{3}{24}$
2	50	4	00
2	60	3	84 $\frac{8}{25}$
2	70	3	70 $\frac{3}{26}$
2	80	3	53 $\frac{4}{27}$
2	90	3	44 $\frac{1}{28}$
3	00	3	77 $\frac{1}{29}$
3	10	3	22 $\frac{9}{30}$
3	20	3	12 $\frac{1}{31}$
3	30	3	03 $\frac{1}{32}$
3	40	2	94 $\frac{3}{33}$

Now to prove whether or no this Table be Mis-printed.

Suppose the length of a piece of Ground at the side be 3 Chains, 20 Links, how much in breadth thereof will make an Acre?

Look for 3 C. 20 L. in the first Column, and against it in the second is 3 C. 12 L. for the breadth.

Or, Always divide the length by 10000, which in this Example is 3 C. 20 L. done as follows without the Table.

$$\begin{array}{r}
 (1 \\
 12 \\
 148 \quad (6 \text{ (C.L.} \\
 10000 \quad (0 \quad 3 \quad 12 \text{ breadth} \\
 3222 \quad \text{of the Acre.} \\
 33
 \end{array}$$

The Breadth is 3 Chains 12 Links, and the Fraction $\frac{1}{3}\frac{6}{3}\frac{0}{0}$ is half a Link, because 160 the Remainder is half 320 the Divisor.

How to measure Land by Gunter's Chain.

Note. That this Chain is 4 Poles in length, or 22 Yards, 66 Foot, 792 Inches, it is divided into 100 Links, at every 10 Links is a Brass Ring for the more ready counting it in Measuring, so that it's no matter which end goes foremost, and he that draws it should carry in his Hand 10 small Sticks to stick in the Earth at every Chain's length, and he that follows the Chain, to gather up the Sticks.

Example.

C. L.
length 9 50
breadth 6 25

Suppose the length of a piece of Ground be 9 Chains 50 Links; the breadth 6 Chains, 25 Links; how Acres, Rods, and Poles?

Multiply the length by the breadth as whole numbers, and from the Product 593750, I cut off five Figures next the right Hand, and the Remainder on the left Hand are Acres as you may see in the Margin.

4750
1900
5700

Acres. 5193750
4

Rods. 375000
40

Poles. 1500000

Secondly, The remaining Figures 93750, so cut off from the 5 Acres, I multiply by 4 the Rods in 1 Acre, from which Product I also cut off 5 Figures, or Places, and the Remainder is 3 Rods.

Lastly,

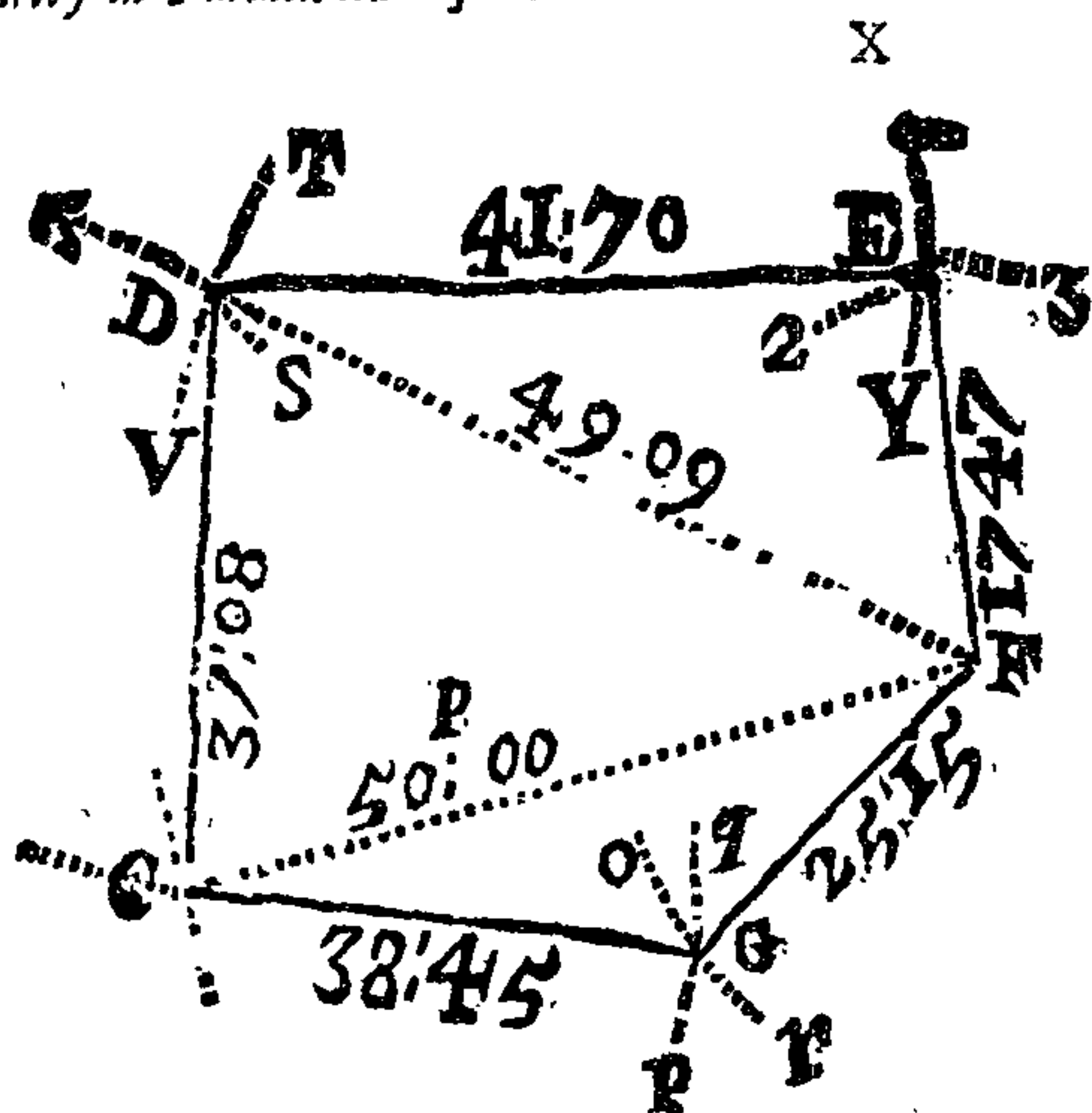
Lastly, I multiply 75000, so cut off, by 40. the Poles in a Rod, and cut off 5 Places as the other, and those to the left Hand is 30 Poles. See the Rule for measure in *Reduction*, and the fifth Example in *Multiplication*, and the fifth in *Division*.

Note, That if any length or breadth, taken by the Chain, the links are under 10, add a Cypher to the left Hand thereof, before you begin to Multiply: And whereas there were nothing but Cyphers cut off from the Poles before, but if they had been Figures as 34762, they would want of a Pole so much as that Sun wants of 100000, so that the Answer is 5 A. 3 R. 30 P.

To Reduce Chains and Links into Feet:

Multiply the number of Chains and Links together, as whole numbers, by 66, the feet in a Chain of 4 Poles in length, and from the Product cut off the two last Figures towards the right Hand, and the other Figures are feet; and the two Figures so cut off to the right Hand are the hundred parts of a foot, but if the number of links before you begin to Multiply, be under 10, then (as above) add a Cypher to it on the left Hand, as suppose it were 9 c. 05 l. observe the same in all lengths.

To take the Plat of a Close, or Field on Paper, by the Chain or Perch, (but the Perch must first be divided into 100 parts) as I mentioned before.



Let the Figure C. D. E. F. G. represent a Close, or Field, to be p'atted on Paper.

First, I measure with the Chain, or Pole divided into 100 parts (from C. to F.) the dotted line within the Close, which contains 50 Poles.

Then I measure the side of C. G. 38 Poles, 45 parts, and the side E. G. 25 Poles, 15 parts, which done,

I open the Compasses upon the Scale of equal parts, to 5 parts of the great Divisions, to signifie 50 Poles, and that Extent I set on Paper, placing F. at one point, and C. at the other, and draw the dotted line, if you will.

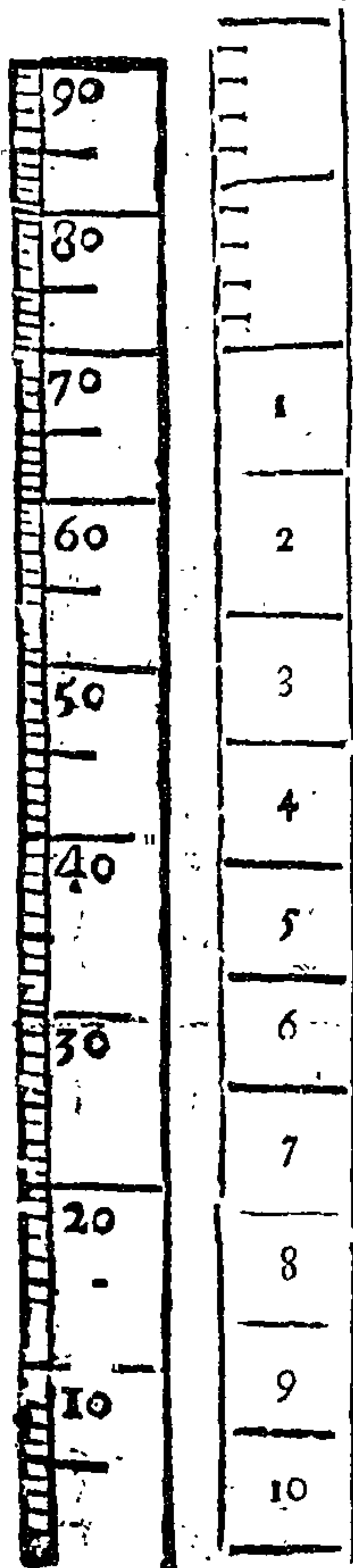
Next,

Next I take from the same Scale or line of equal Parts, 50 Poles, 45 parts, setting one foot at the beginning of the Scale, and extend the other to 3 of the great Divisions, and 8 small parts, and almost half a part further with that Extent, set one foot in C. and with the other I draw the Arch-pole q.

Then again take the distance 25 Poles, 15 parts from the same Scale, and with that distance set one foot in F. and draw the Arch O. R cutting the former Arch in point of G. then draw the line C. G. and F. G. So is the Triangle C. F. G. described on Paper.

To lay down upon Paper an Angle containing any number of Degrees and Minutes, by the line of Chords.

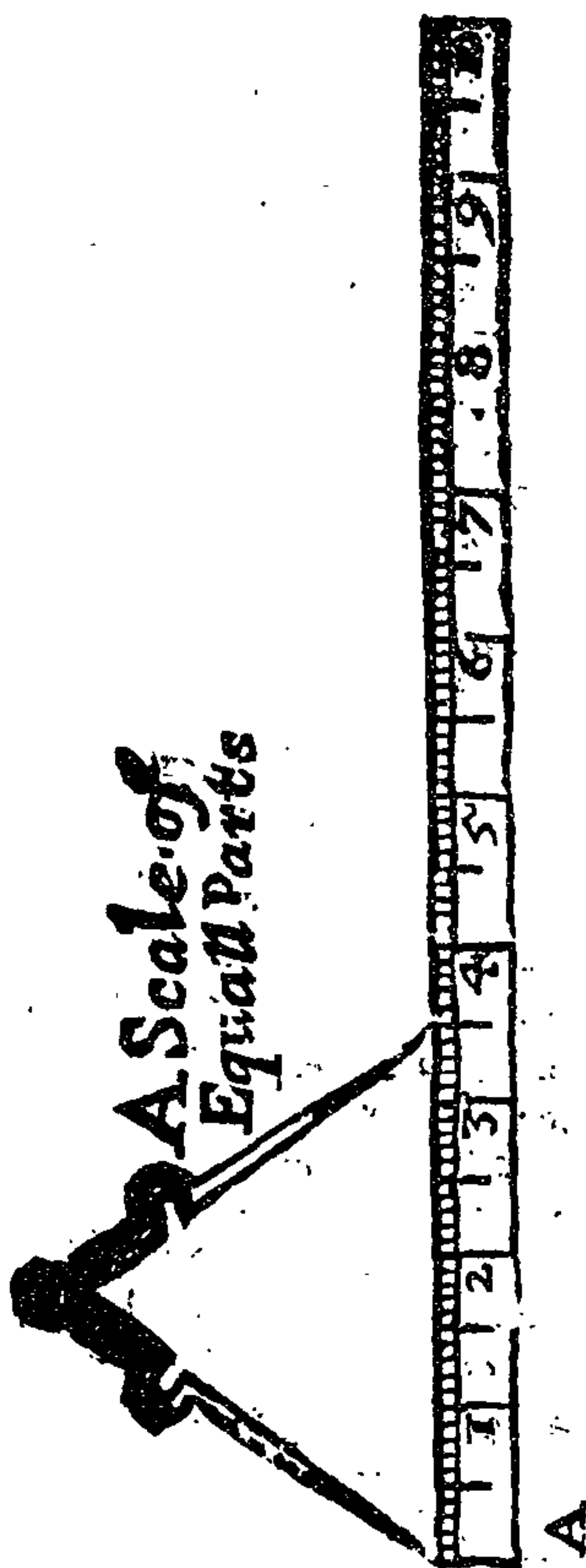
Line of Chords.



The line of equal parts for platting of Ground.

The line of Equal parts is of great Use in taking the Plat of a Close in Paper.

The line of Chords is of Use for to take the height of a Stile in making of Sun-Dials, &c. somewhat thereof in this Book.



BY this Rule you may finish your Plat, observing that it must all be divided into Triangle by Example 12, remembering that for every Chain, or Pole, you must take off the Scale 1 of the great Divisions, as from 4 to 5 is one Division, and for every 10 Links, or one 10th part of your Pole, take 1 of the small divisions or with the Compass you may make a line of equal parts, according to the bigness you desire your Plat; or having drawn a Plat may by this Rule make it bigger or lesser.

But for the exact raising a Perpendicular Line, of

of a Triangle, 'tis needful you have a Cross Staff, viz. a Walking-stick, with a round Ball fix'd on the Head of it, flat on the Top, upon which cut a Notch like a Diameter of a Circle, and cross that Notch with another at right Angles.

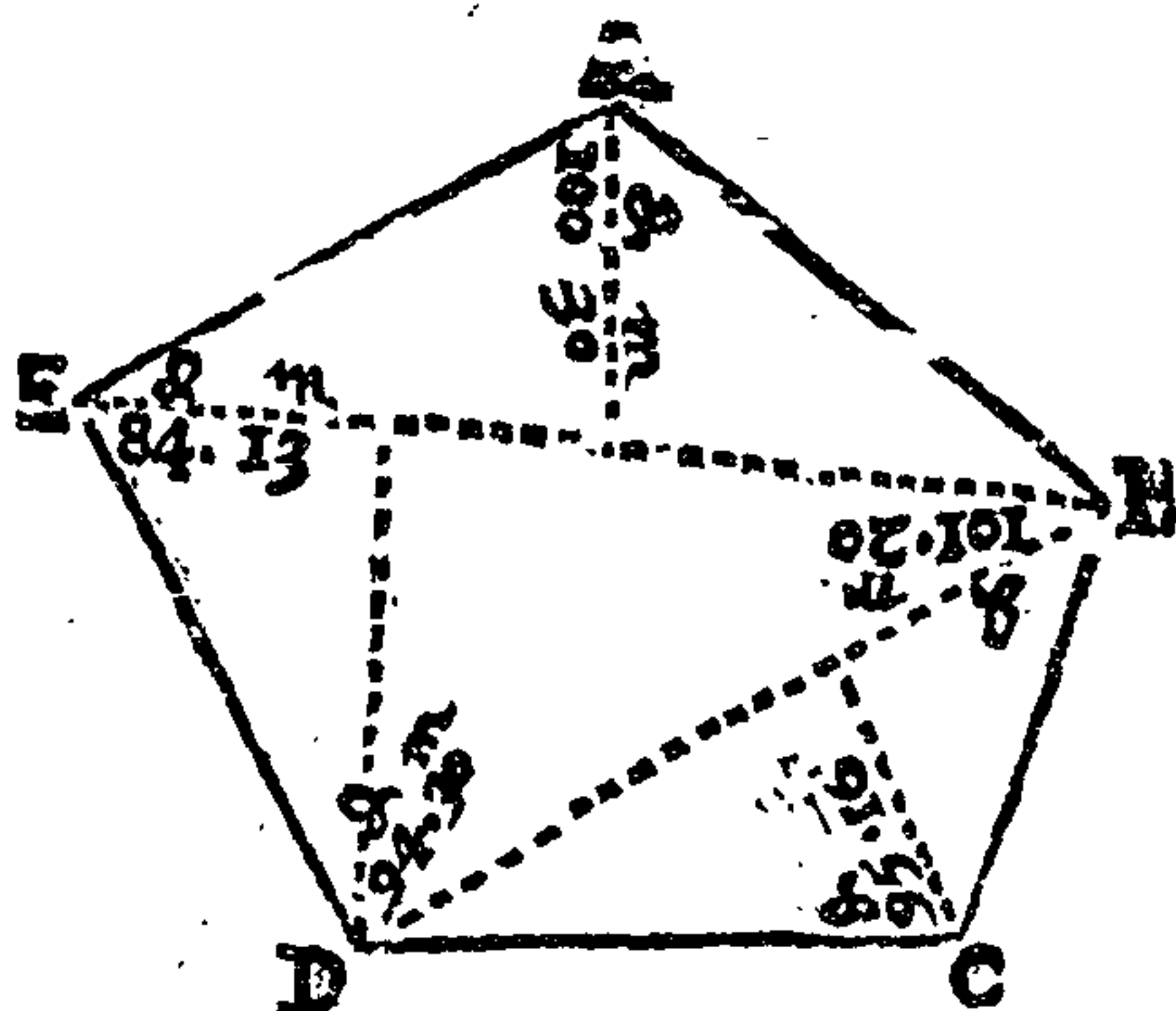
This you may stick in the Ground when you are about measuring the Base of the Triangle, about the middle thereof, just against the opposite Corner of the said Triangle, or Close of Ground that one of the Notches may be a Parallel to the place you are measuring the Base, but if you find that the Staff, or the other Notch, does not point exactly to the opposite Corner, remove as you see needful; this is so easy I need say no more of it, for when you use it, you'll soon see the benefit of it.

How to Measure a Wood by the help of a Quadrant, and Measuring only round the same.

First set up Marks at each Corner of the Wood; that three Marks may be seen at once; then at one of these Corners place a Stool, and lay the Quadrant flat thereon, and take sight to two of the Marks on each side, and Mark upon Paper the Degrees of the Angle, and Measure to the said two Marks in sight, and lay them on the same Paper by the line of Equal parts in this Book; do so at all the other Corners, till thou hast closed up the Plat, or Wood, the which you may with ease Measure into Acres by the same line of Equal parts upon your Paper.

Example.

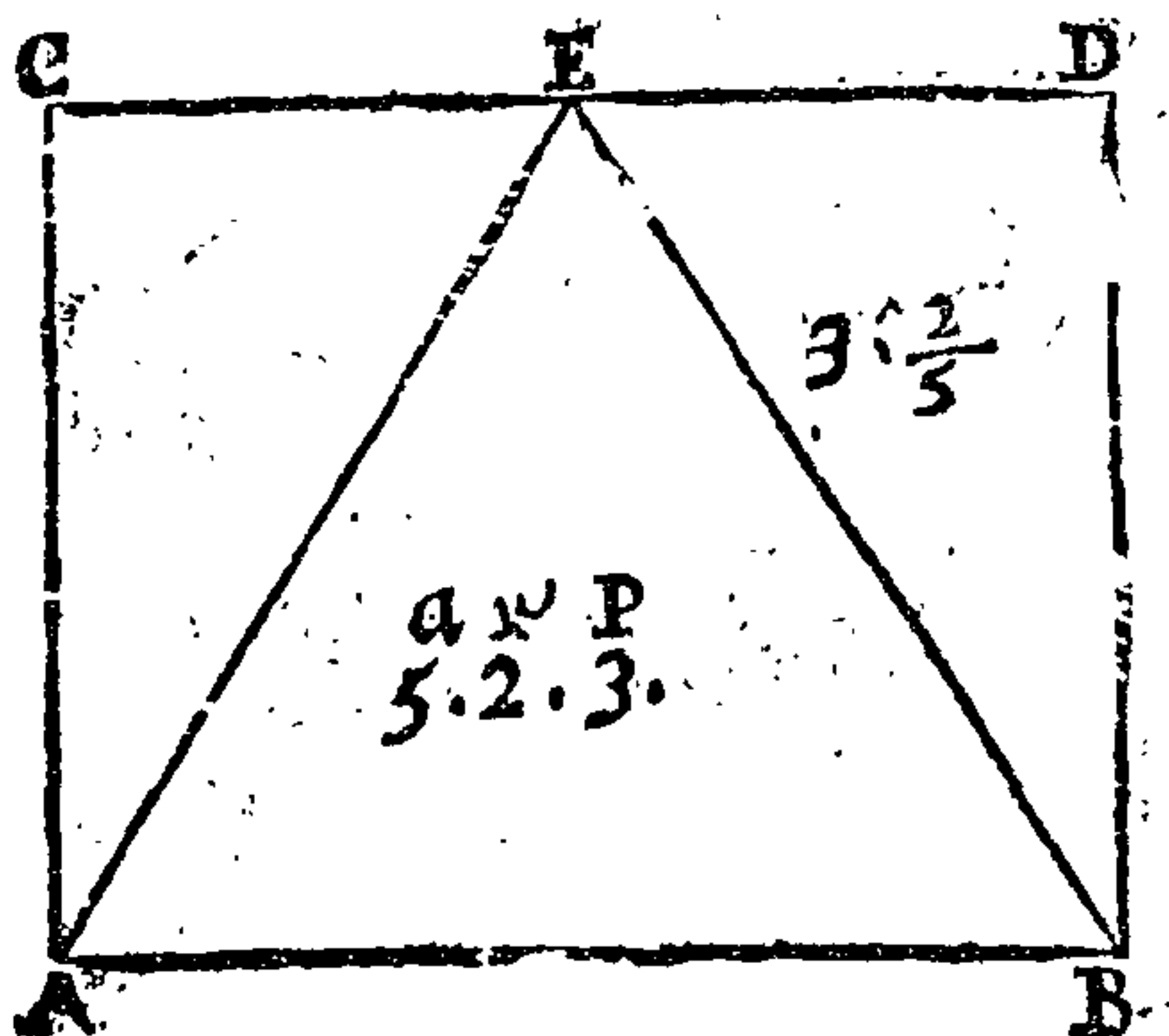
Example.



Note, That if your Quadrant be too little. joyn
two Quadrants together, or do it by a Board, &c.
for want of a plain Table.

How to make a Triangle which shall contain any number of Acres, Rods, and Poles.

Suppose I make a Triangle that shall contain 5 Acres, 2 Rods, and 30 Poles, or 910 Poles, whose Base or longest side must be 50 Poles.



First, Double the Number of Poles, and they make 1820, the which divide by 50, and the Quotient will be $36\frac{2}{5}$, the length of the Perpendicular B. D. then from the line of equal parts in this Book lay down the line A. B. equal to 50 Poles, then upon B. raise the Perpendicular B. D. equal to $35\frac{2}{5}$ Poles, draw the line C. D. parallel to A. B. then from the Point E draw the line E. A. and E. B. including the Triangle A. E. B. which contains 5 Acres, 2 Rods, and 30 Poles, as was required.

Note, By the same Rule you may lay out a bigger or lesser.

To reduce a Plat, already drawn upon Paper bigger or lesser; you may do it by making your Scale according to the bigness you desire, by the Point of the Compasses on Paper, but if you have disfigured your first Plat, by dividing it into Triangles, or the like; you may draw another by it; upon Paper or Parchment, Thus.

Lay your fair Paper upon a smooth Table, upon which fix your rough Plat; then with a Needle prick holes through every Corner or Angle of the Plat, that the holes may appear on the Paper or Parchment under it; then take them asunder, and draw lines from Angle to Angle, as they are in your first Plat.

To know how many Acres (or very near) is in a Kingdom, Island, or Shire, if you have a Map thereof, and Scale of Miles; and also how to draw another Map by it.

First, Take the distance of a Mile off from the Scale of the old Map, with the Compasses, and with that Extent set off parallel lines, on every side these Maps, near the Frame of it. Then from those points made on the edge of the Map, draw cross lines with Black-Lead, to appear like a Sieve, which you may rub out with Crumbs of White Bread.

Secondly, When you have so cross the Map, you may make upon fair Paper, such like Crosses, and draw the same Map thereon, observing to draw each part of the Map in that Square to which it belongs.

Lastly, Every Square of the Map is a Mile Square.

Square, containing 640 Acres. Suppose the Map of a Shire contains 40 Squares, then 40 times 640 of 25600 Acres; but at the edges of the Map you may have halves and quarters of Square, which you must compute as 2 halves make one Square, to be added to the other Number, according to your Judgment, which may be near enough the Truth, &c.

To make Paper or Parchment bear Ink well.

First, Pounce or rub it over with this, *viz.* Take the fine Powder of Gum Sandrick, burnt Allum and Rosin, tied in a Rag, but if your Parchment is very Rough or Gresy, rub it well with Pumice Stone; this Pounce is good also to rub the Paper, where you happen to scratch out a Word with your Pen-knife, after rubbing the place with the Haft; and for pasting a Map to a Board, as before.

*Art unto Nature is Help and Direction,
Experience and Tryal, is Arts Perfection;*

Note, That when you have taken the Base and Perpendicular of a Triang^e in Chains and links, Multiply them together, and it will make a double quantity of Acres; then to prove whether your work be right, take half the Base, or half the Perpendicular, and multiply that half by the whole of the other, and if it is just half of the other in Acres your work is right. Likewise, after you have taken all the Triangles of a Pasture into your Table-Book, *viz.* the Bases and Perpendiculars, to prove them at home.

And when that's done, if you find a Hedge in the Pasture that bends inward, or outward, like a bent Bow.

Bow, you must Measure from one End to the other in a strait line to represent the String of that Bow, and from that line, or String, measure 4, 3, or 6 Perpendiculars to the Bow or Hedge, and add their several lengths together, and the Sum divide by the Number of Perpendiculars, and let that go for the mean breadth, *viz.* the Quotient, that Quotient multiplied by the line, or String, gives the Poles or Perches, or Content.

Of Guaging Vessels.

THE Art of Guaging is little different from the measuring of Timber, (before directed) as a Foot of Timber is 1728 cubical or square Inches, and as often as 1728 Inches are found in a piece of Timber, be it round or square, so many foot of Timber is contained in the piece.

So in the Art of Guaging, the Gallon of Ale and Beer is agreed on, to be 282 cubical Inches, and the Wine gallon 231, and the gallon of Dry-measure 272.

Therefore, so often as 282 square Inches is contained in any Vessel, round, or square, so many gallons of Ale or Beer the said Vessel will hold. The same is to be observed in Wine and Dry-measure, &c.

Note, That every cubical Foot may contain 6 gallons, and almost a pint of Ale or Beer.

Of Wine, 7 gallons, 2 quarts, and almost a pint.

A cubical Foot of Dry-measure, may contain 6 gallons, and a little above half a gallon.

For 141 Inches is in 2 quarts of Ale or Beer $70\frac{1}{2}$ one quart, $35\frac{1}{4}$ Inches in a pint.

See

See *Reduction of Liquid Measure.*

Tho' you may Gauge Vessels by the Rule in Timber-Measure, notwithstanding take a few Examples in as easy a manner as I can.

See *Receptive-Measure in Reduction,*

Example I. Suppose there is a Tun to be Measured, (somewhat like the Figure of the Foot of Timber in Example III. in length 105 Inches, in breadth 76, depth 46 Inches, how many square Inches is therein, as also how many Gallons or Barrels?

Multiply the Dimensions one in another, as is shewed in the first Example in Square-Timber-Measure, and the last Product gives 367080 Inches in the Tun: Which divide by 282, or multiply by this Number 35461, as in this Example.

Cube Inches in the Tun	367080
The Number given	35461

367080
2202480
1468320
1835400
1101240

Gallons	13017c23880

And from the Product cut off 7 figures (always) or places to the Right Hand, (which are the parts of a Gallon) and those on the left-Hand are Gallons, as in this Example is 1301 Gallons.

Note, That the parts of a Gallon is not considerable, if there happen to be a Cypher next the Gallons: But

But in that above is the figure 7, which is the 7 tenth parts of a gallon; that is if a gallon was divided into 10 parts, that is 7 parts thereof; or if the figure 5 had been in the place of 7. it had been half a gallon, because 5 is the half of 10; or if the 70 next the gallons had been 75; it had been three quarters of a gallon, because 75 is three quarters of a hundred, &c

Lastly, Divide 1301 gallons, so cut off, by 36 (the gallons in a Barrel of Beer, or by 32 in a Barrel of Ale) and the Quotient gives 36 Barrels of Beer, and 5 gallons remaining, and near three quarters of a gallon.

Example II. How to Guage a round Tun, Tub, or Furnace.

First; If your Tun, or the like, be of one bigness or breadth, both at top and bottom, find the Cube Inches therein contained, as is shewed in a round Timber-measure, and reduce it into gallons, as before.

But if it be narrower at the top than at the bottom, or contrary, take the breadth or Diameter of the Tun, a little above the middle of it that is, next the widest end, if it be taper.

Or find the mean Diameter thus.

The Diameter at
the Bung or Top of
the Tun. } 26

The Diameter at
the Head or Bottom
of the Tun. } 23

3 Inches difference. } 3

The two thirds of the
difference is two Inches,
which added to 23, the
lesser Diameter, makes 25,
the mean Diameter.

Therefore suppose the mean Diameter of a Tun,
Tub, Furnace, or half a swelling Cask, or the line
to be 81 Inches, and the length 48, how many gal-
lons is therein?

The Cube Inches contained therein, you may find
by the Rule of round Timber-measure, as thus.

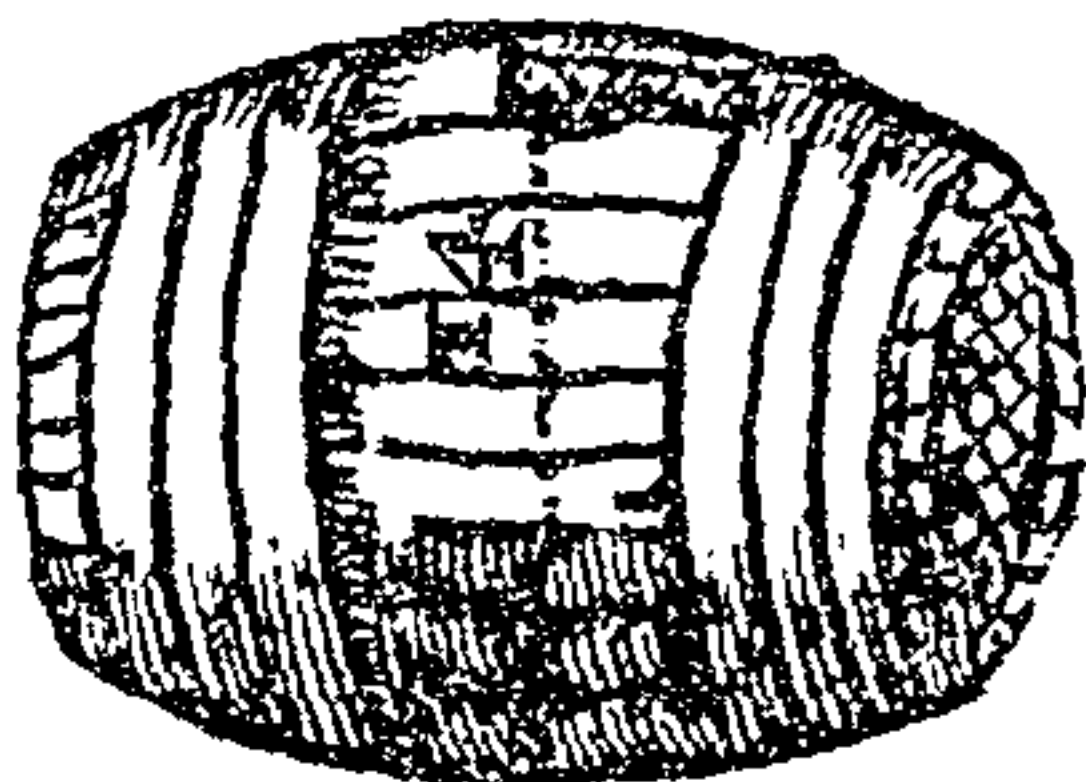
The mean Diameter is 81 } Inches.
Length of the Vessel—48 }

Multiply 81 by 81, and that Product by 11, (al-
ways) and the last Product divide by 14, (always)
the Quotient gives the Content at one Inch deep of
the Liquor (if any.) Secondly, Multiply the said Quo-
tient by 48, the length of the Vessel, and the Product
gives the solid Inches in the same, which reduce in-
to gallons, and the gallons into Barrels, gives 24
Barrels, and about 13 gallons.

Example III.

Example III. Suppose the mean Diameter of a Cask is 14 Inches, and the length 72 Inches, how many Gallons are therein?

Extend the Compasses on Gunter's Line, from 19,



Length 72

95, to 14 the Diameter, that Extent twice downwards, from 72 the length, will reach to somewhat above 39 Gallons of Ale.

But if it was a Wine Vessel, extend from 17, 15 (al-

ways) to 14 the Diameter, that Extent, twice downwards from 72, the length in Inches, will reach to 48 Gallons.

1	0017	26	2066	51	5127	75	8155
2	0048	27	2178	52	5255	77	8263
3	0087	28	2292	53	5382	78	8369
4	0134	29	2307	54	5509	79	8473
5	0187	30	2523	55	5636	80	8576
6	0245	31	2640	56	5762	81	8677
7	0308	32	2739	57	5888	82	8676
8	0375	33	2878	58	6014	83	8873
9	0446	34	2995	59	6140	84	8967
10	0520	35	2113	60	6265	85	9059
11	0598	36	3241	61	6389	86	9149
12	0680	37	3364	62	6513	87	9236
13	0764	38	3487	63	6636	88	9320
14	0851	39	3611	64	6759	89	9402
15	0941	40	3735	65	6881	90	9480
16	1033	41	3860	66	7002	91	9554
17	1127	42	3186	67	7121	92	9625
18	1224	43	4112	68	7241	93	9692
19	1323	44	4238	69	735-	94	9755
20	1424	45	4364	70	7477	95	9813
21	1527	46	4491	71	7593	96	9866
22	1631	47	4618	72	7706	97	9913
23	1737	48	4745	73	7822	98	9952
24	1845	49	4873	74	793-	99	9983
25	1955	50	5000	75	8045	100	10000

Example 4. Suppose a Cask containing 60 Gallons, the Bung Diameter 28 Inches, and the Liquor Drawn off 7 Inches; then the wet Inches of the Diameter must be 11 Inches: The Question is, How many Gallons, remains in the Cask?

Divide

Divide 7, the dry Inches of the Bung Diameter, by 28, the whole Diameter, add two Cyphers.

Thus 28) 700 (25 Quotient.

56

140

140

Next, Seek the Quotient 25 in the Table, and against it you may find 1955, which Number I multiply by the whole Content 60 gallons, thus,

Against 25 the Number is 1955

60

Gallons ——— 117300

From the Product I cut off 4 Figures (always) so that the empty part of the Cask is 11 gallons, and the Fraction 7300 makes about three quarters of a gallon, because 7300 wants about a quarter of 10000.

Lastly, The whole 60 gallons, the part empty $1\frac{3}{4}$ gallons, then the Liquor remaining in the Cask must be 48 gallons, and a quarter of a gallon, the Answer: Or thus,

Divide the wet Inches 11, by the whole Diameter 28, adding 2 Cyphers, as before.

Thus, 28) 2100 (75 Quotient.

196

140

140

Q 2

The

The Quotient 75 seek in the Table and against it is the Number 6045, which Multiply by 60.

Thus, 8045
60

Gallons 4812700

The Liquor 48 Gallons, the Answer; only the Fraction 2700, being about, or somewhat more than a quarter of a Gallon, because 2700 is about a quarter of 10000.

Note, That if after Division, there happen a Remainder or Fraction, and that be about half the Divisor, I take the next biggest Number, or if it be less, then take half the Divisor, or the same Number which is in the Quotient.

V. How many Solid Inches are in an Ellipsis or a Vessel like to an Egg.

Suppose the breadth, or shortest Diameter is 16 Inches, and the length 36, (as the Oval in the Carpenters Work) and the mean Diameter will be 24 Inches, find the solid Inches in measuring a Globe.

Note, That if any Tun, Copper, or other Vessel be uneven at the bottom, put as many Gallons of Water therein as will cover the same, and let the Top of the Water be accounted as the bottom of the Vessel, and find the Superficial Inches thereof, then try the depth of the Copper in divers place, adding them together, and divide them by the Number of places, and the Quotient gives the right dipping-place, which multiplied the Superficies of the Content of Inches of the Superficial the Water gives the Content in Inches.

Mr.

Mr. Oughtred's Way of Measuring the Frustrum of a Spheroid, or Cask.

First, Take the Diameter at the Bung, and find the Superficial Inches of that Circle, v z. By multiplying the Diameter in its self, and that Product multiply by 11, and the next Product divide by 14, the Quotient gives the Content, and take two Thirds of that Number or Content.

Do so for the Diameter at the Head of the Cask, then add these two Thirds together, and multiply it by the length of the Cask in Inches, the Product gives the Content of the Vessel in Cubick Inches, which reduce into Gallons, as before is taught.

VI. To Guage a round Bowl, or the bottoms of a Furnace.

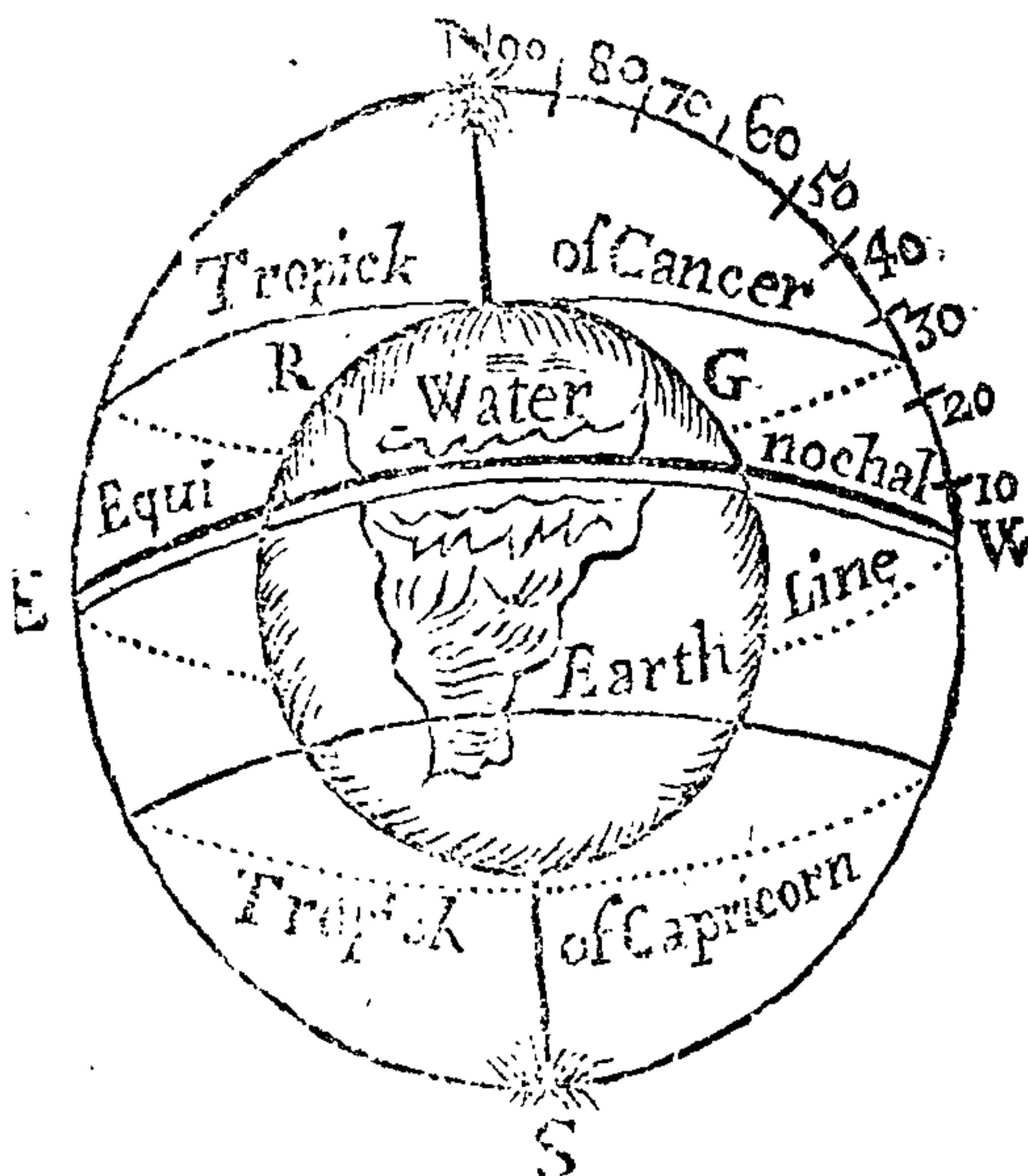
Suppose the Bowl is full Water; *First*, Measure the Surface of the Water, (as you measure a round Table) or Multiply half the Circumference by half the breadth, or Diameter, and that Product gives the Content in square Inches; then measure the depth of the Water in several Places, and add them together, and divide the Sum by the number of Depths you took, and the Quotient gives the mean breadth as near as is needful.

Lastly, Multiply the mean breadth by the Inches on the Surface of the Water, and the Product gives the Content in Square Inches; and to reduce those Inches into Gallons, Pints, &c. is taught at the beginning of Guaging.

Of the Globe of the Earth.

Behold a small Figure thereof, which follows:
That the Young Man my (Reader) may not be altogether ignorant of the Situation of the Earth and Water, this Figure may give so much Knowledge to some, as to cause Admiration in their Hearts, and consider the wonderful Works of God.

Therefore let us suppose that the Circle marked Water, Earth, within the Circle E. N. W. S. to represent the Globe, or round Ball,



*View now, and Read, Nature's great Volume look;
Wisdom's in every Leaf of Nature's Book.*

supposed

supposed to be two thirds Water or Sea, and the other third Earth, held up by God's Hand. *Job 26. 7.*

Because on every side thereof is surrounded with the Sky, &c. and sailed about by Men in Ships, and that every Earthly thing (on which side soever it is) presseth towards the Center thereof, that is, towards the very middle thereof.

For further Proofs, that Man cannot see any Foundation the Globe of the Earth hath, let us ascend into the Sky: As to the North Pole Star, at N. in the Circle above, which suppose to be a fixed Star in the Firmament; and at S. on the other side the Globe, is the South Pole Star; from one of these Stars to the other is a Line imagined to pass through the Center of the Globe, which supposed Line is called the Axel-Tree of the Earth, the Sun circleth once every 24 Hours as Man supposeth.

The edge of the Beams, as I may say, runneth along the Globe of the Earth and Water, if the Air be clear, 15 Miles in a Minute, that is 900 Miles in an Hour, and 21600 Miles every 24 Hours: Or the Earth turns like a Grindstone about the Sun, as some suppose.

Further proved thus; The Arch-line Circle, noted N.W. is divided into 90 parts, called Degrees, or one quarter of the Globe, a Degree being accounted 60 Miles upon the Earth, therefore multiply 90, the quarter of the World, by 60, the Product is 5400 Miles of one quarter of the Globe, which multiply by 4, gives 21600 Miles, that the Beams of the Sun circled round the Earth in 24 Hours we think.

So that soon after the Sun sets with us in Eng-

Q. A.

land

land, it is Noon with them that dwell in *America*, differing in Time about 6 Hours.

That the Globe of the Earth is as a Ball in the Air, fix'd by God's Almighty Power, is proved by the Eclipse of the Moon, a dark Body of its self, having no light but what it receives from the Sun, so that, that side of the Moon that is next the Sun is all light, and the other side dark, (as when in the Night we hold a Candle to a Ball, half the Ball looks dark) so that when the Sun is on one side the Globe of the Earth, and the Moon on the other, the Center of the Earth between them, then the Earth in measure hinders the Sun's Light coming to the Moon, part of the Body of the Moon seeming to dark our Sight, tho the Moon be then in Full, as to us in *England*, tho the Moon may be said to be in Full at all Times to some Places of the Globe. And the Sun's Eclipse is caused when the dark Body of the Moon is between the Sun and our Sight.

Note, That between the Letter N. and the Line E. W. in the Circle above, is written *Tropick of Cancer*, the halt of it is a dotted line, yet it is as much Circle as the Circle E. N. W. S. every Circle of the Sphere is supposed to be divided into 360 Parts, called Degrees. Now this Imaginary Circle called the *Tropick of Cancer*, being the outward Bounds of the Sun, next the *North Pole*, which the Sun Circled in, on the 11th Day of June, Yearly, makes our Days at the longest.

Observe the same of the middle Circle, called the *Equator*, or *Equinoctial Line*, which as it were cutteth the Globe of the Earth in the middle which the Sun Circled in, on the 11th of March, and the 11th of September, Yearly, at both which Times
the

the Sun (that makes the Day) makes our Days and Nights equal.

And when the Sun cometh to the other Circle called by Scholars the *Tropick of Capricorn*, it makes our Days then at shortest, which is on the 11th Day of December.

Dr. Edwards saith, viz: *The Sun is nearer to us than the fixed Stars are; and the Moon is much nearer than the Sun, yet seem to our Sight to be the biggest. The Sun and Moon are called the greater Lights, though the least Star is a greater Light than the Sun and Moon; so that it is said of the Almighty Creator and preserver of the World, That he hanged the Earth upon nothing, Job 26. 7. yet in another Place we read of Pillars of the Earth, Job 9. 6. which is a manner of Speech adapted to the Capacity of the Vulgar, who cannot conceive how so great a Body as this Ball of Earth [and Water] can hang hovering in the Air, &c. His Discourse of the Perfection of the Holy Bible. Volume II. P. 51.*

Now because it hath pleased God, the Wonderful Creator of Heaven and Earth, so to order it; that the Bounds of the Sun shall be from the *Tropick of Cancer*, to the *Tropick of Capricorn*, to enliven the most fruitful Parts of the Earth; for if God (for the Sins of the People) should withhold its Heat from the Earth but one Year, most Creatures therein would Perish, no Grain would ripen, &c. Who would but fear to Sin against such a good God, who causeth the Sun to shine on the Good and the Bad, because of which his Servants seek the Good of all?

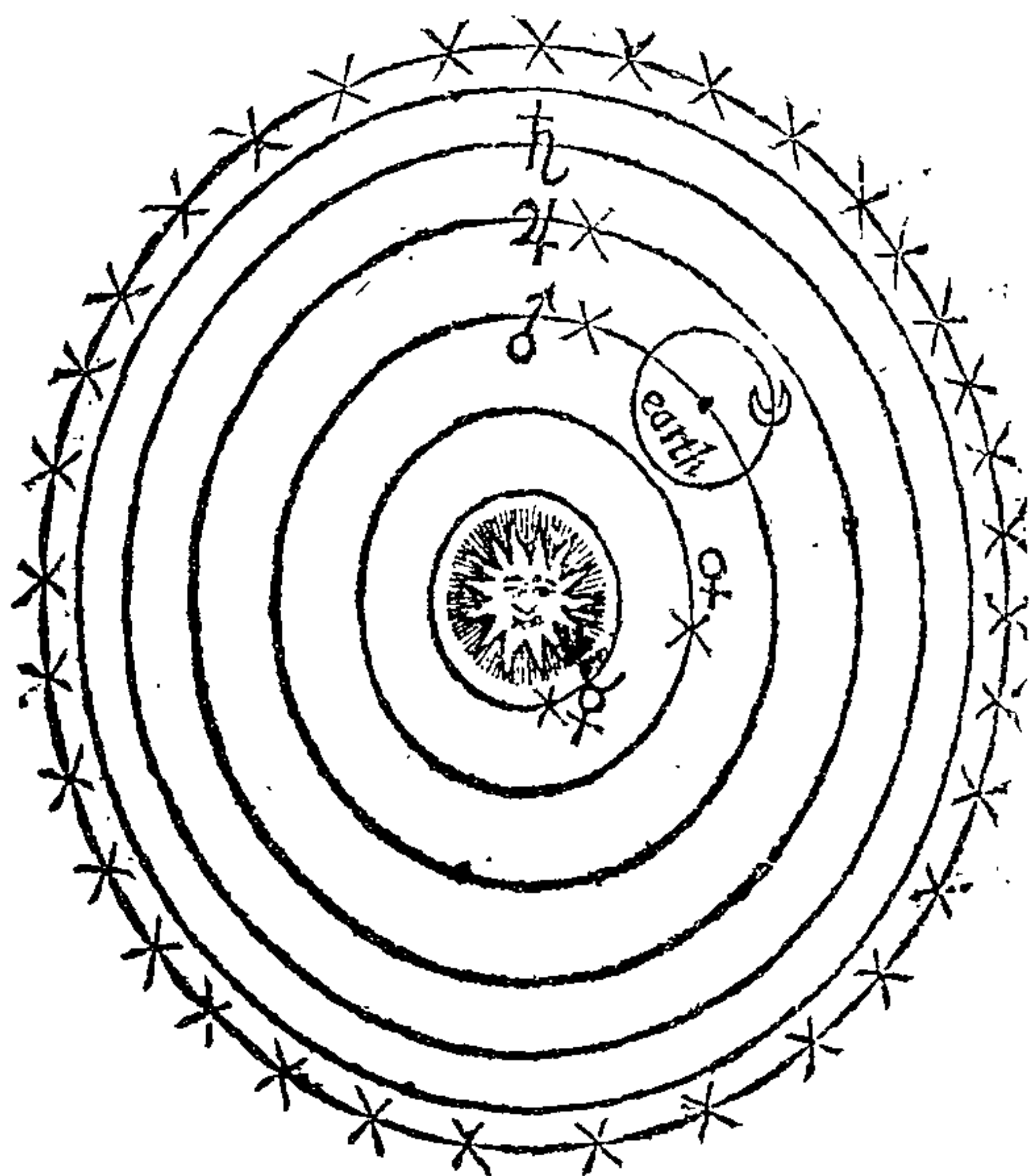
Now those Parts of the Globe, next the North and South Pole, where the Land is, have in some place

place Wild Beasts that have Dens in the Earth to keep them warm: It's too cold for Man to inhabit in, one Year, though there be half a Year called Day, the Sun being some part thereof circling round the edge of the Land, and as I may say, and when the Sun is out of their sight, it still gives some light to make up that half Year Day; the other half Year call'd Night, wants not altogether the light of the Moon and Stars.

Note, Further, That those imaginary Circles, with others between them, *Astronomers* call the 12 Circles, or 12 Signs of the *Zodiack*, giving Names to them, as *Aries, Taurus*, &c. The distance between the said two Tropicks are reckon'd 47 Degrees, every Degree under them on the Earth being 60 Miles; so multiply 47 by 60, gives 2820 Miles of that Earth that the Sun circleth just over the Heads of some of the Inhabitants twice in the Year, that in some Places they have two Harvests in one Year; but we in *England* have not the Sun at any time come just over our Heads, for we dwell towards the cold North Pole, somewhat near the Letter R, in the Circle before:

As to the *Climates*, some divide the Globe of the World into 24 Parts. The common People call the the County that differ from them a Climate, either for the Change of Seasons, or Nature of the Soil, or People that inhabit it, without Relation to the long Days in Summer.

A Description of the Visible World according to Copernicus, and since by Vincent Wing, in his Harmonican Cœleste.



THE Copernican System is proved by Apodictical Mediums: I know nothing of worth (saith he) opposeth it. No, saith my Adversary, what think you of the Scripture? Why, I answer, that whatsoever is there spoken of the Earth's Rest, of the Sun's Motion, *Psalms* 93. 104. 18. *Eccles.* 1. *Isaiah* 38. is to be understood, as the Philosophers say, according to our Apprehension and vulgar manner

ner of Speaking, and not according to the Nature of the Things, as that of *Genesis* 1. Let there be two great Lights, the Sun and Moon; doubtless the Moon hath no innate Light, &c.

First, As in the Figure above, the Sun is the Center of the World, who performs his Revolution upon his own Axis from West to East in about 26 Days.

Secondly, The next Planet above the Sun is *Mercury*, who runs his Course about the Sun in 88 Days, and is distant from the Sun 1917964 Miles.

Thirdly, Next is *Venus*, who runs about the Sun in 224 Days, and distant from him 3636104 Miles.

Fourthly, Next is the Earth in the middle of the Planets, and goeth about the Sun in 365 Days, 5 Hours, and 49 Minutes, and distant from the Sun 5021856 Miles.

Fifthly, Next is *Mars*, who runs about the Sun in 321 Days, and distant 7635292 Miles.

Sixthly, Next is *Jupiter*, who runs his Course in 21 Years and 315 Days, and distant 26179152 Miles.

Seventhly, Next is *Saturn*, the highest and slowest, and performs his Course about the Sun in 291 Years, and 162 Days, and distant from the Sun 47833576 Miles.

The Earth (speaking properly) is not moved, or any other Planet, although they are transferred, or carried about by their Orb, or Heavens.

Rom. 1. 20. *Invisibilia Dei & creatione Mundi per ea quæ facta sunt intellecta conspiciuntur.*

I am not for forcing a Belief in any Man, but to discover somewhat of Man's Invention in this and some other Things.

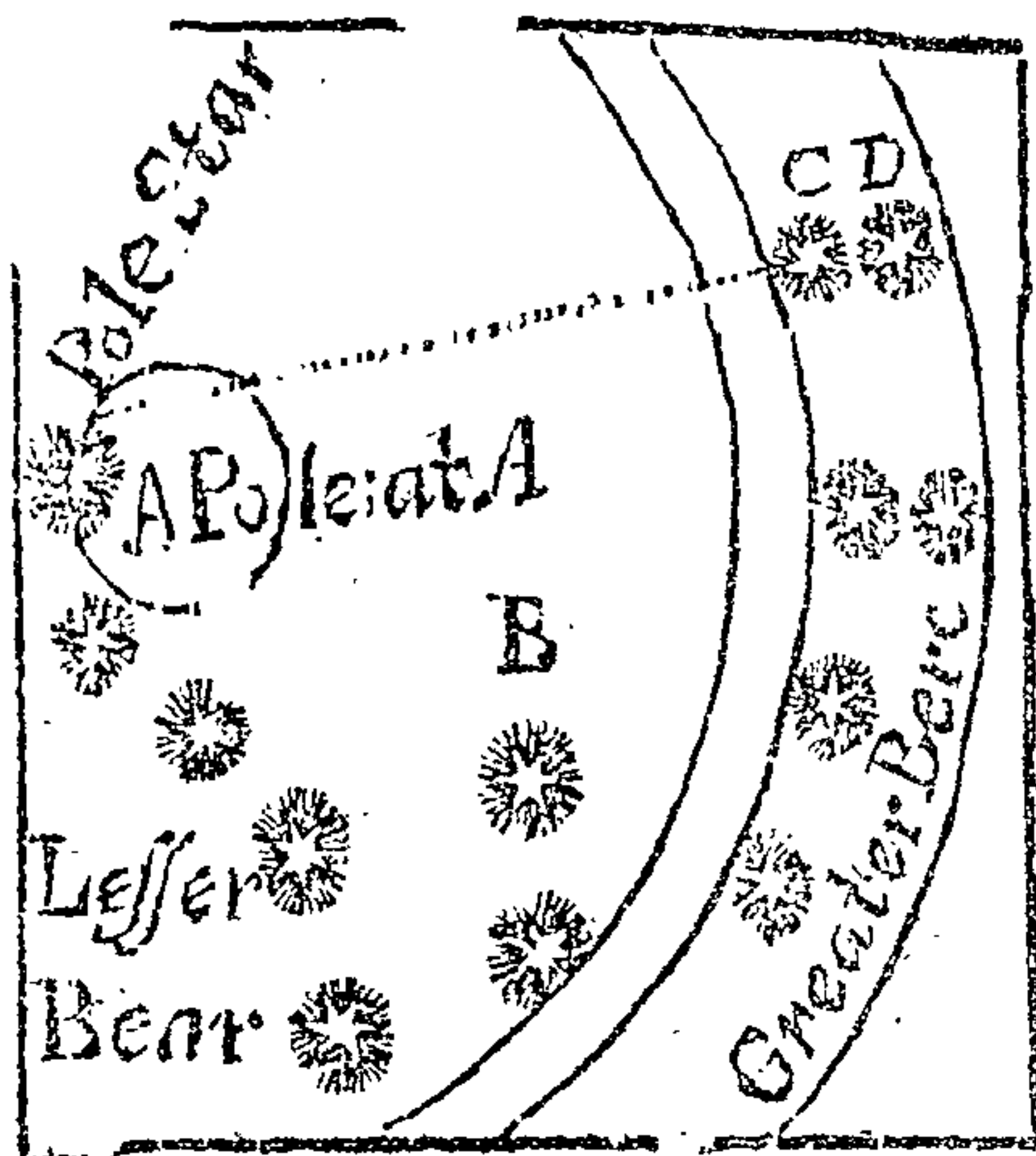
A MAP OF ENGLAND



*R. Stands in Rutlandshire, because there was not Room to write the Name at Length: And
H. in Huntingdonshire. B. in Bedfordshire M. in Middlesex E. in Flintshire* 

To know the Latitude or Altitude of the Pole Star above your Dwelling.

In short thus: The Sun riseth Eastwards to us in England. and setteth Westwards; at 12 a Clock, mid-day, the Sun is full South; if at that time you turn your Back-upon the Sun, you will face the North-side of your Dwelling. Thus knowing the North-side of your House, go out in a Star-light Evening, and and see if you can espy 6 or 7 bright Stars, somewhat at certain distances, like those 6 Stars in the Figure following, called there the *Greater Bear*; but because of their constant certain distance one from another, were anciently called *Charles's Wane*; but chiefly you are to take Notice of the two Stars thereof, noted C. D. called the Tail, or hinder part of the Wain, because those two Stars always answer.



to a right line to the North Pole Star, which in this Figure is a dotted line, and in that posture circlet round the North Star every 24 Hours.

But the Pole of the World is supposed to be where the Capital Letter A standeth, and the North Star goeth round it also in 24 Hours. See the Figure above.

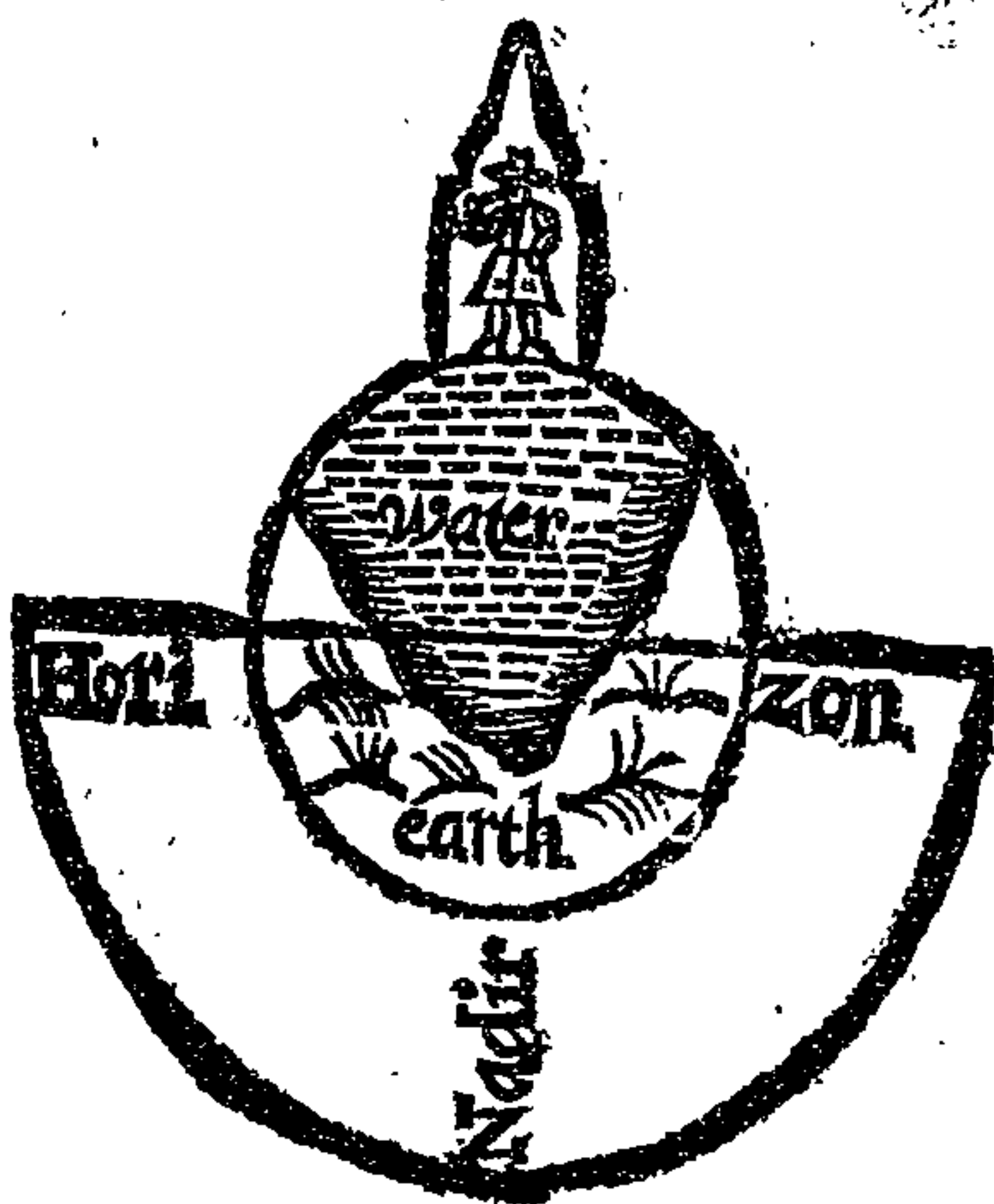
Having learned to know the North Star to know Latitude of your Dwelling, hold up a Quadrant (a Figure of 1. see in Dialing) and thro' the Sights thereof, or along the straight edge, spy the North Star, the Plummet hanging at liberty, the Thread will rest at 51 Degrees, 32 Minutes, if you are in *London*. See *England* before, for the Latitude of the chief Towns in *England*, drawn in a Table.

Note, That the Degrees are numbred from the Equinoctial Circle, as from W., towards N. in the Figure of the Globe above.

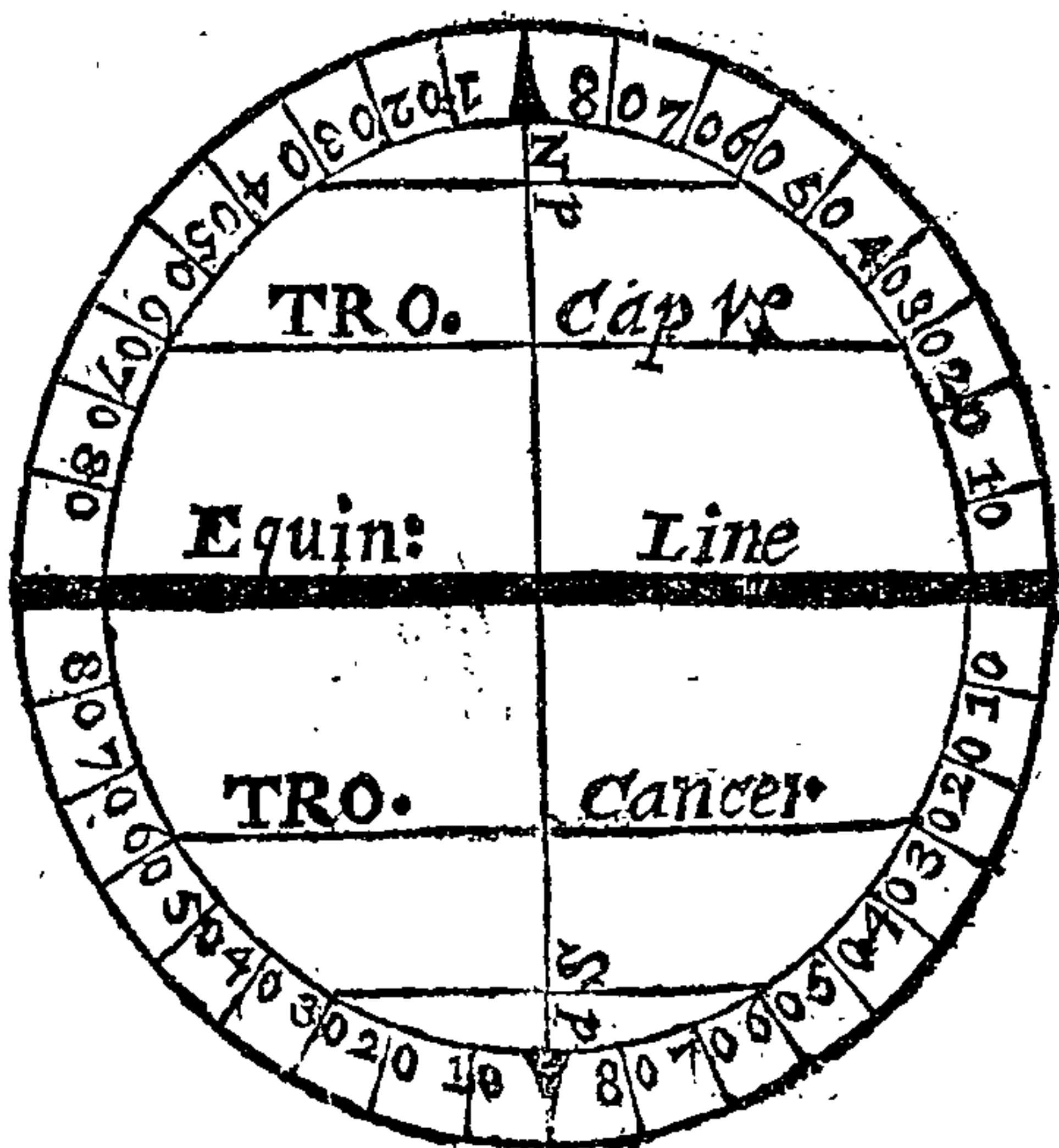
Note Also, to know if your House faces the South, (or mid-day) see the Rule at the beginning of Dialing.

And when we say such a Province, or Tract of Land lieth from 30 to 40 Degrees North Latitude, it lieth on the North-side of the *Tropick of Cancer*, as you may see in the Figure of the World before, as the figured Arch there, which is but 10 Degrees from the North to the South part of that Province, or 600 Miles; but are to seek to find the Longitude, without some Knowledge therein.

For Page 355.



Further of the Altitude, or Height of the Poles.



A Man being upon the Globe of the Earth, (as the Figure sheweth) right under the Equinoctial-Line, hath both the Poles the one in the North, and the other in the South, at the Horizon without an Elevation; and then he standeth also right upon the middle line of the Globe of the Earth without any Latitude.

If he remove from the middle line towards the North or South, the one Pole shall then rise up out of the Horizon, and the other sink under the same.

Somewhat

Somewhat of the Longitude of Places.

THE Longitude of a City, or other Place, is the distance thereof; from the Isle of *St. Michael*, one of the Isles of the *Azores* beyond *Portugal*, from which Isle the Longitude of Places upon Earth are numbred in the Equinoctial-line towards the East, the said Isle of *St. Michael's*, North Latitude, being 39-Degrees, as the Author saith.

Geographers having chosen the said Isle to divide the East-part of the World from the West, because the Seaman's Compass a Figure whereof follows) when it cometh under the Meridian-line, drawn through over this Isle, hath not (as Seamen observe) any Variation at all but pointeth directly North without Variation; but whereas in other Places, or lesser Meridians, East or West, it pointeth not directly North, but more or less to the North East, or the North-West, this is called the Variation, or North-Westing, or the North-Easting of the Seaman's Compass.

Note, That this Meridian, drawn through the said Isle, is only an imaginary Circle, as those before mentioned, as the Circle E. N. W. S. cutting thro' or bounding both Poles.

There are Meridians for every Town, which lie East and West from each other; yet several Towns may lie in the same Meridian that lie North and South from each other; for when we see the *Sun* at mid-day, we say it is come into our Meridian.

For when two Cities lie both under the Equinoctial-line, or very near it, it is but Multiplying their
their

their distance in Degrees. (on the Equinoctial) by 60, gives their distance in Miles.

If two Cities propounded (saith *V. Wing*) do differ only in Latitude, and lie both of them on one side of the Equinoctial-line, you must subtract the lesser Latitude from the greater, and the Residue is the Distance required.

But if two Cities, or Places propounded lie the one on the North-side the Equinoctial, and the other on the South side, then you are to add the two Latitudes together, and the Sum will give their distance in Degrees and Minutes, which reduce into Miles allowing 60 Miles to a Degree.

But I sh^d not enlarge upon these things, having not room enough; and besides, the Longitude and Latitude of Places, upon the Earth, are best known by the Artificial Terrestrial Globe, which are to be had at easie Rates in *London*.

Geographers, according to all the Relations of Travellers, agree, (saith the Author of the Monthly Mercury) That never any Vessel approached the Arctick-Pole much nearer than the fourscore and sixth Degree, by reason of the perpetual Ice in those Parts. There remains then to the fourscore and ten Degrees four Degrees impracticable, which makes fourscore good Leagues of *France*, and four hundred and four of Icy Circumference, which at another time, there being in that Part but these four Degrees of Ice, affording us in the Summer time, such pleasing and pure Breezes; but this not being every Year alike, we are now sensible of the sharpness of the Cold and Fogs which this usual Ice sends among us. Certain it is that the Ice dilates itself, more or less, accord-

ing

ing to the Heat which the Sun leaves behind him, during his six Months Residence among us.

The Winter in 1692, was so very sharp, that the Sea was frozen over; to the 55th Degree; and all the Baltick Sea, our Neighbour within 200 Leagues, was frozen over; so that the Sun in his usual Course, passed the Equator, and ceasing to illuminate our Pole, could not thaw the Ice farther than the 70th Degree, thro' the Opposition of those Fogs, which the Thaw of those 15 Degrees of new Ice brought to his Beams and to some Southerly Winds, which were at first repuls'd, which was the Reason that our *Europe* was in so much disorder, and that her Harvests wanted their usual Maturity.

It may be asked, why the Sun does not give an equal Heat every Year; but we must observe, That when the Sun comes to the *Tropick of Cancer*, and when he begins to retrograde, when the Ice of 70 and 80 Degrees are not melted, we shall hardly meet with 15 Days that are truly hot, to the Equinox of *September*. The Reason is, because we are not above 200, 300, and 400 Leagues distant from that Ice, and there are 560 of our 50th Degree to the *Tropick*. So that the Neighbourhood of that Wind repels the South Wind, and hinders the Sun from warming our *Horizon*, as it was wont to do.

Our only Succour is, that frequent Storms may happen between the *Tropicks* in the Months of *July* and *August*, which affords us Winds sufficient to melt that unusual Ice, and henge it in again within the 80th Degree, before the Sun is gone into the other Hemisphere, and that our Countries may reassume their former Vigour.

It may be ask'd also, why the North East and North West Wind, and their Compounds, tho' parallel

parallel in distance from the North, are felt with so much difference? The North-East Wind coming from the frozen Sea of *Tartary*, and passing through the long Sea of *Tartary*, *Poland* and *Germany*, to *France*, are often more sharp and pure than the North.

The North West, tho' it blow from the 70th Degree of frozen *Greenland*, parallel to the North-East, the Vapours of the Sea, thro' which it passes to us, renders it more soft, and less cutting to us, which is the reason of so much melted Snow among us in *England*, the Coasts of *Holland* and *Britain*, clarify it a little by the thick part which they receive from it before it comes into *France*.

North Star on this side the Equinoctial-line; and the South Pole Star is a help, when he Sails on the South side the Globe.

Thirdly, The Compass is fix'd in a Pasteboard Box in the Center is set up a hollow Pin of Laten, a little hole being in the middle of the Needle to set on the Pin, that the Needle may be upon a Ballance, and the great end of the Needle being rubed with a Load-stone, will turn Northwards at all times, the said Box hanging (as it were on a Axel-Tree on two Pins) in another Box, between two Hoops of Brass or Laten, that howsoever the outermost Box is tossed in the Ship, yet the inner Box hangs level with the Horizon.

It is placed in the middle of the Poop upon a right line, imagined to pass by the Main-Mast, thro' the Center of the Ship, and putteth the Pilot in his way, knowing which way the Land beareth, which the Ship is sailing towards.

Lastly, The Line of North and South found out by the Needle, a Line crossing this at right Angles, sheweth East and West, and so they are called the 4 *Cardinal Winds*.

Cross again each of these Lines, and they make 8 whole Winds, as they call them.

Another Division of these making 8 more, which they call half Winds; a third make 16, which call quarter Winds, so they are 32 in all.

Every one of these Winds is otherwise termed a several Point of the Compass, and the whole line consisting of two Winds, as the line of North and South, or that of East or West, is called a *Rhumb*, the Winds, and *Rhumbs* thus assigned by an equal Division of a great Circle in 32 Parts.

Acts 21. v. 11 mentions a Ship, whose Sign was *Castor and Pollux*: And in a Sea Voyage of St. H. Gilbert, who saith, we had upon our Main Yard, an Apparition of a little Fire by Night; which Seamen do call *Castor and Pollux*, but we had only one, which they take to be an Evil Sign of more Tempest, the same is usual in Storms—— But in the Voyage of Robert Thompson, into *Nova Hispania*, in the Year 1555, being in a Storm, amongst the *Spaniards*, at Sea, he gives his Opinion of Signs of Storms, ‘ I do remember (saith he) that, in a Storm there came upon the Top of our Main Mast a certain little Light, much like unto the light of a little Candle, which the *Spaniards* called the *Cuerpo Santo*, and say it was St. *Elmo*, whom they take to be the Advocate of Sailors, at which sight the *Spaniards* fell down upon their Knees, and worshipped it, Praying God and St. *Elmo* to cease the Storm, and save them, and promising him, that at their coming on Land, they would repair unto his Chappel, and there cause Masses to be said, and other Ceremonies to be done. The *Fryars* cast Reliques into the Sea, to cause the Sea to be still, and likewise read the Gospel, with Crossings, and other Ceremonies, to make the Storm cease, But I could not perceive it nor give Credit to it, till it pleased God to send Deliverance to us, praised be his holy Name. This light continued for about 3 Hours, flying from Mast to Mast, and sometimes in two or three places at once, I enquired of Learned Men concerning this Light called *Castor and Pollux*, they say that it was but a Congelation of the Wind and Vapours of the Sea, congealed with the extremity of the Weather, which flying in the
: Wind

‘ the Wind, many times doth chance to hit on the
 ‘ Masts, and in Truth I do take it to be so, for that
 ‘ I have seen the like in other Ships at Sea, and in
 ‘ sundry Ships at once.

‘ By this (adds he) Men may see how the *Papists*
 ‘ are given to believe and Worship such vain Things
 ‘ and Toys, when at all Worship and Honour is to
 ‘ be given to God only. (*See the Sea Chronicle.*

Great is God's Providence (saith Dr. Fuller) in
 ordering it, that a Fog or Tempest never can be to-
 gether at Sea, the Fog vanisheth as soon as the
 Tempest ariseth, otherwise smaller Vessels (Ships)
 would be cast away, which want the Direction of
 the Compass to guide them. [*His Hist. p. 200*]

For the Antients not knowing the Vertue of the
 Load-Stone, which the Point of the said Needle is
 rubb'd with, that Point or End, points towards the
 North at all times) they coasted from one Country
 to another, keeping at no great Distance from the
 Land. Now by the help of this Needle in the Com-
 pass, the skilful Mariner, if the Wind serves can
 sail about 1000 Mile in a Week; seen in the dark-
 est Weathea, when they can neither see the Land, nor
 the Pleiades, (or seven Stars, that wheels round the
 World in about 24 Hours) nor either of the Pole-
 Stars, which are fixed) which Stars formerly were
 their greatest Guide when they could be seen, if not,
 the Pilot (who guided the Ship at the Rudder) was
 at a Loss, and lay expos'd to the Casual Conduct
 both of Winds and Tides.

But First, The beginning of Trading from one
 Nation to another (or the People in one Country)
 was by exchanging Goods for Goods, and Trading
 most in Cows, Sheep, &c. they exchanged some
 of

of them with others for what they have need of; this way of Exchange they found to be troublesome; they made use of Iron and Copper, of which they form'd pieces of a pound weight, to signifie 20s. and stamp'd upon one side the Figure of a Ship, with the weight and value, and on the other side, the Picture of one of those Beasts (saith my Author) which are design'd by the Word *Pecus*, whence Money came to be call'd *Pecunia*, the Latin Name for Money) *Constantine* put a Cross in the place of the Beast: Now, because in the old *Gaulish Language*, a Ship was called *Pile*, whence the Word *Pilot*, the guider of a Ship on the Sea remains to this Day.

*Give Thanks to God ye Travellers,
Ye Sick, and Seamen all;
Ye Captives and distressed Saints,
He helps you when you call.*

And it is a great Mercy that God did stir up our Superiors to make Laws against such as vainly take God's Holy Name into their Mouths upon every frivolous Discourse. [See *Jam.* 8. 12] Every Person in a Ship of War using unlawful Rash Oaths, Cursing, or Blaspheming the Name of God, shall forfeit one Days Pay, or be Fined, Imprisoned, or otherwise; as the *Court Marshal* shall think fit. [Stat. 13. Car. 2. Act. 2] The same Penalty for Drunkenness, except the Officers, who are thereby render'd incapable of holding any further Command. The same Penalties of Fine or Imprisonment, for Adultery. But the Buggers are to die.

The Thief shall make Satisfaction out of his Wages, and be further punished, as, by the Com-
R mandr

mander of a Ship shall be thought Expedient (*Mal. 3. 5. Luke 21. 34. 1 Cor. 6. 9, 10.*)

Psalms 107. 23, 24, 25; &c. They that go to the Sea in Ships, &c.

Ballast for Ships, See *Observations in Gardening for September.*

Besides, the frequent Drinking of Healths to others Prosperity, (so called) but the first rise of this foolish Custom was thus.

The Danes Tyranniz'd over the *English* with a very high Hand, every *English* House ('tis said) maintaining one Dane, whom they called Lord, who liv'd Idly, by the Labour of the *English*.

Who basely, when some of the *English* were Drinking, used either to Stab them,

or cut their Throats, therefore to avoid which Villiany, the

Party then Drinking requested some of the next to him to be

his Surety, or Plodge for his Life, from whence came the Expression to this Day, of Pledging on another.

The first Rise of the Folly of Health Drinking.

Now the Cause being (thro' God's Mercy) taken away, there's no need of continuing the Custom of tempting any one to Drink (*Heb. 2. 15.*) more than good Nature requires; and as it is now amongst the Sober *English* at Meals, and at other times, who (*tho' they drink to one another*) desire no Pledges, but let the Party (that wants to drink) either pour it into the Cup, or Glass, to drink or call for it.

Forced Health's (saith one) at great Feasts, are a barbarous Fashion, (used by some *Church-Wardens* at their needless Feasts;) at *Ahasuerus's* Feast every Man's Rule was his own Choice, and the Civility

of

‘ of the very Pagans commanded liberty of their
‘ Cups. [*Manchester's Contemplations*, p. 276]

‘ But Health-drinking is by good Christians called,
‘ *The Shooing-Horn of Excess.*

‘ These *Strong Liquor Worshipers* (saith he) will
‘ sometimes be on their Knees to Drink a Great Man's
‘ Health, [until this Drunkard has inflamed his Blood,
‘ *Isaiah* 5. 11.] And so make gods of others, and
‘ Swines of themselves, *Rank: Idolatry.*

*A Table shewing, for ever
the Time of Day break, very
useful for Travellers, for then
'tis about two Hours before
Sun-Rise.*

The Use.

*Suppose you would know
at what Time it is Break
a-Day on the 11th of No-
vember.*

*Look Nov. 11th in the
first Column, and against it
is 5 Hours 45 Minutes past
5, that is about 3 quarters
of an Hour after 5 a clock.*

*-Psalm 63. 1. O God, Thou
art my God early will I seek
thee.*

*And in his Law doth he
meditate Day and Night Psal.
1 2.*

Months.		Day-Break.	
		Ho	M.
Jan.	1	5	54
	11	5	45
	21	5	35
Feb.	1	5	17
	11	5	0
	21	4	45
Mar	1	4	20
	11	3	59
	21	3	34
Apr.	1	3	55
	11	2	38
	21	2	2
May	1	1	30
	11	0	30
	21		
Jun.	1	All Day and no Night.	
	11		
	21		
July	1		
	11	0	42
	21	1	22
Aug	1	2	0
	11	2	21
	21	3	0
Sep.	1	3	36
	11	3	59
	21	4	19
Oct.	1	4	48
	11	5	0
	21	5	18
Nov	1	5	37
	11	5	45
	21	5	54
Dec.	1	5	57
	11	6	6
	21	5	8

When I walk by the Way, That I may always remember, That thou, O Lord, rested Jacob's Well, and spoke of Grace, the Water of Life, Jo. 4. 16.

When buying or Selling, That I may remember to do the Truth, and die in its Defence, if called to it.

When like a Man building a House, That I may remember the House not made with Hands, 2 Cor. 5. 1. Heb. 11. 10.

When I see some going a Fishing, O that I may remember how St. Peter was astonished at the many Fish in one Net, Luke 5. 9, 10. let into the Sea at Christ's Command, shewing that St. Peter should catch Men, viz. Persuade them to forsake their Sins; Sin was the Cause of Christ's Suffering, then who can love Sin, that ruins Body and Soul?

How to Draw a Dial upon a Stone or Wooden Ball, or Globe, that's fix'd on a Gate-Post, or any other Place.

First, Hold the Quadrant close to the side of the Ball, or Globe of Stone, (in a Star-light Evening) the Plummets hanging at liberty, spy through the Sight thereof, the North Pole Star, as is directed, the Thread thereof, cutting the Degrees of your Latitude; then make a spot on the Ball, next to, or that Point towards the said North Star.

Secondly, Draw the Circle directly round the very middle, resting in C. and extend the other middle of the Ball, or two Circles, to place Figures for the Hours, so that every side of the Circle be of equal Distance from the said spot.

Lastly; Having a Post-Dial, or other Dial near the Place

Place, or Watch, mark both Edges that the Sun makes on each side the Ball for every Hour, &c.

Note. That by this Rule you may draw a Sun-Dial upon a round Pillar.

How to fix a Dial North and South, &c.

Nail a Trencher on the Top of a Post, and with the Compasses, draw four, five or six Circles, one within another from the Center, in which Center stick a great Pin upright, and when the Sun shines in the Forenoon, observe which Circle the Pin's Head shadeth, there make a Mark. do so in the Afternoon, when the shadow of the Pin's Head comes up on the same Circle, and from the Mid-way of those two Marks draw a line to the Center, upon which line lay your 12 a Clock of your Post-Dial, because it points to the North and South.

Which line is also called the *Meridian-line*, so that by this plain way, without any other Instrument, you may exactly find the situation of your Dwelling-House, to know whether the Face thereof be full South and whether it declines to the East or West, and how many Degrees, if you divide one quarter of the Circle upon the Board (next your House) into Ninety Parts, or Degrees, like the Quadrant (before)

By this Rule you may also place a new House, or Church, that the Ends shall point to the E and W.

And you may also know, by this *Meridian-line*, when the Moon, or a great Star, is in the South, for then they are at the highest (always) for that Day, or that Night.

A Table to know the Hour of the Day by a Walking-Stick, divided into 10, or 100 equal Parts.

Forenoon.		12	11	10	9	8	7	6	5								
Afternoon.			1	2	3	4	5	6	5								
June.	11 11	0	55	0	60	0	75	0	98	1	34	1	92	3	0	5	72
	6 16	0	56	0	61	0	75	0	99	1	35	1	93	3	1	5	80
	1 21	0	56	0	61	0	76	0	99	1	36	1	95	3	4	5	90
	26 26	0	57	0	62	0	77	1	01	1	38	1	98	3	12	6	18
May.	21 1	0	59	0	64	0	79	1	03	1	41	2	2	3	21	6	52
	16 6	0	61	0	66	0	81	1	06	1	44	2	8	3	35	7	11
	11 11	0	63	0	68	0	83	1	08	1	48	2	14	3	51	7	86
	6 16	0	66	0	71	0	86	1	12	1	53	2	24	3	73	9	6
April.	1 21	0	69	0	74	0	90	1	16	1	59	2	34	4	0	10	78
	26 26	0	73	0	78	0	94	1	21	1	66	2	47	4	36	13	84
	21 1	0	77	0	82	0	98	1	27	1	74	2	62	4	81	19	63
	16 6	0	82	0	87	1	04	1	33	1	84	2	81	5	43	35	80
August.	11 11	0	87	0	92	1	09	1	40	1	95	3	3	6	23	36	40
	6 16	0	87	0	92	1	16	1	46	2	8	3	31	7	43		
	1 21	0	99	1	05	1	23	1	58	2	22	3	65	9	22		
	26 26	1	06	1	12	1	31	1	69	2	40	4	7	12	18		
September.	21 1	1	12	1	20	1	40	1	81	2	60	4	60	18	17		
	16 6	1	12	1	28	1	50	1	94	2	84	5	21	20	37		
	11 11	1	30	1	37	1	61	2	09	3	13	6	27				
	6 16	1	40	1	48	1	73	2	27	3	47	7	63				
October.	1 21	1	51	1	55	1	87	2	47	3	19	9	73				
	26 26	1	63	1	72	2	02	2	71	4	41	13	30				
	21 1	1	76	1	86	2	19	2	98	5	8	63	94				
	16 6	1	89	2	00	2	38	3	29	5	92						
November.	11 11	2	03	2	17	2	61	3	66	7	8						
	6 16	2	21	2	35	2	84	4	08	8	62						
	1 21	2	39	2	55	3	11	4	59	10	98						
	26 26	2	58	2	76	3	39	5	18	14	51						
December.	21 1	2	76	2	99	3	71	5	89	20	81						
	16 6	3	00	3	21	4	05	6	68	24	37						
	11 11	3	21	3	46	4	40	7	60	25	84						
	6 16	3	41	3	68	4	76	8	63								
January.	1 21	3	60	3	91	5	11	9	72								
	26 26	3	75	4	09	5	42	10	79								
	21 1	3	91	4	25	5	66	11	73								
	16 6	3	97	4	33	5	82	12	38								
February.	11 11	4	01	4	37	5	90	12	64								

The Use of this Table.

Take a Stick of any length and with the Compasses, or otherwise divide it into 10 equal parts by Notches therein, or small Brass Nails, (nine will serve) and suppose each of these Parts to be divided into 10, which is 100 Parts.

To know the Hour of the Day.

Hold the Stick upright on some plain level Ground, or on a Table in the House, if the Stick is not above one Foot in length, the Sun shining in at the Window, note the Places where the shadow ends, then with the Staff measure the length of the shadow.

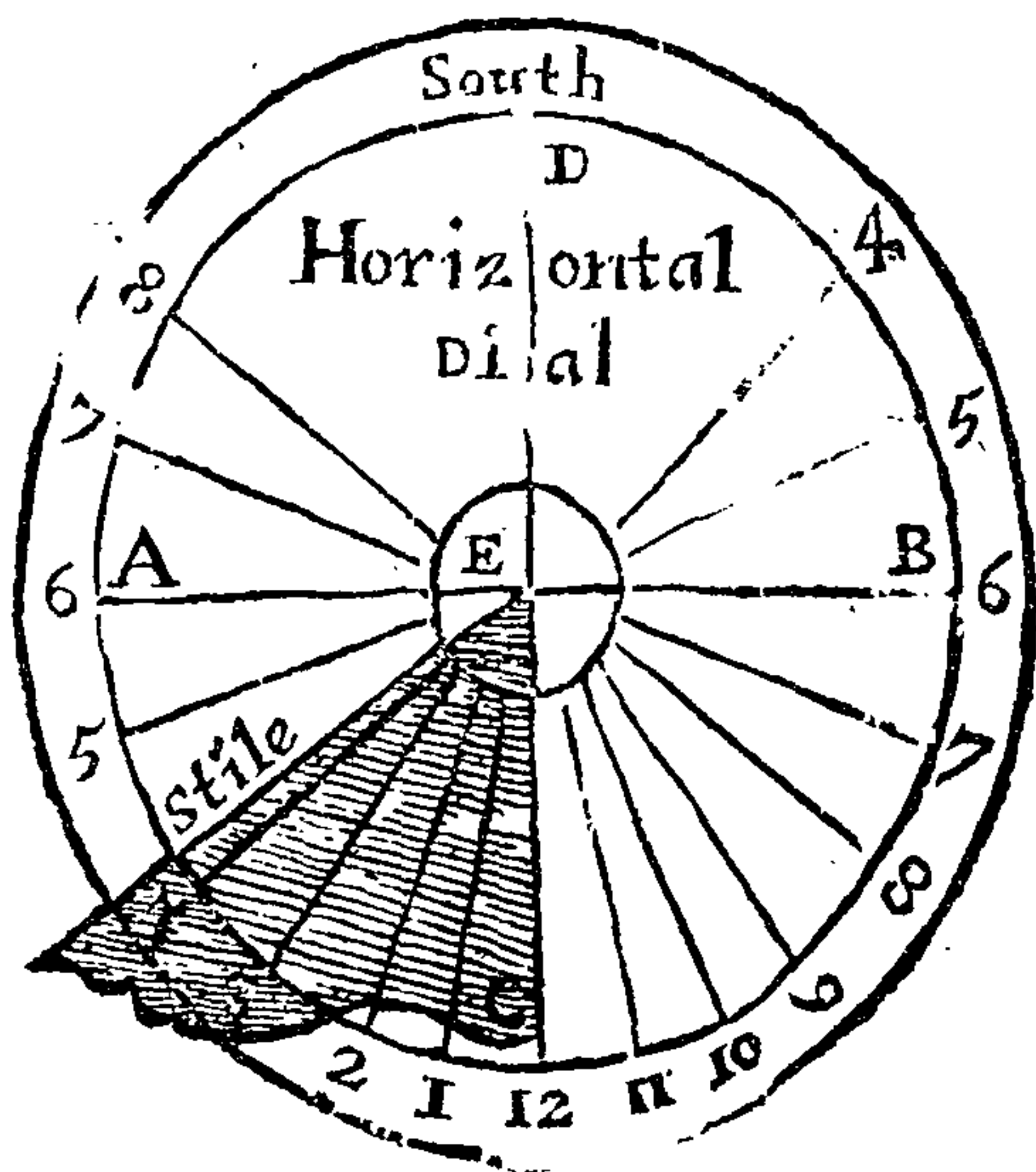
Example.

As suppose, that upon the 16th of *April*, or the 6th of *August*, (which is all one) I erect the Staff, and the length of the shadow to be a Staff's length and thirty Parts.

I look in the line against the Day of the Month, and I find 1, 30, the nearest thereto is 1, 33, over which (at the top of the Table) there stands 9 and 3, which shews the nearest Hour to be 9 in the Morning, or 3 a-Clock in the Afternoon.

Thus much of Dialing which is an ancient Art, yet the first Dial that Histories mentions, is the II. of *Kings*, Chap. 20, verse 11. where the Lord turned the Sun back 10 Degrees, for *Hezekiah's* sake, whereby it had gone down in the Dial of *Abaz*. This *Abaz* was King in *Jerusalem*, and Reigned in the 320th Year after the Creation of the World.

An easy Way to make a Post-Dial, and is called an Horizontal-Dial, because it faceth the Sky over our Heads, or lies level to the Horizon.



First, with a Ruler, and the Point of the Compasses, draw a line on Paper (at any length) as the line *A. B.* in this Dial, then cross it with another line, as the line *G. F.* and South on the Top, as in this Dial, which line *F. G.* is the 12 a-Clock line and the line *A. B.* the 6 a-Clock line.

Next, Open the Compasses, and set one Foot at the

the Beginning of the Degrees, or Arch Edge of the Quadrant (before described) and Extend the other Foot to 60 Degrees, with that Extent set one Foot in the Center of the Dial by E. that is, just where the first lines crosseth each other, and draw the half Circle A. G. B.

Next, Having the 12 a-Clock line E. G. now to know what distance I shall set off from it, for 1 a-Clock, and 11 a-Clock, which is all one.

I look in the little Table in the Margin, and in

the second Column I find against one Hour, and 11 Degrees, 55 Minutes, which I take off the edge of the Quadrant, thus I set one Foot of the Compasses (as before) at the beginning of the Divisions (under B) and the other foot to 11 Degrees, and almost a small part; the Com-

52			
D.	M.	Hours.	
11	55	1	11
24	26	2	10
38	13	3	0
53	44	4	8
71	9	5	7

passies so opened, I set one Foot in the circle, at the bottom of 12 a-Clock line, and with the other Foot mark in the circle both towards A. and B. and from those two Marks I draw lines, which you may after black with Ink.

Next, To mark the Hours for 2, and 10 a-Clock, look in the Table for 2 and 10 Hours, and you will find 24 Degrees, 26 Minutes, which set off the Degrees of the Quadrant as the other, from the 12 a-Clock line both ways in the circle.

Observe the same for 3 and 9 a Clock; and 4 and 8 a-Clock, and 5 and 7 a-Clock; and for the Hours of 5 and 7, and 4 and 8, above the 6 a-Clock line, set off the distances below. See the Dial before.

Secondly, Draw the line C. O. E. for the 12 a-Clock line, called also, *The Meridian-line*.

Thirdly, Cross the said 12 a-Clock line for the 6 a-Clock line, which in this Dial is the line A. B.

Next, Open the Compasses, and set one foot in the Center at E. that is, where the two first lines cross each other; and with the other foot draw the Arch C. A. which in the Dial above is Figured within, with 10, 20, 30, &c

Next, with the Compasses divide the Quarter of the Circle into three parts; and then each part into three makes nine Parts; or go as you may see in the Dial before. Then begin to number in the Circle the Latitude of the Pole to 52 Degrees, and from thence draw the Style, which is the line F. E. in the Dial before.

Next, Draw the dotted line K. L. squaring the 12 a Clock line at a convenient distance from the line of 6 a-Clock, parallel thereto, which line is call'd the line of Contingence.

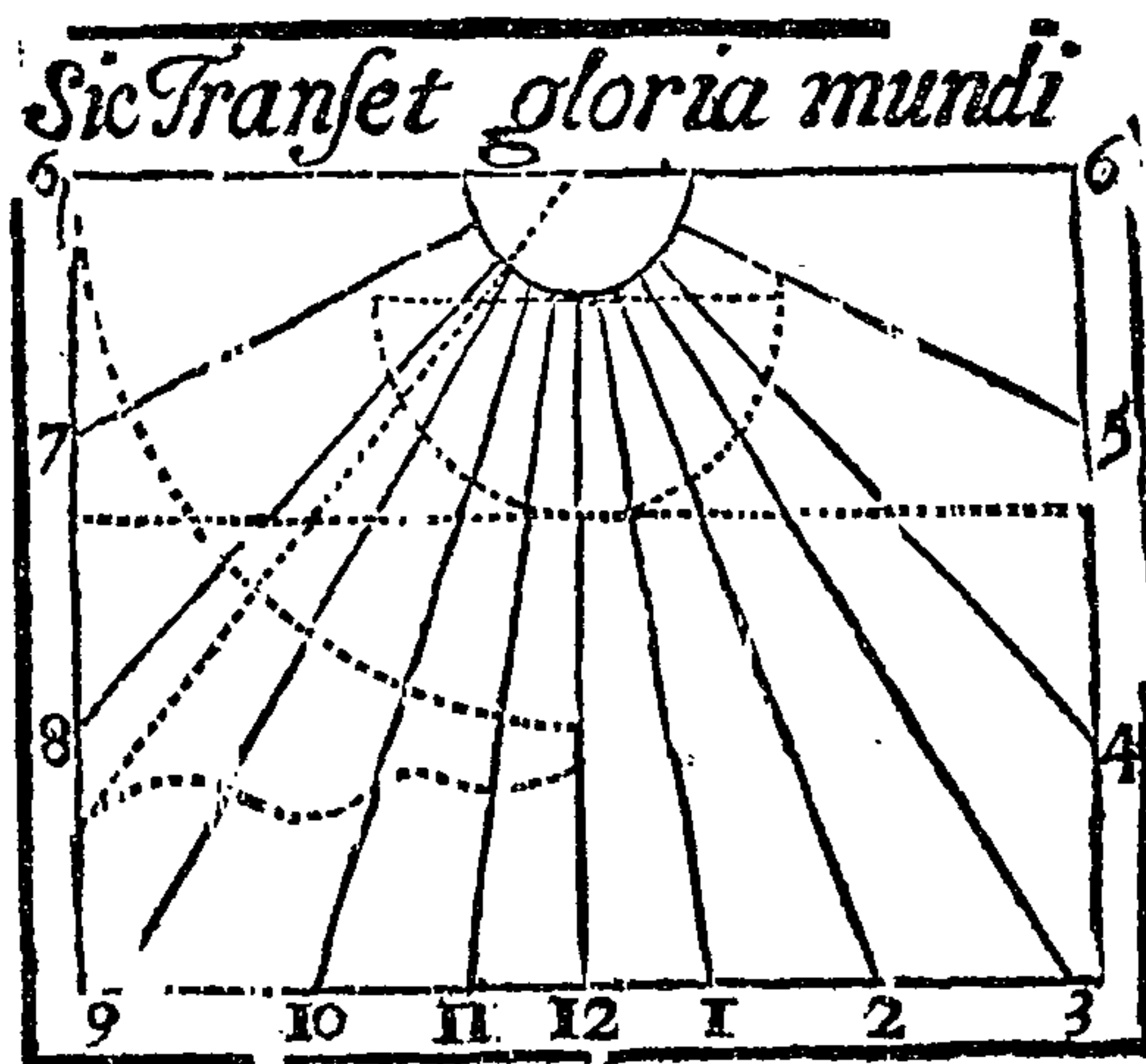
Next, Set one Foot of the Compasses in the Point O, that is where the line of Contingence cutteth the 12 a-Clock line, and take with the other Foot the nearest distance to the line F. E. or the line of the Style, and with that Extent, one Foot resting in O, extend the other Foot towards E. in the 12 a-Clock line, and draw the half Equator, or half a Circle, which in the Dial before is marked H. I. O.

Next, With the Compasses divide the half Circle into 12 equal Parts, laying a Ruler upon G. the Center of the half Circle, that is in the middle of the line H. I. and every several Mark made in the half Circle, drawing lines thro' those Marks at length,

length, and where those lines shall touch the line of contingence, there make marks.

Lastly, Lay the Ruler from the center E, on the Dial, to each mark made in the contingent line, and from thence draw the lines at length for the Hour lines. *Note*, for the Hour lines above the 6 a-clock line, extend the 7 a clock line thro' the center, and it will be for 7 at Night, &c. The line F.E. being the Edge of the Style to shade the Hour line, must be set upright on the 12 a-clock line.

To make a South Erect Dial.



THE making of this Dial differs very little from the former, as you may see by this Figure, only the Style of this Dial is to be the height of the other

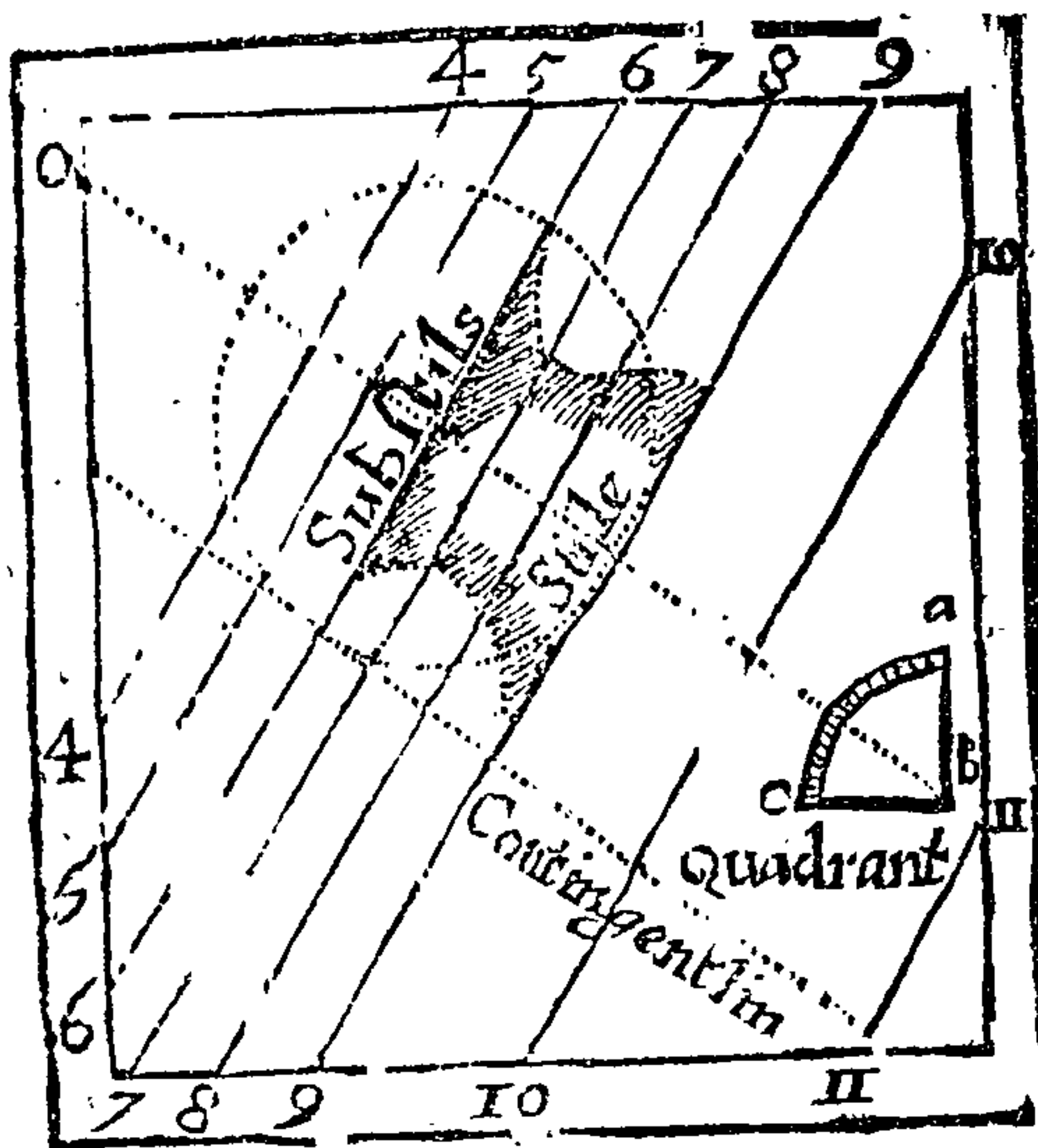
ther part of the Quadrant, as 30 D. the other being 52, or made according to the Latitude of your Habitation, and the Style of this *South* Dial, the outward Edge is a dotted line between the Hours of 8 and 6.

Not^e, That the Dial above serves for a Wall facing the *South*; but if you turn the same Dial upside down, it will serve for the *North* side of the Wall, if the line marked 7 be marked 5, and the line 8 with 4, the line 5 with 7, and the line 4 with 8, all other Hour lines in the this *North* Dial are useless, because the Sun in *England* shines on a *North* Wall, the longest day, only before 6 in the Morning, and after 6 at Night.

Or you may make a *South* Dial by this little Table, as is directed of the first Post Dial.

52 Degrees.			
D. M.		Hours,	
9	22	1	10
19	33	2	11
31	36	3	2
46	48	4	8
68	26	4	7

To make an Erect Direct East-Dial.



First, On Paper draw a Quadrant, like unto the Quadrant *a. c. b.* in this Dial but of the bigness of the Quadrant *A. C. E.* and Figure it as that in the last mentioned Post-Dial; let the side thereof, *a. b.* be upright, the Arch beholding the South, dividing the Arch into 90 parts, (as is taught) beginning to number the Elevation of the Pole at *A.* towards *C.* 52 Degrees; or according to the Latitude of your Dwelling; then lay a Ruler on the Center of the Quadrant at *B.* and to 52 Degrees, and draw a line with the Point of the Compasses, so long as your Paper will give leave, which is the line *O. B.* in this Dial. Next,

Next, draw a Circle in the line O.B. squarewise to the same (a Rule for it that follows) for the 6 a-Clock line, to place the Style on.

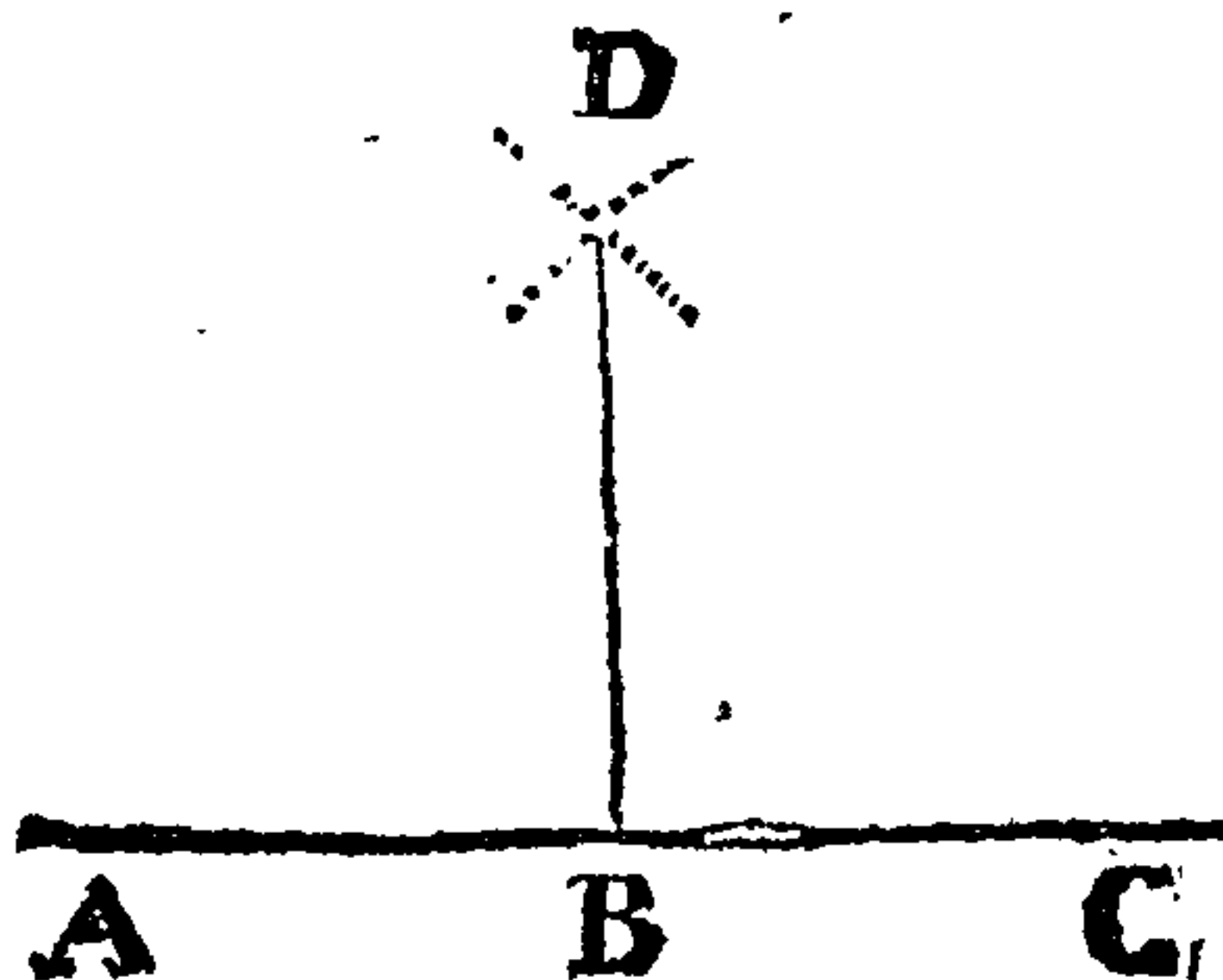
Next On the out-side of the Circle draw a Contingent line squarewise also to the 6 a-Clock line; then divide the half Circle next the contingent line into 12 equal parts; then place a Ruler upon the center of the Circle, and to each Mark severally made in the Circle, and draw lines, when the lines last drawn cutteth the line of contingence, there make Marks.

Then from the Marks made in the contingent line draw lines parallel to 6 a-Clock line, as the Figure of the Dial before sheweth.

Fix the Style upon the 6 a-Clock line, Perpendicular to the Plane, whose height is to half the breadth of the Circle, the outward Edge parallel to the Hour lines, which may be made of Brass, Laton, or Wire.

Note, Whereas this Dial serveth only to face the East; but if you desire to make a West Dial, it is but taking your East Dial already drawn upon Paper, and lay the Face thereof to a Glass Window, and draw the same lines on the back of the Paper-Dial, so you will have an East Dial on one Side, and a West Dial on the the other, having first set Figures against the Hour lines, that is instead of 11, 10, 9, 8, 7, 6, 5, 4, in the East Dial, you must set against the same lines on the West Dial, 1, 2, 3, 4, 5, 6, 7, 8, &c. Also *Note,* That you are to place no lines in these Dials, besides the Hour lines, and that if you have a Glass Window facing either to the East or West, you may paste the Face of one of them to the Glass, fixing a Wire thro' the Lead of the Style.

How to make two Lines cross each other exactly Square; which Way to prove a Carpenter's Square Ruler; or to Erect a Perpendicular Line upon another.



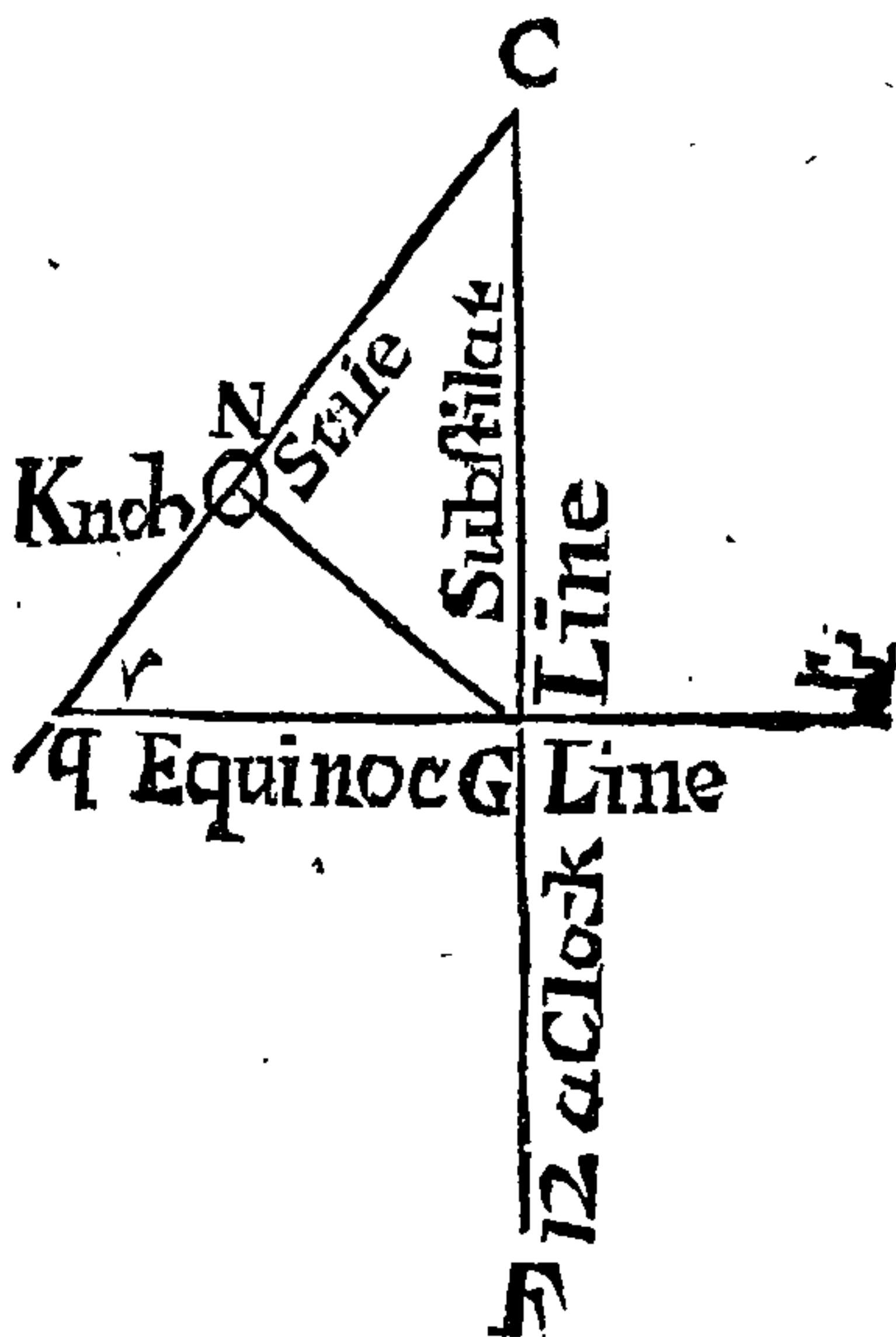
First, Let *A. B. C.* be the given line, which divided into two equal Parts with the Compasses, as at *B.* then open the Compasses at the end of the line at *C.* and draw a short Arch, as under *D.* then with that Extent, setting one Foot at *A.* cross the Arch under *D.* Lastly, Lay the Ruler upon the center, or just where the two Arches cross each other, and the middle of the given line at *B.* and draw a line to *B.* or further.

Parallel lines, or lines of equal distance, is only setting the Compasses twice upon a line, and drawing dark Arches, as a Guide to draw another line; as
the

the Figure underneath sheweth; for such lines can never meet, of what length soever they be.



How to draw the Equinoctial Line upon a South, or any other Dial that hath a Center.



First, Fix a *Nodus*, or Knob of Iron, upon the Edge of the Style, to shade the Equinoctial-line, which will be when the Sun is in *Aries* and *Libra*

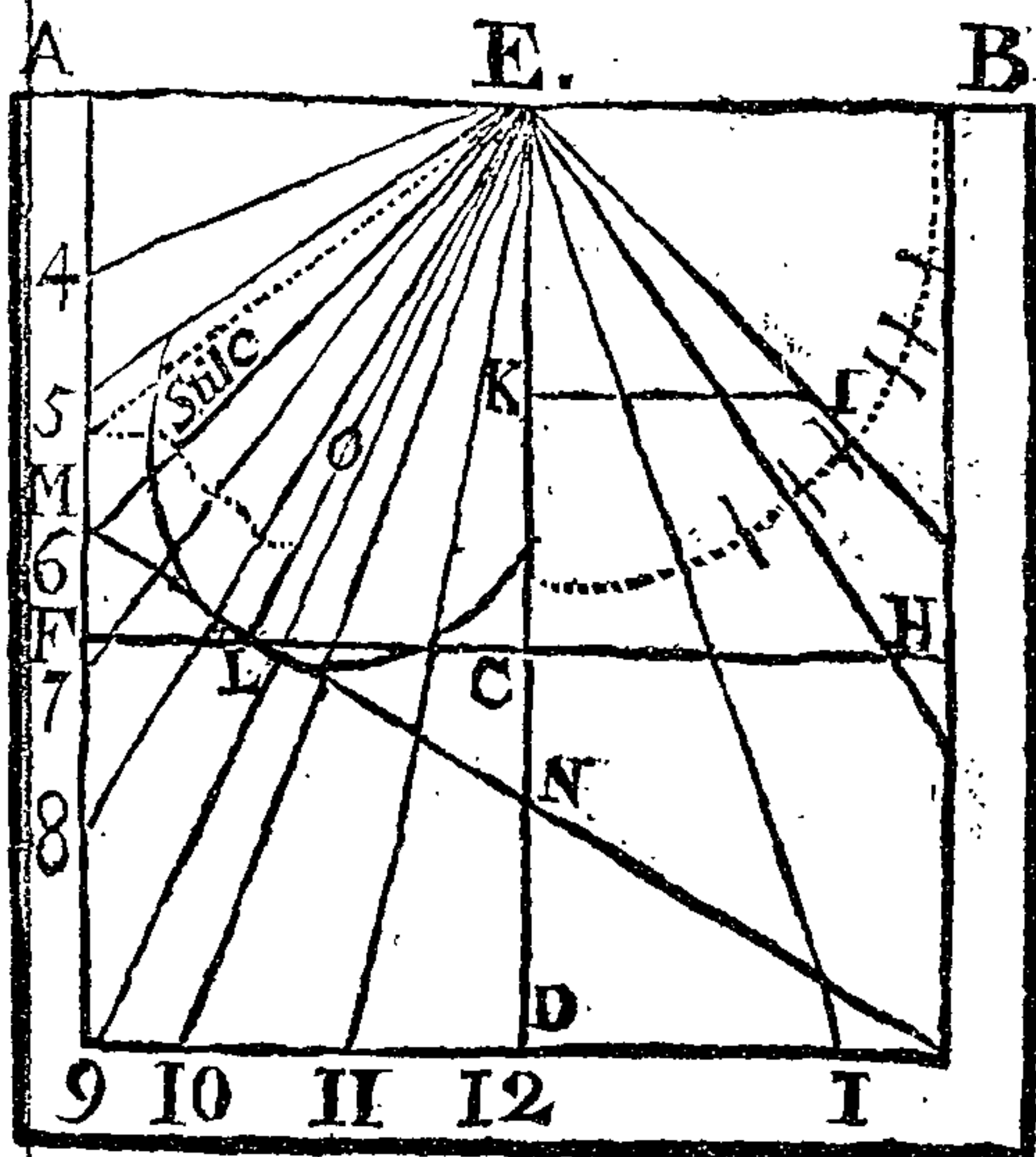
bra, that is on the 10th or 11th of March, and 12th or 13 Day of September, the Days and Nights being then equal.

Secondly, Draw upon Paper the Form of the Substyle, Style and Knob of your Dial, as the line C F, and C. *q* as in the Figure foregoing.

Then from the Knob or Point M. in the Style, let fall a Perpendicular, (by *Prop* 7.) and where it cutteth the Substyle line at the Point G. there draw the Equinoctial line square-wise to the Substyle line, at one end set *γ*, and the other *ε*.

Lastly, It is somewhat harde to draw the two Tropicks by Rule, therefore I shall not trouble the young Learner therewith. because he may (if he desires it; pace them in all Dials, by Observation in the Sun, by the shadow of the Knob makes on the Dial on the 10th or 11th of June, the Sun being then in the Tropick of *Cancer*, the Days being at the longest; and the 10th or 11th of December, the Sun being in the Tropick of *Capricorn*, the Days being at the shortest. By the same Observations you may (if you will) draw Parallels of the other Signs, at the Sun's Entrance into each Sign, as may be found in an *Almanack*.

How to make a South Eredi Declining Dial, in the Latitude of 52 Degrees, 14 Minutes Declination of the Plane, or Wall, 52 Degrees.



First, Draw the line called an *Horizontal* line marked A. B. in this Dial.

Next, Draw the line E. D. for a 12 a Clock line squarewise to the line A. B. as before directed.

Next, Draw the line F. H. parallel to the line A. B. at what distance you will: Next, upon the center F draw the Quadrant, or quarter of a Circle, E. B. C. in the Dial above.

Next,

Next, divide the quarter of the Circle into ninety Parts or Degrees, as before is taught, and number in it from C. towards B. the complement of the Poles Elevation, 37 Degrees, 46 Minutes, where make a mark, from which mark in the Arch, draw a line to the center E. which line extend to H. as in this Dial.

Again, Account in the said Arch from C. towards B. the Declination of the Wall, 52 deg and from thence draw the line I. F. as in the Dial above.

Next; Set one Foot of the Compasses in the point to the point H. that is, where the line E. H. cutteth the line F. H. the Foot resting in C. extend the other Foot to the nearest distance of the line E. I. where make a mark, and draw the line I. K. parallel to the line C. H.

Next, Take the just length of the line I. K. and place one Foot in C. and turn the other towards F. and mark the Point L. and draw the line L. E. for the Substyle, or line whereon the Style is to be fixed.

Next. Draw a line of contingence squarewise to the Substyle, in the point L. which in this Dial is the line M.L.N.

Next, Take the distance between the center E. and the point K. and place that Extent in the line of contingence; from the point L. to M. and draw the line M. E. for the Style, which in this Dial, is a dotted line

Next, Take the nearest distance between the point L. and the line of the Style, one Foot remaining in L. turn the other towards E. and make the center O. in the substylar line, upon which describe

scribe the Equinoctial Circle, or so much as may serve next the Hour lines.

Next, Lay a Ruler upon the Center O. and N. that is, just where the Line M. N. cutteth the Line E. G. D. being thus laid, make a Mark by the side of the Ruler, where the Ruler cutteth the half Circle, for there you are to begin to divide the Circle into 24 equal Parts, notwithstanding those are only in use which are next the Contingent Line.

Lastly, Lay a Ruler upon the center O, and upon the several marks, or divisions made in the Equator, or half Circle; and where the Edge of the Ruler shall then touch the line of contingence, make marks or points therein; for which points, made in the contingent line, draw lines to the center of the Dial at E. which are the Hour lines, the rest of the lines put out.

Place the Meridian line E. D. perpendicularly against the Wall, the center E. upwards; let the style or line M. E. hang directly squarewise over the substylar line, or line L. E. making an Angle equal to M. E. L. as you may see in the Dial.

Note, That if you are to make a Dial that is to decline, your own Observation will soon tell you whether it declines to the East or to the West, it being for a declining South Wall; but if you fix it on the North side the same Wall, it will serve for a North declining Dial, turning the center E. downwards, putting out some of the Hour lines.

Note also, That if you are to make a Dial that is to decline as far as 60 Degrees, draw it on a Boarded Floor, and cut off so much of the Dial

Dial next the Center as may Answer the Bigness you design it. [See Painter's Work before.]

*A Brief Description of this Map of
England.*

ON the top of the Map were it is written *North*, England is parted from *Scotland* by the River *Silway* and *Tweed*, the *British Sea* or *Channel* next *France* on the *South*, the *Sea* next *Holland* on the *East*, and the *Irish Sea*, and part of *Ireland* on the *West*.

The *Principality of Wales* is included in *England*, lying on that side next *Ireland*, containing 12 *Shires* or *Counties*, as *Montgomery*, *Radnor*, *Denbeigh*, *Pembrook*, *Cardigan*, *Flint*, *Carmarthen*, *Brecknock*, *Merioneth*, *Glamorgan*, *Carnarvonshire*, and *Anglesey*.

England is in length from *North* to *South*, as from *Berwick* to *Portsmouth*, about 320 Miles, and in breadth from *East* to *West*, as from *Dover* to the *Lands-End* in *Cornwall*, 270 Miles. It's said not to exceed in bigness one third part of *France*, yet it is reckoned 30 Millions of Acres.

England is Situate between the Degrees of 16 and 22 Longitude, equal with *Stotland*, *Normandy*, and *Britain* in *France*.

And between 50 and 52 Degrees of the Northern Latitude, equal with *Ireland*, *Flanders*, *Holland*, *Zealand*, *Lower-Saxony*, and *Denmark*.

LONDON, 'tis said is distant from Dublin in Ireland, 250 Miles. Edinburgh in Scotland 270. Paris in France, 208. Amsterdam in Holland, 210. Copenhagen in Denmark 580. Vienna in Germany, 730. Madrid in Spain, 760. Cracow in Poland, 830. Rome 840. Stockholm in Sweden, 880. Lisbon in Portugal. 920 From Constantinople and Muscov, 1570 Miles from LONDON, the chief City in England.

E N G L A N D.

Situated { betw { d. m. } of L. } its great { Leng. fr. N. to S. }
 { betw { 12 00 } { 20 00 } { 50 00 } { 55 50 } { of L. } { is about 320 Miles. }
 { is about 290 Miles. }

being divided into Six Circuits, viz. { Western } { Oxford } { Home } { Norfolk } { Midland } { North } { Chief Towns. } { Salisbury. }
 { Oxford. }
 { Canterbury. }
 { Norwich. }
 { Lincoln. }
 { York. }

Western Circuit contains { Cornwall. }
 { Devon. }
 { Dorsetshire. }
 { Hampshire. }
 { Somerset. }
 { Wiltshire. }

Oxford Circuit contains. { Berkshire. }
 { Oxfordshire. }
 { Gloucestershire }
 { Monmouthshire }
 { Herefordshire. }
 { Worcestershire }
 { Staffordshire. }
 { Shropshire. }
 Chief Towns. { Reading. }
 { Oxford. }
 { Gloucester. }
 { Monmouth. }
 { Hereford. }
 { Worcester. }
 { Stafford. }
 { Shrewsbury. }

Home Circuit contains. { Essex. }
 { Hartfordshire. }
 { Kent. }
 { Surry. }
 { Suffex. }
 { Colchester. }
 { Hartford. }
 { Canterbury. }
 { Southwark. }
 { Chichester. }

Norfolk

Norfolk Circuit	contains.	Norfolk. Suffolk. Cambridgshire. Huntingdonshire. Bedfordshire. Buckinghamshire.		Norwich. Ipswich. Cambridge. Huntingdon. Bedford. Buckingham.
Midland Circuit	contains	Lincolnshire. Nottinghamshire. Derbyshire. Rutlandshire. Leicestershire. Warwickshire. Northamptonshire.	Chief Towns	Lincoln. Nottingham. Derby. Okeham. Leicester. Warwick. Northampton.
North Circuit	contains	Yorkshire. Durham. Northumberland. Lancashire. Westmoreland. Cumberland.		York. Durham. New Castle. Lancaster. Appleby. Carlisle.

Middlesex and *Cheshire*, are not commonly reduced to any of these Circuits ; the first, because of its near neighbourhood to *London*, and the other as being a County Palatine, having its own Judges and Counsellors peculiar to it self.

England is bounded on the East by part of the *German Ocean* ; on the West by *St. George's Channel* ; on the North by *Scotland* ; and on the South by the *English Channel*. The Air of this Country is Mild, Sweet and Temperate, not Piercing cold in Winter, nor Scorching in Summer. The longest Day in the Northmost Parts is about

bout seventeen Hours and halt, the shortest in the Southmost is almost eight Hours; and the Nighes proportionably. The chief Commodities are Corn, Cattle, Tin, Copper, Lead, Iron, Timber, Coals, Wool, Cloth, Stuffs, Linnen, Hides, Tallow, Butter, Cheese and Beer, &c.

The Rarities of this Country are (1) the abundance of Medicinal Waters; whether for bathing, as those especially in *Somersetshire*; or Purging, particularly those of the Spaws in *Yorkshire*; *Tunbridge* in *Kent*, *Ebisham*, and *Dulledge* in *Surry*; *Northall*, *Acton* and *Islington* in *Middlesex*. Here are also many other remarkable Springs, whereof some abound with Salt, as that at *Durtwich* in *Worcestershire*; or Sulphur, as the famous Well at *Wiggin* in *Lancashire*; or Bituminous or Pi-chy matter, as that at *Pitchford* in *Shropshire*. Others have a petryfying quality, as particularly that near *Lutterworth*; and the remarkable dropping Well in the West riding of *Yorkshire*. And Lastly, some Ebb and Flow, commonly in a very irregular manner, as those in *Peak-Forest* in *Derbyshire*, and *Lay-Well* near *Torbay*; whose Waters rise and fall several times in an Hour. To these we may add that extraordinary Fountain near *Richard's Castle* in *Herefordshire*, commonly called *Bone Well*, which is alway full of small Bones, either of Frog or Fish, though frequently emptied and cleared of them.

Near *Wiggin* in *Lancashire*, is a remarkable Well, which being emptied, there presently breaks out a Sulphurous Vapour, which makes the Water bubble up as if it boil'd, and a Candle being put thereto it, instantly catches Fire, and burns like Brandy; during a Calm, the Flame will continue a whole Day, and by it's Heat they can boil Eggs, Meat, &c. and yet the Water itself is cold. (2) In *Whinfield* in *West-mordland*,

moreland, is the *Three Brother Tree*, so call'd, because there were three of them (the least whereof is this) which a good way from the Root, is thirteen Yards and a half round. (3) In *Derbyshire* is the famous *Peak*, and some hideous Cavities, as those call'd *Pool's hole*, *Elden hole* and one more, which is known by the indecent Name of the *Devil's-Arse*. Near it is a Spring, remarkable for consisting of both hot and cold Water, so joined in the same stream, that a Man may at once put his Finger and Thumb of the same Hand in the hot and the other in the cold. Lastly, in the County of *Surry* is the River *Mole*, which loseth itself under Ground, and ariseth at some considerable distance; as doth also *Reeall*, in the North riding of *Yorkshire*. The Archbishopsricks are two, those of *Canterbury* and *York*. The Bishopsricks including *Wales* are those of

<i>London.</i>	<i>St. Asaph.</i>
<i>Durham.</i>	<i>St. Davids.</i>
<i>Winchester.</i>	<i>Peterborough.</i>
<i>Bath and Wells.</i>	<i>Landats.</i>
<i>Oxford.</i>	<i>Carlisle.</i>
<i>Bangor.</i>	<i>Exeter.</i>
<i>Rocheſter.</i>	<i>Cheſter.</i>
<i>Ely.</i>	<i>Bristol.</i>
<i>Chicheſter.</i>	<i>Norwich.</i>
<i>Salisbury.</i>	<i>Glouceſter.</i>
<i>Worceſter.</i>	<i>Hereford.</i>
<i>Lincoln.</i>	<i>Litchfield and Coventry.</i>

In point of Precedency, after the two Arch-Bishops, followeth the Bishop of *London*, next to him the Bishop of *Durham*, 3dly, the Bishop of *Winchester*, and then all the rest according to the Seniority of their Consecration.

The Universities are *Oxford* and *Cambridge*, which for stately Buildings, rich Endowments, large Privileges, as also number of Students, Libraries, and learned Men, exceed all *Europe*. The Names of the Colledges and Halls in Each, are as followeth,

In *Oxford* are .

<i>University.</i>	<i>Magdalen.</i>
<i>Baliol.</i>	<i>Brazen Nose.</i>
<i>Merton.</i>	<i>Corpus Christi.</i>
<i>Oriel.</i>	<i>Christ Colledge.</i>
<i>Exeter.</i>	<i>Trinity.</i>
<i>Queen's.</i>	<i>St. John's.</i>
<i>New-Colledge.</i>	<i>Jesus.</i>
<i>Lincoln</i>	<i>Wadham,</i>
<i>All-Souls.</i>	<i>Perbroke.</i>

The Halls are, 7.

<i>Gloucester.</i>	<i>Alban.</i>
<i>St. Edmund.</i>	<i>St. Mary.</i>
<i>Magdalen.</i>	<i>New Inn.</i>
<i>Hart.</i>	

In *Cambridge* are

<i>Peter-house.</i>	<i>Trinity Hall.</i>
<i>Geare Hall.</i>	<i>Gonvil and Caius.</i>
<i>Bennet or Corpus Christi</i>	<i>King's-Colledge.</i>
<i>Fenbroke Hall.</i>	<i>Queen's-Colledge.</i>

Catherine Hall.
Jesus-Colledge.
Christs-Colledge.
Magdalen-Colledge.

Trinity Colledge.
Emanuel.
Sidney-Sussex.

The Kingdom of *England* is a Famous Antient and Hereditary Monarchy : A Monarchy that affords very much to the Industry, Liberty and Happiness of the Subject, and reserves enough for the Majesty and Perogative of the King, who is willing to own his People as Subjects, and not as Slaves. The Supream Court or Judicature is the *High Court of Parliament*. The Inferior Courts are the *King's-Bench*, the *Court of Common Pleas*, the *High Court of Chancery*, the *Exchequer*, and the *Court of the Dutchy of Lancaster*, &c. As also the *Ecclesiastical Courts* in Subordination to the *Arch-Bishop of Canterbury*; besides these various Courts, the King, consulting the ease, safety and welfare of the Subject, administers Justice by his Judges, and that in their Yearly Circuits thro' the Kingdom; and, for the better governing and keeping the Peace in particular Counties, Hundreds, Cities, Boroughs, and Villages, County's have their respective Lords Lieutenants, Sheriffs, and Justices of the Peace; Hundreds, their Bailiffs, High-Constables, and Petty-Constables: Cities, their Mayor, Alderman. Sheriffs, &c. Boroughs and Towns incorporate, have either a Mayer or two Bailiffs, or Port-Reeve, who, in Power, are the same with Mayor and Sheriffs, and, during their Offices, are Justices of the Peace within their own Liberties.

And lastly, Villages are in subjection to the Lord of the Mannour, under whom is the Constable or

Headborough to keep the Peace, apprehend Offenders, and bring them before the Justice.

The Inhabitants of this Country are (or the most part) of the true *Reform'd Religion* publickly profes'd, and carefully taught in its choicest Purity. In the *Reformation*, they were not so hurry'd by popular Fury and Faction, (as in other Nations) but proceeded in a more prudent, regular and *Christian* Method; resolving to separate no farther from the *Church of Rome*, then she had sepatated from the Truth, embracing that excellent Advice of the Prophet (Jer. 6. 16.) *Stand ye in the ways and see, and ask for the old Paths, where is the good way, and walk therein.* So that the *Reform'd Church of England*, is a middle way between these two extremes, *Superstition* and *Phanaticism*, both equally to be avoided.) The Doctrine of which Church thus refin'd, is briefly sum'd up in the 39 *Articles*, and the Book of *Homily's*; and her discipline and worship are to be seen in the *Common Prayer*, and Book of *Cannons*. All which being seriously weighed and considered by a judicious and unprejudic'd Mind, it may be confess'd that this *National Church* is for certain, the most exact of all the *Reform'd Churches*, and comes nearest to the *Primitive Pattern* of any in the *Christian* World. For her Doctrine is entirely built upon the Prophets and Apostles; her *Liturgy* is a notable extract of the best of the *Primitive Forms*; her Ceremonies are few in Number, but such as tend to Decency and true Devotion. At present all Sects and Parties are tolerated and encouraged; and its truly as Melancholy to consider, as difficult to determine, whether our heats and divisions on one Hand, or open Popanefs and Irreligion on the other, be most prevailing. In the mean

mean time. This is most certain, that they are both equally to be lamented; the necessary consequence of both, being highly pernicious and dangerous in the end. But that it may please the Almighty to grant to all Nations Unity, Peace, and Concord; to bring into the way of Truth all such as have erred, and are deceived; to strengthen such as do stand; and to comfort and help the weak-hearted; to raise up them that fall; and finally to beat down Satan under our Feet, is the daily and fervent Prayer of the Church of Christ, and the hearty Wish and Desire of every true Son thereof.

Of T R A F F I C K.

THE Antiquity of *Traffick* appears by Holy Writ; and the great Use and Benefit that doth accrue by it, is generall known; for what Nation or City is more rich or flourishing, than those who enjoy the greatest Commerce? Amongst which, *England* may be esteemed in the first Rank.

Besides many rich, Potent and flourishing Cities have been ruined, and like a Widow left desolate, when they have lost their Commerce with other Nations. Therefore a Merchant, as one wisely saith, ought to be such an one as is always busy, and employing himself in buying, selling and bartering of Commodities, as well in Foreign Countries, as here at Home, and by employ of Factors for the negotiating his Affairs; he ought to be just in his Dealings, without Fraud, and no Extortioner, to have Experience in the *Mathematicks*, especially in *Arithmetick*, for the better-methodizing and keeping his Accounts; in *Pythometria*, or *Gauging*; for the

understanding the Measures of all sorts of Vessels : in *Geography*, for the Knowledge of the Situation of Countries, Isles, Cities and Ports, what Commodities they produce, &c. To be expert in Naval Affairs, for the better avoiding of Injuries and Wrongs; to have insight in the valuation and worth of Coins, Weights and Measures of all Countries, especially in those where he driveth a Trade, and not altogether to build his Faith upon the Honesty of his Factor or Correspondent. The like is to be observed in the Customs, Subsidies, Tributes, Tells, &c. of each Country, which are payable upon every particular Commodity, both imported and exported, which elsewhere will be more conveniently treated of; But to the Design itself.

Traffick then is the Bartering, Bargaining, or Exchanging of one Man with another; and by giving to one so much of one Commodity or thing, to have of the other so much of the same Value, of a different Commodity; which is effected by Number, Weight and Measure.

By *Bartering*, is meant Goods for Goods.

By *Bargaining*, is understood Money for Goods; And,

By *Exchanging*, Money for Money.

Yet oftentimes the Trade of a Merchant is more various; for sometimes he buys and Sells his Commodities for part Money, and part Time; and sometimes for part Goods, and part Money, Payable by Bills of Exchange, or by Bill of Assignment, at such a Day, and sometimes by Bill of Exchange only they receive satisfaction for the Goods.

Traffick is upheld in several sorts of Cities and Towns, as well by those that have not their Situation on the Sea-shore, or great Rivers, as by those
Cities

Cities that have. Yet those Cities that have not the full Benefit, have some place to which they send their Goods, which is Situate as aforesaid; as the Sea-port of *Aleppo*, is *Alexandria*, or *Scanderoon*; to which place they convey their Commodities upon Camels, Asses, and Negroes, or the like. Again there are other Places which do maintain Trade different from the former; and that is, by some Manuel Arts or Fabricks, as doth *Normich* in *England*; *Florence* in *Italy*, *Rouen* in *Normandy*, *Noremburgh* in *Germany*, &c. Also other Places have a great Trade by reason of the necessary Commodities they produce; as *Silvan* in *Persia* for its Raw silk; *Smyrna* for its Cottons, *Bordeaux* for its *Gascain* Wines, *Ivisa* for its Salt, *Zant* for its Currants, &c.

What makes a Compleat City.

To make a compleat City, there are required six Principle Things or Parts, for the Support thereof; without which it cannot stand: to w^t,

First, Husbandmen and Artificers, to provide Food and Raiment for its Inhabitants.

Secondly, Arms and Ammunition for its Defence.

Thirdly, The Priesthood, for the performing the Worship of God.

Fourthly, Judges and Councillors, &c, for the Administration of Justice.

Fifthly, Riches for its management of Private and Publick affairs.

sixthly, and lastly, To make it compleat, Traffick which, except Religion and Law, oft times Supplies the Place of all the rest.

Also there are five particular Places in all Cities and Towns of Commerce, which have only a dependency on Traffick. viz. 1. The Exchange 2. The Custom-house. 3. The Publick Beam. 4. The Magazines, or Warehouses. 5. The Place where by consent of the Magistrates the Measures, as well Liquid as Dry, are kept for the deciding of Differences.

In Bargaining and Bartering of Commodities, these following Rules are to be observed:

First, What to Bargain for; and by this is meant the Goodness, Valuation, Quality, &c. of the Commodity.

Secondly, How to Bargain; By which is understood the knowledge of Weights and Measures, whereby they are sold.

Thirdly, When to Bargain; By which is understood the best and fittest Season; which is of great use and very needful to be duly heeded.

Fourthly, With whom to Bargain; And by this is meant the Knowledge of the Party, or Seller, or Buyer.

Of Coins, Weights, and Measures

Coins, Weights, and Measures are of such necessary use in Commerce, that it is almost impossible for any Merchant to Traffick in Foreign Countries, without a true knowledge and insight therein. And this is something difficult; by reason that in all Countries, nay in most Cities, their Coins, *Weights*, and *Measures*, are found to differ one from another, not only in respect of their Names, but also of their Valuation, Weight and Measure.

Note, therefore, That all Coins or Money, are valued according to the real goodness of the Metal; those of Gold and Silver are the chief; then those of Copper, Lead, &c. The Weights are likewise various, and many times differing according to the Commodity which is properly weighed by it: As in *Aleppo*, some are weighed by the Rotolo of 680 Drachms; some by that of 700, and others by that of 720 Drachms: Also in *England* Raw Silk is weighed by the Pound of 24 Ounces; whereas others are weighed by the Pound of 16 Ounces, as that of *Averdupois*; and 12, as that of *Troy Weight*. Again, They are found to vary in respect of their greatness; some being weighed by Hundreds, some by Sentiners, Quintles, Talents, Thousands, Cahars, Weighs, Rouës, Stones, Shiponds, Lisponds, Candils, Charges, Peculs, and such like. There also are reduced into lesser Weights, as Quarters, Pounds, Maunds, Bateman's, Wesno's, Rotolo's, Sears, Mirias, Catees, Loderöes, Crotes, Oaks, and the like. Again, there are yet a lesser sort, which are made out of the former; as Ounces; whereof 12, 14, 16, 20, 24, and 30. do according to the Custom of the Place, make a Pound Weight; and these are reduced into Drachms, Scruples, Obolots, Carats and Grains, so that the greatest do contain the lesser parts. Thus may be seen how great the variety of Weights are.

The like is also in Measures, as in *London*, the Yard is used for Silks, Woollen Cloth, &c. The Ell for Linnen Cloth, &c. and the Goad for Frizes, Cotton, and the like, which in several other Countries is also observed; only giving diversity of Names to their Measures; as the Yard, Ell, Goad, Fathom, Cane, Aune, Brace, Pico, Stick, Palm, Vase,

Vare Covado, &c. And because the Merchants found it defective, for the more perfection they invented the Art of *Concave Measures*, serving for all Liquid and dry Commodities, as for Wines, Oyls, &c. as also for Grain, Rice, and the like.

Of Exchange.

Exchange of Money is of great Antiquity, and is esteemed exceedingly commodious, excellently useful and beneficial, as well to Kingdoms and Cities in general, as to Merchants and others in particular. And as Money was first invented to be made of the best Metals, for the avoiding of chargeable and troublesome carriage, and Transportation of Commodities from one Place to another in way of Trade; so was *Exchange of Money* first invented for the avoiding as well the danger, as the trouble and charge in the carriage of Money from Place to Place; and by reason that the Standards, Stamps, and Subscriptions of Moneys are found to be various and different (no Nation making use of others Coin) Merchants were forc'd for the better performance and carrying on this excellent Invention, to appoint a certain Exchange, by giving Value for Value, according to the fineness or coarseness of the Coins, with certain allowance to the Merchant exchanging.

Seeing then that Exchanges are of such great use and importance, the Merchant ought to have great insight and knowledge in the Coins of Foreign Countries, that he may be able to reduce one Coin into the valuation of another, by raising or abating according to the Goodness or Badness of the Metals; that when he hath occasion to draw a Bill of Exchange

change upon one of 100*l.* here at *London*, to be paid in *France*, *Holland*, or elsewhere, he may know the Loss or Gain.

The true Exchange for Moneys by Bills of Exchange, is really grounded on the Valuation, Fineness and Weight of the Money of every Country according to the Par, that is, Value for Value, and on this are the Exchanges of *England* grounded.

Exchanges are made by Bills, when Money is delivered simply here in *England*, the Bills received for the same to have the Payment in some other Country beyond the Seas, for Goods here bought, or the like, at a certain Price agreed upon: The like is observed beyond the Seas, and the Money received here in *England*.

The meaning of a Bill of Exchange, is thus to be understood; Suppose two Merchants have correspondence and dealing together, the one here in *England*, and the other in *France*, the Merchant in *France* having bought Goods of a Man to the Value of 500 or 1000 *l.* the Man being come to *England*, comes to the Merchant for his Money, who being perhaps not provided, or otherwise the Man desirous to have his Money paid in *England*; the Merchant upon these or the like considerations, draws a Bill of Exchange for the said Sum upon his Correspondent here in *England* (who perhaps is indebted to him in greater Sums) to be Paid upon Sight, or within such a Time after Sight, either upon Usance, or double or treble Usance, as they agree. To be explain'd, that is two or three Months.

Again, sometimes Gentlemen or others having occasion to Travel beyond Seas, for their Convenience

nience Pay their Money to a Merchant here at London, desiring him to draw a Bill of Exchange for the same upon his Factor, or some Merchant with whom he hath correspondence, at the Place where the Gentleman do design his their Journey; which Bill is ordered to be paid aforesaid.

The Form of a Bill of Exchange from London to Amsterdam, and the Contrary.

Laws Deo adj. June 10. 1683. in London, for 600l. at 34s. 6d.

At Usance. Pay by this my first Bill of Exchange, unto A. B, the Sum of six Hundred Pounds Sterling, at Thirty Four Shillings and 6d. Flemish, for every Pound Sterling current Money in Merchandize; for the Value hereof Received by me C.D. and put it to Account as per Advice.

A. Dis. G. M.

On the Backside Indorsed,
To my Loving Friend W.G.
Merchant at Amsterdam;
Pa.

This is the Form of a Bill of Exchange for Money delivered and taken up at London for Amsterdam.

The Second Bill doth alter in the Additions of these Words only.

At Usance. Not having paid by my first Bill Pay by this my Second Bill, &c. And so in the Third; for there are commonly three Bills made of the same Nature.

Laws

Laws Deo. adj. August 20. 1683. in *Amsterdam*,
200*l.* at 33*s.* 6*d.*

At Usance. Pay this my first of Bill of Exchange unto
W. M. the Sum of 200*l.* of Lawful Money of England,
for the Value here by me Received of *J. K.* make
him good Payment, and put it to your Accompt.
God keep you.

Subscribed *W. G.*

On the backside Indersed,
To my Loving Friend
Mr. G. M. Merchant at
London. Pa.

This is the Form of Bills of Exchange. The
time of Payment may be made upon Sight, or with-
in so many days after sight, or upon double or tre-
ble *Usance*; that is two or three Months; also you
may say, *Put it to the Accompt of such a Man*: But
the best is to refer it to the *Letter of Advice*, and
where the first Bill is noted *Pa.* the Second must be
2 *a.* and the 3. *a.* Neither is it good to say *I would in-*
treat you, or, *be Pleased to pay this Bill,* tho' the Ser-
vant or Factor draws a Bill on his Master. And if
shall happen (as oft-times it doth) that thro' default,
the Money is not paid according to the limited time,
or the Bill not accepted, then and in such cases, there
is a Protestation made by some *Publick Notary*, or the
upon the Bill for the Non-payment or Non-accep-
tance thereof; and this is esteemed much to the dis-
reputation of the Party so denying the same.

Abundance of other Rules and Orders are observed
about the Acceptance and Non-Acceptance of Bills
of

of Exchange, which are handed at large in a Book called *Lex Mercatoria*.

Of Merchants and the several Companies thereof, as they are now Incorporated, with the several Commodities, which they Export or Import.

It is Foreign Trade that is the main Sheet Anchor of us Islanders, without which the Genius of all our useful Studies which renders Men famous and renowned, would make them useless and insignificant to the publick: When Men has fathomed the bottom of all knowledge what is it if not reduc'd to practice, other than empty Notion? If the Inhabitants of this Island were learned in all the Languages, the rising and setting of the Sun, did know and understand the Situation of all Places, Ports, and Countries, and the Nature of all Merchandize and Commodities, were acquainted with the Order and Motion of all the Stars, knew how to take the Latitude and Longitude, and were perfectly vers'd in the Art of Navigation, to what purpose would all be, if there were no Foreign Trade? We should have no Ships to Navigate to those Countries, nor occasion to make use of those Languages nor to make use of those Commodities; what would this Island be without Foreign Trade, but a Place of confinement to the Inhabitants? It's Foreign Trade that renders us rich honourable and great, that gives us a Name and Esteem in the World, that makes us Masters of the Treasures of other Nations and Countries, and begets and maintains our Ships and Sea-men, the Walls and Forts
works

warks of our Conntry ; and were it not for Foreign-Trade, what would become of Revenue (as one hath ingeniously observed) from 6 to 800000 Pounds *per Annum* for Custom.

To give you therefore a brief survey of the Traffick of this Land (or rather of the City of *London*) take a view thereof as it is managed by these severa. Companies of Merchants now incorporated in the City of *London*; which (together with the Goods by them exported or imported) are as followeth.

The most ancient of ~~these~~ Companies is that of *Merchants Adventurers of England*, who were in the Reign of King *Edward* the first, Anno 1296. They obtained Priviledges of *John* the Second Duke of *Brabant*, to establiish themselves and their Trade, under Government in the City of *Antwerp* for those Countries. And King *Edward* the third, finding them so settled, and observing the great Trade in *Flanders* by the entrapping of the *English* Wools there, did (when he joyned in League with the *Flemings* against the King of *France*) encourage the *English* Merchants in those Parts to deal with Clothiers of that Nation, to come over into *England*, and here to erect their Looms and Manufactures, which accordingly was performed, and took such effect, that the said King by the Advice of his Parliament, first prohibited the Exportation of Wool, next by Priviledges, and Act of Parliament invited Cloth-makers and Workers, over into *England*, and at last so prevailed, that he prohibited all Foreign Cloth to be imported into this Realm,

Afterwards King *Henry* the fourth, Anno 1406, taking notice of the Service of this Company in
the

the rise and increase of the Manufacture of Clothing and the benefit of the Government of the said Company, did establish the same by Grant under the great Seal, which said Grant hath been confirmed, and enlarged by all his Successors; except *Edward* the sixth. And *Queen Elizabeth*, in the sixth Year of her Reign, she being fallen in breach with *Philip* the second, King of *Spain*. Lord of the *Netherlands*, did for the issuing and vent of the Clothing of this Land, which daily increased, and under her Great Seal, all the Parts of *Germany*, unto those of the *Netherlands*, authorized the said Fellowship, to treat with the Princes, Potentates, States and Cities of *Germany*, for a Staple or Residence, and Privileges as they enjoyed in the *Netherlands*, which so happily succeeded, as that the Clothing found Ample vent; first in *Embsen*, then in *Hamburgh*, afterwards in *Stade*, and then again in *Hamburgh*, where it continues; and now the said Fellowship have two Marts, the one in *Dordreck* for the *Netherlands*, and the other in *Hamburgh* for all *Germany*; which last is the Head and chief Court of all the said Fellowship, residing both in *England* and beyond the Seas, and through their Integrity, fair Dealings, and excellent Laws and Customs observed and preserved amongst them, they are of no little Splendor in the Eyes of Men; which said Company is now much enlarged, all new Draperies being therein comprized.

The Commodities which this Company exporteth are Cloths drest and dyed of *Devonshire*, *Gloucester*, *Somerset*, *Kent*, &c. in great quantities, also Lead, Tin, Oyls, Silks, Worsted, Woollen Stockings, Hats, Silks, Fruits, Spanish Wines, &c, for which, to the great enriching of the Nation, they import Linnen Cloth

Cloth, as Cambricks, Hollands, Lawns, Diapers, &c. In great quantities also Tapestries, Rhenish-Wines, Mather, Hops, Latten, Blades, Scap, Wire, Plies, Copper, Brass, Steel, Iron, Quicksilver, Arms. Gun-powder, Flax, Hemp, Allom, Wax, Mineral-Salt.

The next is the Fellowship of the *English* Merchants for discovery of new Trades, commonly called the *Musfory Company*: Who were first incorporated in the beginning of the Reign of King *Philip*, and Queen *Mary*, upon the discovery of Isles, Lands, Territories, and Signiories by Seas lying Northwards, North-eastwards, and Northwestwards from *England*: And was afterwards confirmed by and an Act of Parliament, in the 8th of Queen *Elizabeth*, and have by their charter several Immunities and Privileges granted them; as to raise Arms for the subduing of Countries, in the limits aforesaid, and to enter thereon, and set up *English* Standards,

The Commodities they export, are Woollen Cloths of all sorts, both dyed and drest'd; Kersters, Cottons, Bays, Perpetuanees, Fustians, and Norwich Stuffs, proportionably dyed and drest'd; Lead, Tin, Pewter, wrought Allum, and Copper, Thread and Lacc, also much defected Wines and Fruit, not fit to be spent in this Nation, together with most sorts of *English* Commodities, for which they import Pot-ashes, Tarr, Cordage, Cable-Yarn, Tallow, Wax, Red-hides, Buff-hides, Cow-hides in the Hair; Goat-Skins undrest, Cordevants, Tanned-hides, Hogs-Bristles Raw-Silks, Corn, Linseed, Ilinglass, Slood, Beaver-Wool, and Wombs, several sorts of Rich Furs, Seal Skins, Rhubarb, Castorum

Castorum, Agaric, with several other Drugs, Train Oyl, Flax, Hemp, coarse and fine Linnen, Caviare, and Salmon, Stock-fish, Cod fish, Bacon, Pork, Beef, with other Provisions.

The next is the *Levant or Turkey Company* of Merchants, which by their discovery, made their first Trade into the Signorie of *Venice*, and then into the Dominions of the Grand Seignor. and including the Trade of the *East-Indies*. which as then was undiscovered to us by Sea, (but the *Portugals* knew it) their Goods being brought upon Camels, *Asses*, or the like to *Aleppo*; and other Part of *Turkey*: But since, through our knowledge in Maritime Affairs, the *East-Indies* are found out by Sea, there being a great, rich, and eminent Company Incorporated, called the *East-India-Company*, which doth somewhat Eclipse the Trade of this Noble Company. so that instead of having the *Indian Commodities* in *Turkey* we furnish them with the same, better cheap than they can have them, being brought by Land, nevertheless this worthy Fellowship of Merchants, doth maintain a great Trade, exporting at least 30000 Broad Cloaths Yearly: They were first Incorporated in the Reign of Queen *Elizabeth*, and since confirmed by her Successors. Their Factories are kept at *Smirna*, *Aleppo*, *Constantinople*, &c.

The Commodities that are exported from hence by them, are Cloths, both dyed and prest, Kerfies, Lead, Tin, Iron, Steel, Wire, Pewter, Furs, Pieces of Eight, Sugar, Hides, Elephants Teeth, *Brazile*, also several *Indian Commodities*, as Spices, *Calli-coe*, *Indico*, *Cocheneal*, Red and White Lead, &c.

For

For which they import the Raw Silks of *Persia*, *Damascus* and *Tripoli*, also Camblets, Grograms, Grogram Yarn, Mohairs of *Angor*, Wools, Cottons, Cotton yarn of *Smirna* and *Cyprus*, Galls of *Mosolo*, and *Toccat*,; the Currants and Oyls of *Zant*, *Zefalonia*, *Morea*, &c. the Drugs of *Ægypt*, and *Arabia*, also Turkish Carpets, Corde-Box-wood, Rhubarb, Wormseed, Senna, Cumin-Seed, together with several rich Commodities which we receive in return of ours,

The next is the *East-India Company*, which was first incorporated in the Reign of Queen *Eliz.* and hath since been confirmed; as also several other Privileges, and Immunities added to their Charter, by all their Succeeding Kings, so that now they have as ample Privileges as any Corporation or Company of Marchants whatsoever. This Company are found very Beneficial to this Nation by the great Trade they drive, in the Exporting and Importing so many and great Quantities of rich Commodities having the Trade of *India*, *Persia*, and *Arabia*.

The Commodities which are exported from hence by them are Pieces of eight, Dollars, Broad-Coaths, Perpetunae, Powder, Lead, Amber, Looking-Glasse, Cifers, Knives, Beads, Bracelets, Feathers, Coral, Quicksilver, Vermillion, Allum, Brimstone, &c. For which they Import all sorts of Spices, also Cotton, Yarn Calicoes, Pintadoes of divers sorts; among which, some are excellent Tamerinds, Sanders, Spikenard, Bezoar-stone, Aloes, Myrrh, Rhubarb, Opium, Frankinsense, Cassia, Borax, Camu, Mirabolans, Green Ginger, Sugars, Sugar-Candy, Camphire, Sandalwood, Benjamin, Musk, Siver, Ambergreefe, Rice, Indico-Silks,

Silks, both raw and wrought, into several Fabricks, Salt Petre, several sorts of Precious Stones, Pearls, Mother of Pearl, Gold, Silver, Christial, Cornelian-Rings, Agate, Lacque, Furs, and Skins of wild Beasts, Porcelane, Copper, China-Roots, Tea, Coffee, Sanguis. Draconis, China-Wares, and Callicoes, of divers sorts, together with several other Commodities and Drugs, too tedious to set down.

The next is the *Eastland Company*, which was first Incorporated in the 21st of Queen Elizabeth, Anno 1579, and since confirmed by King Charles II. and enjoying by their charter ample Priviledges and Immunities, and as large a Scope to Traffick in, including the Trade of the Kingdoms, Dominions, Dukedoms, Countries, Cities, and Towns of Norway, Sweedland, Poland, and the Territories of the same Kingdom, as also in Leetow and Liffland, under the Dominion of the King of Poland, Prussia, also Pomerania, from the River Odera Eastward, and likewise in Isles of Finland, Poland, and Berntholine within the Sound.

The Commodities which they export from hence are Woollen Coths, Perpetuances, Kerfies, Serges, Norwich Stuff, Lead, Tin Cottons, Pewter, Stockings, Hats, Gloves, together with some Spices of India, and several other Southern Commodities, as Satins, Silks, &c.

For which they import Deals, Masts, Timber, Oars, Clapboards, Balks, Bomspares, Cantspars, Pipestaves, Wainscot, and Quarters, also Flax, Hemp, Linnen, Cloth, Fustians, Cordage, Cable Yarn, Pitch, Tar, Tallow, Hides, Pot Ashes, Wheat, Rye, Iron, Laten, Copper, Steel, Wire, Quicksilver, Rich Furs, Buskins, Train Oyl, Sturgeons, Stock-fish, Mather, with several other good Commodities.

The

The next is the *Royal Company*, which by their charter granted to them by King *Charles the Second*, bearing Date the 20th of *January*, in the 14th Year of his Reign, they are Entitled, The Company of *Royal Adventurers of England*, Trading into *Africa*, or the *Guiny Company*: The limits of their Trade is, from *Sally in South Barbary*, inclusive to *Cape de Bona Esperanza*, within which said limits all *English Ships* are prohibited to Trade, except such as are Authorized by the said Company.

The Commodities that this noble Company exported from *England* to the Parts of *Africa*, afore-said, are *Iron*, *Copper*, *Slesias*, *Sheets*, *Sayes*, *Perpetuances*, *Cowries*, *Welch Plains*, *Manillos*, *Poyfades*, *Chints*, *Pombergers*, *Coral*, *Callicoes*, *Niccanees*, *Clouts*, *Amber*, *Powder*, *Muskets*, *Batteries* of all sorts, *Turkey Carpets*, *Strong waters*, *Spirits*, *Ginghams*, *Taffaties*, *Beads* of all sorts, *Buckshawes*, *Knives* and *Sheaths*, *Swords*, *Tallow*, &c. for which they import from thence to *England*, *Gold*, *Elephants-Teeth*, *Hides*, *Malegutta*, or *Guiny Pepper*, *Redwood*, *Ambergreece*, with several other good Commodities, besides great quantities of *Negroes*, for the Supply of his Majesties *American Plantations*, to the great advantage of the *Inhabitants*, as well as to the said Company, and besides the Supply of 3000 *Negroes* Yearly to the *Spaniards*, for the Supply of their *West-India Trade*. And for the better Negotiation of their Affairs, they have already settled several *Factories*, as at *Gambo*, *Rio*, *Nuno*, *Rio Grande*, *Sierra*, *Liona*, *Serbro*, *Cestos*, *Achin*, *Ania*, *Comenda*, *Cape Corso*, *Acara*, *Cormensine*, *Arara*, *Benin*, *Old and New Callabar*.

MONTHLY Observations in Gardening.

Every Plant and Flower shews to us the wonderful Power of God.

*Because out of thoughts God should not pass,
His Image stamped is on every Grass.*

FOR, the Rose teaches the Fading of our Beauty, that smiles one Day and withers the next, *Psalms* 103. verse 15. the Lilly may perswade us to Innocency, and sweet smelling Myrrh. *Sol. Song*, Chap 5, 13,

The *Marygold* may put us in mind to open our Hearts, to receive the Inshining of Grace, For Jesus the Son of Righteousness: For at the Absence of the Son, the *Marygold* is shut.

The *Comemile* shews us that tho we are prest down with Tryals for Chri.'s sake, the better we grow.

• The *Hysop* may mind us of the Remission of Sin, to the true Penitent, by the Merits of Jesus. And thus we may gether a blessed Posie of Heavenly Thoughts, *Isaiah* 58. 11.

Faith is called a Rose, that grows between two Nettles, *Presumption* and *Despair*; Is there not a Weed sometimes between *Humility* and *Patience*? So that the good Christian has full Employments to Root out all such Weeds, *Heb.* 12. 15. as long as he lives on Earth, (by the Assistance of Grace) other

otherwise it would be worse with him? For want of Weed, the Gardener would grow idle and slothful, which is the Worst Weed that can grow in his Soul, for there *Satan* soonest enters Temptations, *Phil.* 2, 12. 1 *Pet.* 5. 9.

JANUARY. There's little to be done in Gardens this Month, but you may gather Sheeps-Dung to mix with Earth to lye rotting a Twelve-Month, to layer Flowers with; and you may cut off the down-right Roots (if any) of such Trees as Yearly Bloom, and bear no Fruit, burying a dead Dog or Cat under the Tree; often casting Soap-Suds near the Root, or the Dirt of the Sinks of *Wool-Combers*, or Street Dirt of the Sinks of great Towns. If this had not been good to enrich Ground, the Gardens of the City of *Rome* had not sometimes given for the *Common Sinks* 600000 Crowns, Historians tell us; and lay Dung in undung'd Orchards once in four Year, letting neither Dung nor Weeds (at any time) touch the Bark of any Tree; also gather Cions. [See *Grafting Fruit Trees.*]

FEBRUARY. If the Frost hath kill'd the Cabbage-Plants you set in *September*, sow the Seeds now in a Hot Bed thus made: Dig a Grave of what length and breadth you please, (where the Sun shines most, and shelter'd from the *North* and *East* Winds) about two Foot deep, tread it full of Horse Litter, with the Dung, and cover the Dung near half a Foot thick, with fat Earth sifted, covering it with Pease-straw or Mats, only in cold Nights, the Seeds also of Musk-mellons, Colliflowers, Cucumbers, Purslain and Lettice may be sowed therein. You may now plant the Buck-
T
ers

ers of Currants and Gooseberries, tho' *October* is the best time; sow Garden-Pease; for the Beans set them about one Foot asunder with a setting Stick.

M A R C H. Trim the Leaves of Clovegilliflowers with a pair of Scissars; sow Parsley, Carrots and Turnip seeds, and Parsnips; and set Carrots and Turnips to raise Seed; and set Onion and Leeks to put the Tops among Pot-herbs; prune the Apricock late; take the litter from off the Asparagus-bed, dig it with a Fork a little and sift some good Earth thereon; if you make a new Bed, do it as the Hot-bed last Month, and lay the same Roots; you may buy of a Gardener on it; or you may sow the Seeds in a Bed of good Earth, and it may do well enough, so as you take off all Weeds and it is not so tender, that it needs covering in Winter, but to fatten the Bed, and cover them be sifting Earth on them, and let them run to Seed two Years before you cut the Buds to eat; dig the Weeds and Tops of the Artichoke into the Bed, lying the Earth level, leaving but one or two of the strongest to each Root casting away the suckers; plant the short-stalked Cabbage Plants near a Yard asunder, setting them pretty deep on the Edge of your Carrer Ground; being set one Month draw Earth upon one side of the Bed like to lay them flat upon the Earth and they will cabbage the better; sow Clovegilliflower seed. A Parsley-bed may serve for use many Year for a Family, if you take care to pluck off such shoots as are likely to stand, as often as you see them need.

When you see the Tulip leaves begin to peep out of the Earth, spread your Flower Garden all over with fat sifted Earth, mentioned in *January*, or
Wood

Wood-Pile-Earth, or the Earth that Moles work up in a rich Pasture, and when you see a very great Hill (lately cast up) dig to the bottom to find her Nest; now you may dig in rotten Horse-dung into your Garden; set more Beans and Pease, and Graft.

A P R I L. In this Month, chuse the Evening of a Rainy Day, to set the cuttings of Thyme, Hyssop, Marjorum Savory, Penny-Royal, Balm, Mint, &c. For Winter Greens; Hedges to be cut square after Rain, often letting such Herbs grow out of the Flower Garden for use; you may also part the Roots of most Things, cutting off their Tops, and most of their already Roots, before you set them; the Boughs of Fruit Trees that grow too near each other, may be set at some certain distances, with weights or cords, to remain so for four or five Weeks. Young Fruit Trees should be slit in the Bark, from the Head to the Root at three or four sides, to prevent their being Hide-bound; cut off all the dead Twigs out of Bays, Laurel, Roses, and all other Bushes; plant Cowslowers; and cut off the strings of all Strawberries, (except the Wood and white ones;) remove the young Clove gilliflower Plants, sowed of Seed the last Month; set Rosemary slips (twisting the Ends) very close to a Wall, and with Leather's nail it thereto while its young, not too close to the Wall.

If the Vine hath no Leaves before the 20th day of this Month, all the cold Weather is not past.

A Currant Tree having only one Branch from the Root, set in October, and with Leather nailed to a North Wall, will bear berries very well, and grow to the height of any Wall in Time. If in this Month and the next you clip off the Young shoot

shoots that grow above the berries, and every time you see the Top shoot above five Inches above the over-most Nail, give it another Leather and nail it, or the Wind snaps it off. *Note*, That these Trees are full of little branches of about half a foot long, but nail none of them to the Wall. I have above 20 such Trees growing, some of them near 20 Foot long, to a *North-Wall*, and the berries are large.

M A Y. Dig Dung into a bed, to sow Purslain in, if the Ground is not wet nor cold, sow Scarlet and Kidney Beans in light Ground, covering them lightly, because a Bean comes up and turns up two Leaves. Where any places of your Crop of Carrots miss coming up, there make Holes like deep Scuttles, which tread almost full of Horse-dung, covering it with Earth; [*See Hot Bed in February*]; and sow Cucumber-seeds therein, nipping off the superfluous branches, and Watering when need is. The Garden-beans being in full bloom, clip off the Tops of the Stalks, and the Tops of other bushes where they crumple up, because Vermin breeds in them.

Tulip-Leaves being dry, you may take up their Roots, and being dried from the Dirt, put them in a Box, and cover them with Sand (raise them up once in three or four Years if you will) and set them again in *September*, put the Off sets in a bed by themselves; if you take not up the Roots, cut not off their Leaves, Asparagus buds use in Pottage as you do green Pease, and it is good till Pease come, but they must be cut small like Pease. The sooner you let it run to seed, the Asparagus-bed will be the better; if you cut none one Year, it will pay you well the next Year.

About

About the end of *April* clip off the young shoots from your Gooseberry-bushes, and also from the Currants, and likewise all the Succours near the Ground, except those long shoots that you intend to save for Plants in *October*, and the string of the great Strawberries.

JUNE. From your Fruit Trees cut off all Bruises, Gums, Stubs of dead Wood, and Cankered Places; (*See Pruning.*) Take up the *Anemone* Roots, and dry them, and set them again in *February*; (*See Inoculating*) Having gathered all your *Roses*, clip the Top of the bushes, and the Tops of your Monthly *Rose* often in Summer: They are very useful Flowers, and are sweet, yet soon fade. Prune *Wall Fruit Trees*.

To encrease the double Stock-Gliffower, about this Time, cut off a slip about five or six Inches long, that is a pretty strong one that never had a Flower on it, nor like to have one that Summer, then turn up the bark about an Inch, cutting the sides thereof, so as the bark may stand like the Spokes of a Cart-Wheel, and cut off the Woody Inch, and set it pretty deep in some shady Place, first cutting off the Top to the bud, and the other Leaves shading and watering it for a time, cut only the longest Tops of your Rasp-Hedge even with the other.

That Man might be Industrious, (not Idle) God has given him so much Knowledge, as to know when to gather the Fruits of the Earth of his use both for Food and Physick. For

‘ The Observation about gathering Plants, (saith Dr. Pecky in his *Compleat Herbal*.) from the various Positions of the Heavens, or Seasons of the Moon,

• Moon are superstitious and vain: But I suppose 'tis
 • best to gather them, when they are full of Juice,
 • that is, well concocted, and before the Fibres are
 • woody; chuse a clear Day, and do not gather till
 • the Dew is gone off: Flowers are best gathered
 • when full blown: Seeds when they are ripe, and
 • begin to dry: Fruits should not be gathered till
 • they are quite ripe: Roots are best gathered in the
 • Spring: 'Tis best to dry Herbs in the Sun, tho'
 • Physicians generally order that they should be dry-
 • ed in the shade.

JULY. Gather the seed of Clovegill flowers,
 and keep it in the Husk till you sow it in *March* or
August, and by the middle of this Month finish the
 laying them. Having gathered your Strawberries
 cut off all the Leaves after Rain, (except the bed of
 White and Wood Strawberries) which you may
 thin and weed at the latter end of *March*, and soon
 after that make a new bed, by setting the smallest
 Roots, pressing the Earth very hard to them, that
 the Worms force them not out; remembering that
 they will want Water often as doth Colliflowers, Cu-
 cumbers, &c.

AUGUST. Sow the first ripe Cabbage-seed,
 also Collworts, Turnips, Marigolds, Box, Poppies,
 Spinage, and Lettice, Sow the seeds of *Auriculus*, or
Bears-Ears, in a Pot of good Earth, let it stand a-
 broad; the next Summer plant out the strongest.

If the Earth is well soak'd with Rain, this is ra-
 ther a better time than *April* to take up all the
 Herbs and Flowers, and to dig Horse-dung therein
 that's very rotten. Now Layer, Bays, Lawrel,
 Rosemary, &c. as is shewed of Clovegilliflowers,
 only

only instead of cutting that Place of them that is to lie under the Earth, run a blunt Awl three or four times through the place; in *March* following you may remove them (if taken Root) or stay till this Month.

Cip off all the stalks and leaves from your *S row-berris* (except white) and Parsley, and Sorrel, also your Pot-herbs, and new leaves will soon grow again.

S E P T E M B E R. Dig a little Dung into a Bed, and therein set your strongest Cabbage-Plants, about two Inches asunder, water them very well that evening, and no more; do so with the Plants of Collwerts, Marigolds, and Lettice; set the Tulip Root you took out of the Earth thus, with a narrow Trowel make a Hole, then put in a Handful of Sand, on which set the Root, and Earth it up; the Sand is to prevent the Root from growing too deep in the Earth. Having cut off the stalks off your Clovegill flowers, set little short sticks, and tie them to such Branches as may be beaten flat by Snow and Rain. Gather Apples after full Moon. Turnips and Carrots laid in Sand, are a good Ballast for Ships at Sea.

The treading on Carrots, it's said, makes the Worm breed in them, Their Tops being Yellowish, with a Fork take them up; and the best Turnips, rub off Dirt, and cut off their tops within an Inch off the Head, and lay them in some close corner in your House on the Ground, covering them with Straw close, or rather sand to spend in Winter; The buds of Cabbage-stalks are a good raw Sallad. Now spread your Flower Garden all over with good fat Earth, or rotten Dung to fatten it.

O C T O B E R. See *Planting of Fruit Trees*: For h. Suckers of Currants and Gooseberries plant now, and for those that have Roots set now, and they commonly bear berries the following Summer; let all your bushes of them grow from single stems, (as Apple-Trees) and they will bear large berries (tho' they grow under Apple-Trees) to as you cut out some boughs near the Head, from those that grow too thick, and with all to observe all Summer long to cut up the suckers, or clap them in the Middle, and other Trees which you may easily do with an old Chisel fastened to an old spade Handle: The great under boughs you may cut off now with a Hatchet, within a Foot or two from the Body; and next *June* saw them off within an Inch of the body, smoothing the Place with a Knife; and lastly rub Dirt on the Cuts, and the bark will grow over the Wound in time.

If you desire a Nursery for the raising of Stocks to graft on, sow the seeds of Crabs, and the Stones of other Fruit, now covering the beds with Horse-Litter until *March*, at two Years end pluck up the strongest, and cut off all their boughs close to their bodies, and a little off the tops, and all the strongest Roots close, especially downright Roots; then by a Line and a setting Stick, set them near two Foot asunder, and at two Years End many of them may be ready to Graft and Inoculate on; gather Fruit in a dry Day, Full Moon being past, and the bruises will not so soon rot, the best lay on Shelves in a Closet, where Frost cannot enter in Winter, but if the Apples happen to be frozen, touch them not until the Frost is gone out of them; in the same Closet fix small Lines from one side to the other, to lay your bunches of Grapes on, being cut off the
Vine

Vine at the beginning of *October*, and then prune your Vines, cutting off all the young Branches within two or three Inches of the main branches, to keep all Winter; Gather not the Grapes until they are soft, tho' the Frost comes, better to have them withered than unripe; but if they continue green and hard till *November*, make Vinegar of them.

Sift fat Earth all over your white Strawberry-bed, until the Leaves are almost all cover'd in Winter, but when you water them in dry Weather, first scatter on them the Powder of Sheep and Cow-dung, if the Earth is poor.

N O V E M B E R. If you desire to raise Cabbage-seed, pluck up the best Cabbage by the Root, and set it again in some Sun-shiny Place, so deep that you can see but the Crown of it.

Cut the tops of your Artichokes, and make Trenches between the Rows, casting the Earth upon the Roots as a Bank, and cover all the bed with Horse Litter, also cover the Asparagus bed with Horse Litter, or good Earth.

D E C E M B E R. If you did not prune your Vine soon after you gathered the Grapes, now nail the strongest to the Wall with Shoemakers Leather, each branch near one Yard asunder, cutting off all the young shoots within an Inch of each Knot, so will your Pruning Work be little Yearly.

But when you have a long Young Branch that begins near the Root, you may nail that to the Wall, and cut off an old Arm; by this means, in Time, you may cause your Vine to look Young again; yet the fewer Branches any Fruit-Tree

bath, the larger will the Fruit be: Lay Beasts Blood, and Sheep dung to the Roots; or, about half a Yard from the body of your old Vine, you may pour a quart of Man's Urine twice a Week, or oftener.

And in a very dry time wrap a list of Woollen about the Body, and the other end into a bottle of Water, and it will suck out the Water.

General Observations.

1. *Your Work in Hot and dry Weather.*

First, Water no feeds newly sown, but being come up, you may give them Water in the Evening, but when you once Water the Roots of Flowers, continue it every Night, till Rain come, or better not Water them at all.

2. What Herbs you Water, wet not their leaves; Well water, let it stand half a Day first in the Sun, or steep Sheep dung in it. *Note,*

3. If you have a Root of Flowers given you, and you are to carry it far, wrap the Root about with wet Clay, then put it in a wet Linnen Cloth; when you set it. Water the place very well, and therein set it, shading it from the Afternoon Sun. When you cut the Angelica, and the like, leave a little leaf to the Root, else Water the Roots very well.

4. Cut as few Herbs as you can, except such as you are to dry for Winter, and Water the Roots.

Lastly, With a Hough, cut Weeds a little within the Earth, (in the Carrot-Ground) and they dye; Grass will cast its seeds often in Paths if not taken up the Roots in time; and often Water the Roots of young Fruit-Trees if need is.

II. *Your Work in an Evening, in Summer, after much Rain.*

F*irst*, You may remove Herbs or Flowers, taking some Earth with the Roots.

2. Draw up Weeds by the Roots.

3. Clip Herb Hedges, and gather Snails. In *October* the very young Snails often lie very thick on the underside of Boughs of Trees, are easily kill'd with a Trowel.

4. If Snails or the like, eat the Stockgilliflowers, tie a Paper or Rag round the stalk, and rub the Paper over with Tar. Observe the same in Young Fruit Trees, that are against a Wall.

5. Rub Moss off of Fruit Trees with a Hair Cloth, the Bodies of Trees with a Drough gratt.

6. With a Hough draw the Earth a little to the Roots of Peas, Beans, Cabbage, &c. that they may seem to grow on the Ridge of a Land, or Hill.

7. Get Twich Grass clean'd up by the Roots.

8. The next dry Morning roll or beat Gravel, and Grass Paths, if dry on the Top.

Lastly, If you see a large House Snail lie flat on the Earth, dig the Earth under her, and spoil her Eggs, like small Peas, shining like Pearls.

And to keep Snails, &c. from any Flower, scatter Tobacco-dust, or Barley Chaff, on the Ground round the Roots.

III. Your Work in November, the Frost comes :

- i. **C**over your Cucumbers at Night only.
- 2 Lay good store of very rotten Pease-Straw about the Roots of Rosemary. and other choice Flowers; some approve of laying Street Dirt pretty thick to the Roots of Rosemary.
- 3 After very great Frost, crush down the Earth close to the Roots of the Flowers.

Lastly, If you are to Water any Herb in Winter, let it be with Blood-warm Water once a Week, and if the Snow cover any Herbs remove it not; but when the Snow is wasted, cover the Plants with Straw or Mats, for want of so doing Herbs were kill'd *Anno* 1708, but cut them not up till the middle of *April*, except for Pot-herbs.

IV. Of Planting of Fruit Trees.

If you buy any to Plant that has been Grafted three or four Years, take none that has either a bruise or cankered Place in any part of the Bark or Boughs.

First, Cut off the downright Root (if any, except the Root of Peaches and Nectarines,) take the Roots of the Pear-Tree up carefully, because of their brittleness.

Secondly, Cut off all the Roots that are broken, and that are too long, and the ends of all other Roots; then cut the boughs off, that the Head may not be much bigger than the Root; Remembering, that in *June* following you prune the Head sloping close by a bud, but not before *June* comes.

Thirdly,

Thirdly, Make a Hole in the Earth like unto a bushel, and in the middle thereof raise a Hill of good Earth, on which set the Tree, setting the same side Eastwards (if you can) as it stood before, which sometimes you may know by the Ends of the twigs on the tops of the Trees bending Eastwards, because the Winds for almost three parts of four in the Year, blows from the Westward with us in England, which commonly is the strongest in *March* and *September*, the Sun in both Months being in the Equinoctial-Line, causing many twigs to stand bent Eastward. The Tree being set on the said little Hill, spread the Roots about it, covering them with good Earth by little and little, drawing our small Roots at length with your Fingers, that they may grow side-ways, and not cross each other (except good store of Earth between them) then put in more Earth, treading it down to the Roots, leaving a Hollowness about the Tree, not setting the Tree deeper in the Earth than it stood before, when you need not mind to those Grafted on a Quince-stock; lay Hay or Litter by it to water in Summer: *October* being the best Time to Plant Trees in agreeing with this Old Rhime;

*If you a Thriving Tree would have,
Carry him with his Green Leaf to his Grave.*

But if the Earth is hot and dry in *October*. as it was in the Year 1707, plant not till *November*, or as soon as the Earth is well wet with Rain.

Trees for Walls are set a Foot from the Wall at 12 Foot Distance, the old earth carryed away, and set in Fresh Earth; observe the same when you set other things, if the Earth be poor.

Note,

Note, *There are several Things that draw Fruit, Flowers, &c.*

If the Canker worms roll up the Leaves of your Trees, kill what you can by nipping the Leaves together, and scatter Salt Water on the Wall Trees, and new Inoculated Buds; but if that will not do, smother the Trees, in a still Evening, with burning Hemlock, and other stinking Weeds under the Trees.

When you find a Hole, Bruise, or Canker'd Place in any of your Fruit Trees, pick out the Seeds of the Vermin that are there, and in June following cut away all the dead bark about the said Holes, till you come to fresh bark, and rub the place with Soot, Earth, or Cow-dung.

Hares and Rabbits in a Frost sometimes bark young Trees, anoint the bark with Rabbits Bark Soot, Blood, and Hogs-Dung mixt, Fruit Trees. or tie Hay-bands about the Trees, and rub Tar on those Bands rather than on the Bark.

Piss-Ants are driven away by casting scalding Water on their Hills, or laying wood-Ashes, or rather Tobacco Dust round a Tree, or Plant, or you may prevent their going up a choice young Tree, by tying a piece of Paper round the Body, and then anoint the Paper with Tar.

Snails eat Holes in Peaches, sprinkle Salt Water upon the Fruit, and every Morning gather the Snails and scatter

scatter on the Ground small Barley Chaff (the best to kill Snails) See general Observations for Snails.

Note, That the late Pruning of the Apricock and Peach-Trees is a means to keep them back, and so not so subject to *Blasts*, be blasted by *May Frost*.

If *Great Worms* draw in some of your choice Seeds, or small seedings, gather them in the Morning, or Evening *Great Worms*, of a wet Day, and if you pour in- to their Holes the Water wherein Walnut-Tree Leaves are soaked, or Salt Brine, they will come out of the Earth any Time a Day, to catch Fish with.

To destroy *Earwigs*, *Wood-lice*, and little *Snails*, which often creep into Bee-Hives, Fruit, Gilliflow-ers, &c. Put Calf Hoofs on the *Earwigs*. Top of the Sticks you tie your *Wood lice*. Flowers to, and they will shelter in in them; but when you find a large House Snail flat on the Ground in Summer Time, take her up; they put their Noses as far as they can into the Earth, and have Eggs like Peach.

Rats and *Mice* sometimes spoil Grapes, and Bee-Hives, stop the Holes on the House side where they come with Wheat-Dough mixed with Rats-Bane; if you stop them *Rats and Mice* Mortar, mix beaten Glass therein: Some mix Lime and Treacle together, for them to kill them.

Birds do sometimes spoil the Buds of Wall-Fruit, and the Seeds of several Things new sown: Stick up where they haunt, Wheat-Ears not clean Threshed, having

having about a Foot length
Birits. of the Straw on each Ear, stick them
 where you sow'd the Seed, and anoint the Straw only with Bird-Lime, thus ordered, take Bird-Lime a quarter of a Pound, and half an Ounce of Hogs-Sewit; melt them together, or use the clammy Juice of the ripe Berries of *Misselle*.

V. *Pruning old Standard Apple-Trees,*

WHEN you have gathered the Fruit, you may cut off those dead Twigs you see, (tho' *June* be the best time) and chop off the superfluous under boughs, within a Foot of the body; (See *October*) For such boughs as gall each other, breed the Cankers, which they will surely do in Apple-Hedges.

VI. *Pruning Wall Fruit Trees,*

THE chief boughs being nail'd to the Wall with strong Leathers, (but not to bind the bark so as to gaul it) then in *March*, or a little sooner (if the Spring be early) cut off all dead twigs to the quick, and those strong young twigs that will be nailed to the Wall without breaking, observing the Directions in *June*.

Note, That every Twig you Nail to the Wall should be cut off at the end from a bud sloping; also cut off the twigs that grow before and behind the Tree, (except Fruit-buds;) late Pruning is the best, but no time better than *June* to cut off twigs or Arms of Trees, daubing the Wounds with Earth, and in a few Years the bark covers it as the Skin covers

covers a Wound in a Man's Body, using timely means, and cut off the tops of tall Fruit Trees so with a Saw, and smooth the place in *June*, of such Trees as bear little Fruit, laying to the Roots the Dirt of the Sinks of *Wool Combers*, and let neither Weeds nor Earth lye against the bark of Fruit Trees.

VII. Of Grafting Fruit-Trees.

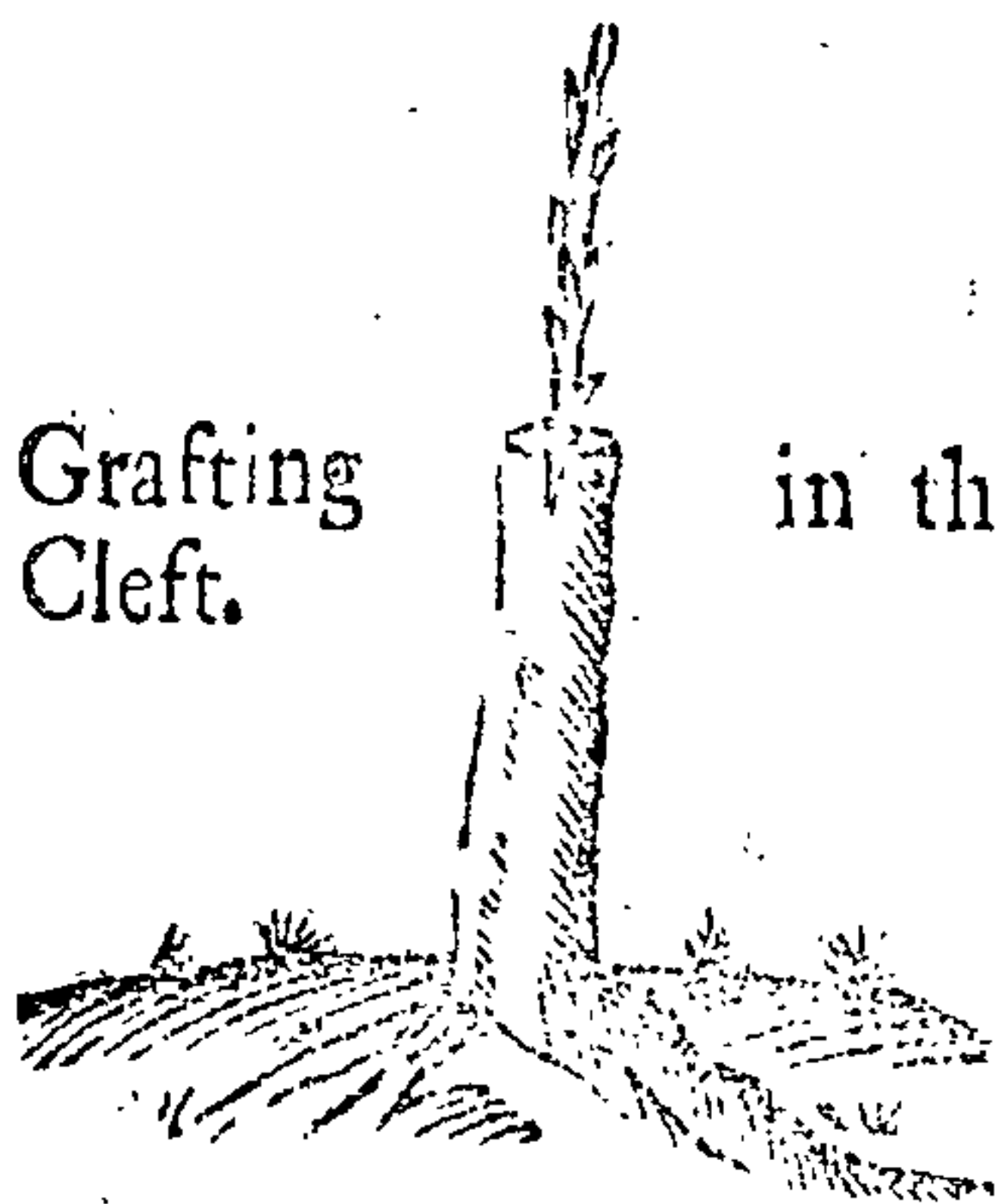
First, gather Cions, or Grafts in *January*, for early Pears, Cherries, and Plumbs, from such boughs as Yearly bear Fruit, next the East or South, as those near the top of the Tree (each twig about a Foot long) that is fullest of Fruit Buds, bind them in little bundles, (each sort by themselves) and put them half-way in the Earth where the Sun shines not, till you use them (*viz.*) about the beginning of *March*, or later.

Note, That a Cion below the first Knot is best sometimes. If you carry Cions far, stick the Ends in moist Clay, and wrap them in Straw. And the latter end of *January* cut Cions for Apples, and Winter Pears, or later Fruit.

VIII. The manner of Grafting in the Cleft.

First, Saw off the Head of the Crab-Tree Stock that has stood two Years, where you would have it grow, and smooth it with a Knife, (being cut off about a Foot from the Ground) but lower for Wall-Fruit. For old Trees, it is better to Graft on the several Arms, than on the body. For standard Cherry-Trees, about four or five Foot from the Root, then cleave the Head a little besides

Grafting
Cleft.



in the

besides the Pith, and put therein the end of a long wedge of Wood, or Iron, (made for the purpose) to keep the Cleft open, having cut the Graft on both sides, from a Bud or Knot, in form a wedge, in length about an Inch and a half, which place in the Cleft, so as the Bark of both

may exactly join on one side of the stock, leaving on the Cion (when the end is cut off) three or four Buds; but if you do not set another Cion in the other side the Cleft, cut off the Cleft sloping close to the Cion,

Lastly, Lay a piece of Green bark on the Top of the Cleft, to keep out Dirt, and cover the Head of the stock round like a Ball, with Clay well tempered with Horse Dung, and a little chopp'd Hay or Wool, and stick the Feathers of Birds on it, and scatter Ashes on it.

Graft Pears on Pear-suckers; if on the white Thorn, then very near the Root; but on Wall-Pears graft on a Quince-sucker, which stood two Years in your Nursery, which if you set deeper in the Earth than other Trees, it will take no harm, as Apple-Trees, and most other Trees will.—

Graft Cherry-Standards on Black Cherry-Stone-Stocks, or Suckers. The Medlar on the Pear-stock. The Apples on Crab-Tree-stocks, &c. The

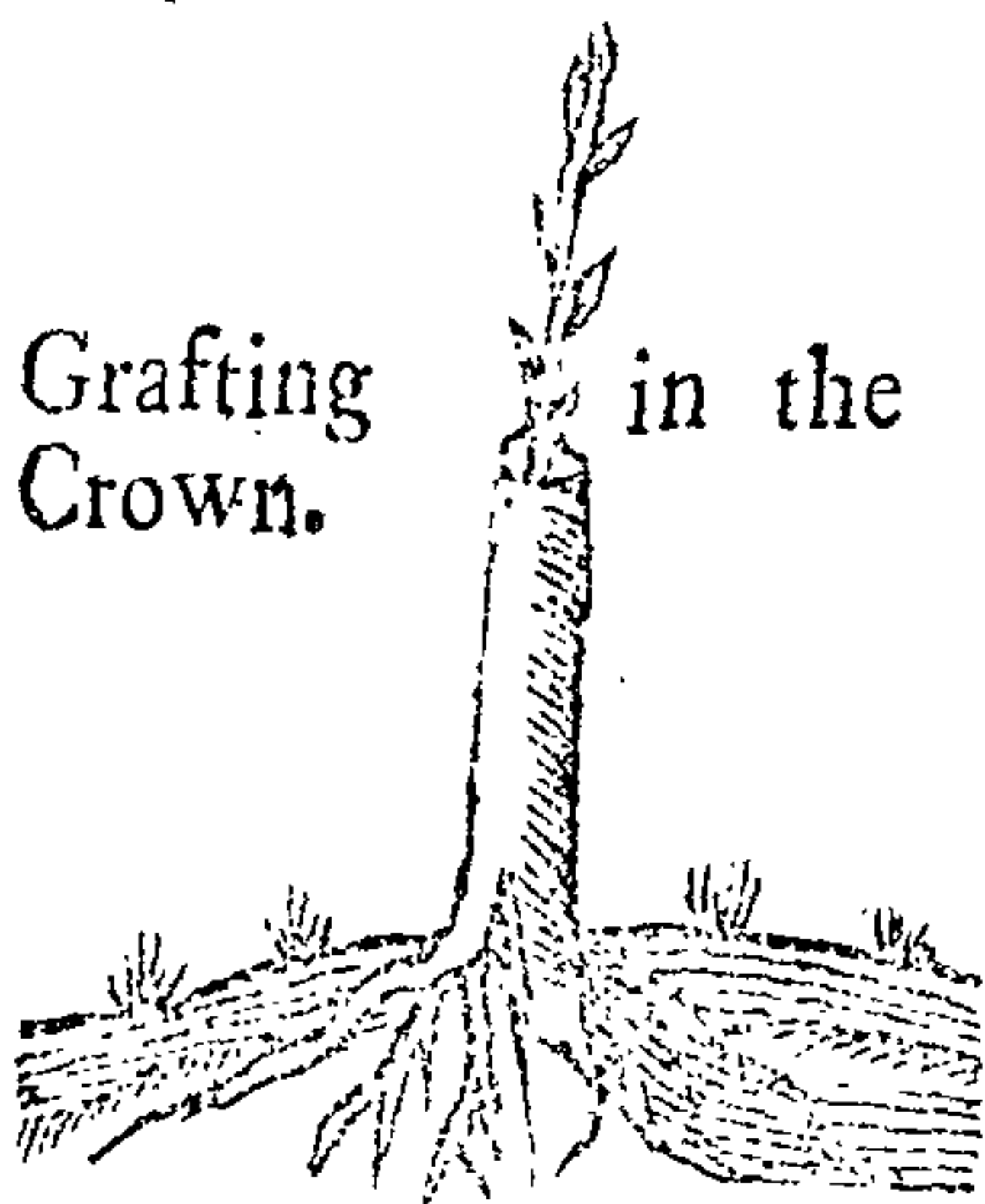
The largest sorts of Trees are Grafted in the Crown, (so called) when you find it not convenient to Graft the Arms, the manner thereof follows.

*To grow apace, when the Change is near,
But at the full, for your Trees to bear.*

IX. Of Grafting in the Crown.

HAVING saw'd off the Head of the Tree, or an Arm, within one, two, or three Foot of the

Grafting
Crown.



body, smooth it with a Knife, or Chizel, then take one of your Apple Cions out of the Earth, (the Windblowing from the South or West) and cut it on one side, beginning against a Bud or Knot, (if you can) almost to the Pith, and cut a little of the Bark on the o-

ther side, then put in a small flat Iron Wedge, somewhat bigger than the end of the Cion, between the Wood and Bark of the Stock, and set the Cion in its Place, Rind to Rind, and Wood to Wood, to the full Depth, that it is sharpen'd. as suppose an Inch and a half, reserving three or four Buds about the Stock.

You

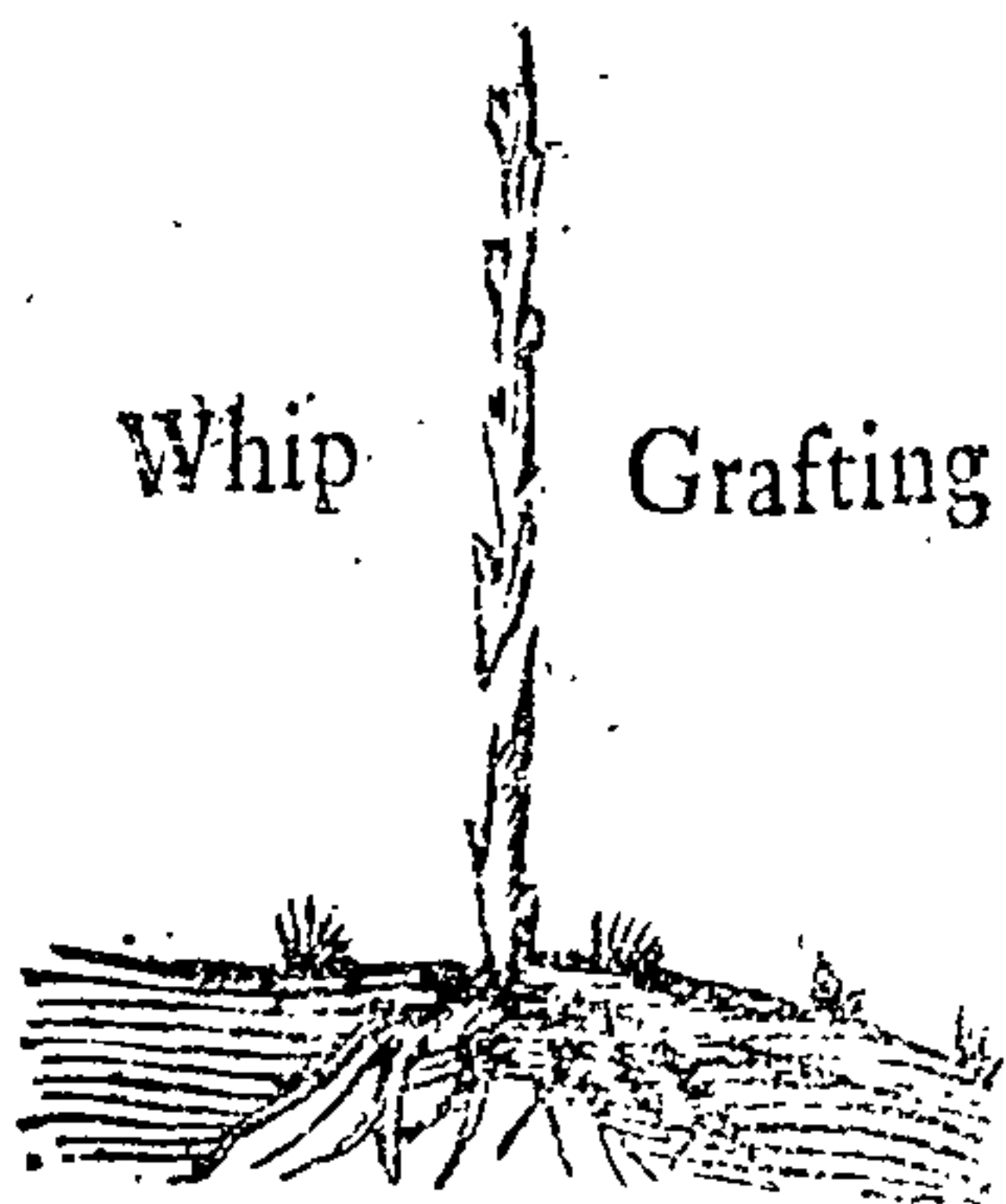
You may place more Grafts in the same Head or Stock (according as it is in bigness) so as you reach not the bark. *Lastly*, Bind it up as is before shew'd of Cleft Grafting.

X. Of Whip Grafting.

TO be performed in *March*, seeking amongst your little bundles of Grafts you set in the Earth, to prevent the buds of them to shoot too far,

as are in substance (at the great Ends) to part of the Stock where it is to be plac'd as big as a large Swan's Quill.

Then chuse a smooth Place in the Stock, and cut it sloping about an Inch an an half or two Inches long, and cut the Graft with the same slope



Cut, (as if you were to tie together the joynt of a Whip, or Angle) somewhat like the Figure of this Tree.

Make them joint together by several Cuttings with a sharp Knife) that bark may answer bark exactly; bind it up close with speed, with dry Flags, Baize, or thin Willow bark, and Clay it round as is before shew'd of Cleft Grafting, remembering to cut off the Tops of all Cions at a bud, sloping the Length of the Graft, the same with others.

When

*When you do Graft, or Bud, therein may see,
How Grace, and Souls should so united be.*

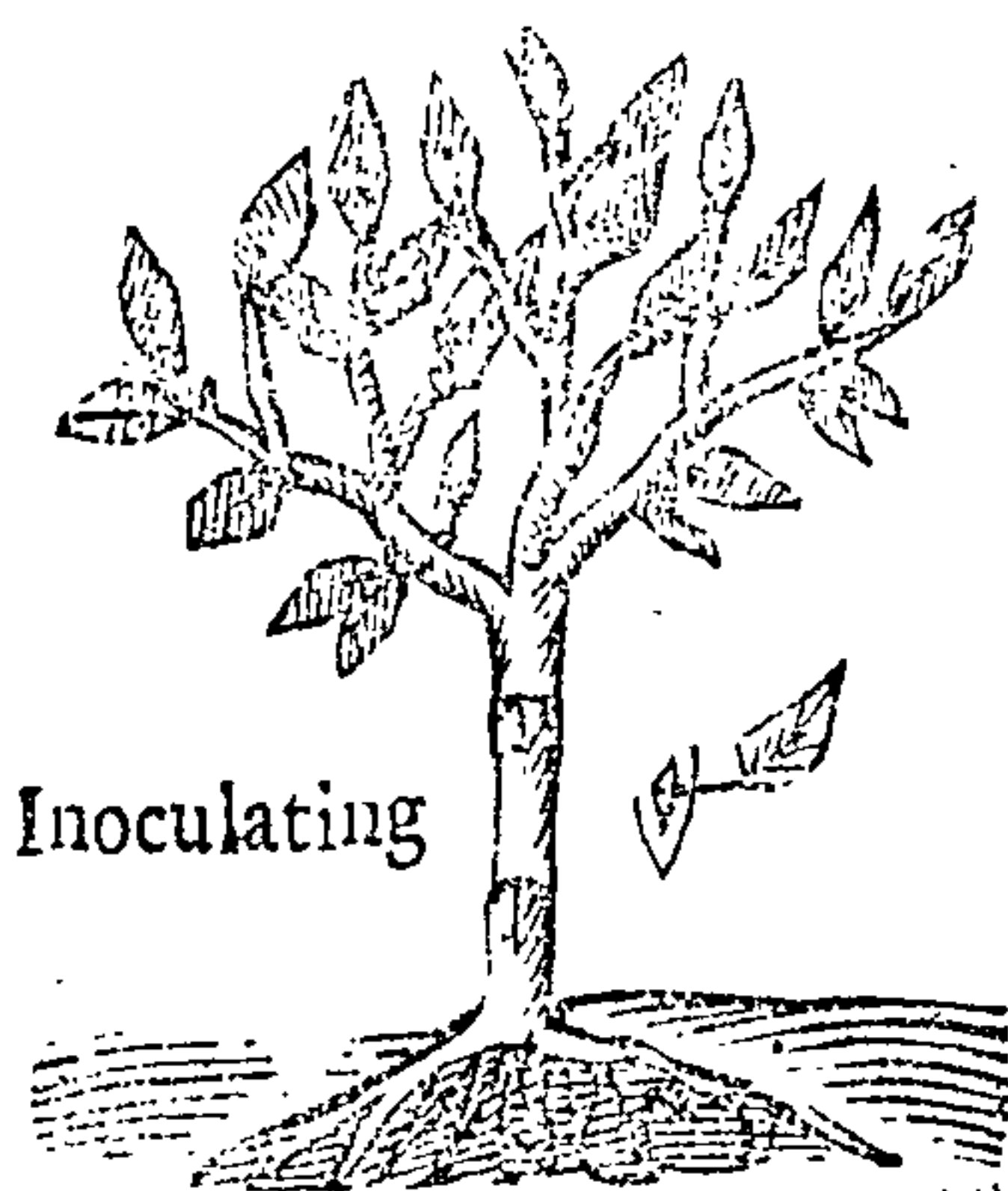
And in *June* following unbind them, and tie them slightly for a Time; some Gardeners Graft the Cions the same Day they cut them from the Tree, but 'tis not so well

From the Root of one young Crab-Tree, ten or more Roots may be fit to Graft; and when you have Whip Grafted thirty or forty, set them in the Earth with a Setting-stick, just covering the binding. Thus you may soon raise a Nursery.

XI. Of Inoculating.

TH E Peach, Apricock, or Nectarine may be Inoculated on a young Plant, raised from their Stones, but rather from the Suckers, or other white or black large Plumb. Some Inoculate the Peach and Nectarine on a common young Apricock Tree, that was Inoculated near the Ground, or an ordinary Plumb sucker.

Chuse



Chuse a fair Day, between the middle of *June*, and the middle of *July*, go to a Stock that is about as thick as a Man's Finger, then about 4 Inches above the Root (next the South or West) a little below a Bud (if you can) cut an overthwart, cut about

an Inch long, and from the middle of that cut in the Bark, cut a downright cut about an Inch and a half long, that it may appear like to this great Letter T, as may be seen in the Body of the Figure of the Tree.

Take heed that you cut not into the Wood of the Stock, because it sometimes causes Gum to arise to spoil the Bud when fixed therein.

This done from the Branch of an Apricock Tree, set in the Earth as other Cions, one of the same Year's growth, (if you can, or the last Years growth) chuse a Bud that is not too young and tender, whether it hath a Leaf by it or no is not much matter.

Then about a quarter of an Inch almost above the Bud, cut an overthwart cut quite round the Bark, and then cut the Bark on each side the Bud, or Sprig, downright, so end in a Peak, somewhat like a Boy's taper Top, as the Figure before with the Leaf, which should be even at the Top.

Then

Then with a Knife that hath a smooth back nimbly drive off the Bark with the Bud on it, (and Leaf, if any) but if you see a little Hole on the inside of the Bark next the Bud, then hath the Bud left behind it the little Root, (so called) cast it away, and prepare another bud that hath a Root: Some People slip it, or cut it off with a slit Goose Quill.

Now having the bark with the bud ready, place the bark thereof within the cut of the Stock, so that the Edge of the bark that is above the Bud join exactly to the upper Edge of the bark, first cut in the Stock.

Then close the bark of the Stock over the bark of the bud, and bind it close with Bays, or dry Flags, that you see nothing thereof but the bud.

Note, That if the bud has a Leaf, and it falls off at about two Weeks end, it is a sign the bud takes.

About three Weeks after this, unbind it, and tie it a little flacker for a time.

You may place two or three buds in the same Stock, if you will, preserving only one at last; the Spring following cut the Head of the stock about half a Foot above the bud, only leaving a small Branch or two to be cut off, as soon as you see the bud grown out of danger, and often cutting off all other buds and suckers that may hinder the growth of the true bud; and in *June* cut the Stump of the Stock sloping, ending at the bud very smooth, and rub it with Dirt, and in two Years the Wound will be grown over with bark, if the Tree thrives well.

Thus you may bud Roses, Filbeards, Gooseberries, Walnuts, Currants, and strip'd Holly, that it may become strip'd.

XII. *To lay Clovegilliflowers.*

TH E best time to layer them, is about the middle of *June*, the sooner the better, if the Layer be strong and well grown; if you stay till the latter end of *July* they will not be fit to remove till the latter end of *August*, which time is the only time for them to Root well before Winter. Those you layer in *September*, remove them not till *March* following. The way is thus,

Chuse such Slips or Layers as are strongest, three or four, or more, of a Root, (accordingly as you have need of any Increase) with a Penknife cut off each Leaf about the middle, which is called Pruning them; and near, or at a Joint about four Inches below the top of the Layer, cut a Knot of the Stalk upwards sloping into the Pith, having first made a wide Hole in the Earth, with a narrow Trowel as far off the Root as the slip will reach, and bind it down therein, with a small hooked Stick (about a Fingers length) to keep it from rising, then turn up the Head of the Layer, that the slip may open (or bind it down, when open, over the slip) in which Posture Earth it up, with Earth that Moles work up in rich Pasture, or other good Earth pressing the Earth pretty hard about the Layer, all that you Layer in a Day, Water at Night.

Lastly, Prune all your other Layers, or Slips, in wet Weather

Those you Layer in *June* and *July*, cut them up with some Earth about each Root, at the latter end of *August*, and set them about a Foot asunder in Beds; but if you set any in Pots, let them have
Holes

Holes in the bottom, if they are not crack'd Trim^ming them a little.

Having briefly instructed you in the Art of Gardening, and raising of Fruit Trees, I shall now proceed to acquaint you with the Difference of some of those Herbs.

Two Plants that nourish themselves with the same sort of Juice, hurt each other extremely, by being set too near, to share between them the Food that is sufficient but for one, throws both of them into a fading Condition. On the contrary, two Plants that require for their Food Juices that are wholly different, flourish together perfectly well.

There is an Agreement between Rue and a Fig-Tree; between Garlick and Roses, on the contrary, there is a Disagreement between Rosemary, Lavender, the Bay-Tree, Thyme and Marjoram, because they all require the same Juices; there is a Disagreement between Cabbages, and Cyclamens, between Hemlock and Rue, and between Reeds and Fern.

A pretty Experiment.

A Man who has lost his way in a Wood, may easily recover it by finding out the East of the Place he is in, which is thus done.

Cut off a Branch from the Tree, and consider which side of it is least nourished, and that we conclude grew to the North, for every Year a new Circle grows, and that part that lies South, swells more from the Center than that exposed to the North.

U

Dissolve

Dissolve the Gumb of a Plumb-Tree in Vinegar 'tis a good Remedy for the Itch.

A pretty Experiment.

TH E following Tricks is made use of, when any thing in a Family is lost, to make the Person suspected confess the Fault, and restore what is lost.

Take a beard of wild Oat while 'tis greenish, and twist it in the shape of a little Cross, giving it to the Person suspected, and whose Guilt they are pretty well assur'd of: Give also to the rest of the Family little Crosses, but made of different Stalks, as Hay and Wheat, put all these in a cut Apple, and the little wild Oat will grow sensible of the Moisture and begin to move, untwisting it self, and turning, to the great Amazement of all the Spectators.

The Reason of setting up May Poles, and Dressing them up with Garlands, as was a Custom us'd by the Ancient *Britons* before they were converted to Christianity, in Honour to *Flora*, whom they worshipped as the Goddess of the Spring.

The Custom of throwing at Cocks on Shrove-Tuesday came from hence.

WH E N the *Danes* were Masters of *England*, and used the Inhabitants very Cruelly, the People of a certain great City had form'd a Conspiracy to Murder their Masters in one Night, and 12 Men had undertakn to enter the Town-House

House by a Stratagem and seizing the Arms surprize the Guard which kept it; at which time their Fellows, upon a Signal given, were to come out of their Houses, and Murder all the *Danes*. But when they were putting it in Execution, the unusual Crowing and Fluttering of the Cocks about the Place discovered their Design, upon which the *Danes* became so enraged, that they doubled their Cruelty, and used them worse than ever. Upon this, the *English* to shew their Spite, made Custom of knocking them on the Head on *Shrove Tuesday*, the Day on which it happened: This Sport became at last a natural Diversion, and has continued ever since.

How to make Good Cyder.

S T A M P ripe Apples, and fill a Barrel with their Juice, to which put six bruised Pearmains, stop it not very close; at six Weeks end draw the Clear into a Tub that is clean wash'd and dryed, and put to it a Beer-Glass full of White-Whine, wherein an Ounce of Isonglass is dissolved, and beaten with the white of an Egg, and to every 24 Gallons put eight Pound of brown Sugar well dissolved, in some of the Cyder. *Lastly*, Fill up the Barrel and stop it close, it will be fit to at *Christmas* following.

Poor People may make a good Drink with Apples by bruising some in a Wooden Mortar, and putting them into a Vessel, and putting Water them, and in a few Days they may drink of it, and its good to bottle up with a little Sugar.

To make Mead at any Time of the Year.

TAKE Water 10 Quarts, Honey one Quart, Sugar one Pound, Cloves 30, a Race or two of Ginger bruised, and two or three Sprigs of Rosemary; when the Water is near Boiling, put into it the Honey and Sugar, and Spices, let it boil about half a quarter of an Hour, (skimming it often) take it off the Fire, and squeeze into it four Lemmons, and break their Rinds, and put them in also; when it's almost cold, cover it in the Vessel, or Steen pot with Toasts of Wheaten Bread. first cover the Toasts with Barm, or Yeast, and lay them on the Liquor, and when it has wrought (use New Ale) four or five Days, and will run clear, put it into Bottles, and stop them close, it will keep long in a cold Place. 'Tis a pleasant Drink in Summer, in hot Weather.

To make Gooseberry Wine.

TH E Berries being Mellow, put them by Parcels into a Tub of Water, (pick them not as some do) but cast off those Leaves that swim, and put them into a Sieve to drain out most of the Water, and stamp them, or only crack them in a Trough-bowl (as Apples are stamped for Cyder) then put these Stampings into a Tub that hath a Tap and Tap-Hose, and put almost twice as much cold Water to them as the Stampings are for Moisture; then stir them well together, then (and no more) cast a Cloth over the Tub, and at the end of ten Days draw it out, if it run clear, or stay longer, and to every gallon of it put three Pound of brown Sugar,

Sugar, dissolving the Sugar in some of the Liquor) and put it into a fresh Barrel, and stop it close, and at *Michaelmas* draw it into Bottles: *Note*, That if you will have your Wine Red, put some Red Gooseberries, or Red Currants to them, when you stamp them, and if you have not Berries enough, stamp Apples with them. Thus you may make Wine of other Berries, or Fruit, with little Trouble: This I have had Experience of many Years.

To make Currant Wine.

Pick a Pound of the best Currants; and put them in a deep strait mouth'd Earthen-Pot; and pour upon them about 3 Quarts of hot Water, having first dissolved therein 3 Spoonfuls of the purest and newest Ale-Yeast, stop it close, till it begins to work, then give it Vent as is necessary, and keep it warm for about 3 Days; it will work and ferment, taste it after two Days to see if it be grown to your liking, then let it run through a Strainer, to leave behind all the Currants and the Yeast, and bottle it up; it will be very quick and pleasant, and is admirable good to cool the Liver and cleanse the Blood, it will be ready to drink in five or six Days after it is bottled, and you may drink it safely.

To make Strawberry Wine.

BRuise the Strawberries, and put them into a Linnen Bag which hath been a little died, that so the Liquor may run through more easily, then hanging the Bag at the Bung into the Vessel.

Before you put in your Strawberries, put in what Quantity of Fruit you think good, to make the Wine of a high Colour; during the working, leave the bung open, and when it hath worked enough, stop your Vessel, Cherry-Wine is made after the same Fashion, but then you must break the Stones.

To make good Cherry Wine.

TAKE the Syrup of Cherries, and when it hath stood a while, bottle it up, and tye down the Cork, and in a short time it will be pleasant Wine.

To make Black Cherry Wine.

TAKE a gallon of the Juice of *Black Cherries*, keep it in a Vessel close stopped till it begin to work then filter it, and an Ounce of Sugar being added to every Pint, and a gallon of White-Wine, and keep it stopped for use.

To make Jelly of Currants, to cool the Stomach and Throat if Thirsty.

THE Berries being mellow, put them with their stalks by Handfuls into a Cloth, and strain out the Juice, boil the Juice with its weight in Sugar to a right thickness, skim it often.

To make Marmaduke of Quinces.

HAVING par'd, quarter'd, and cor'd them, put them into a Pot, and bake them with Town-Bread, then bruise them well, and boil them, with
it

its weight in Sugar, to a just Thickness: good against Fluxes.

To preserve Cherries.

TAKE some of worst Cherries and boil them in fair Water, and when the Liquor is well coloured, strain it, then take some of the best Cherries you can get, with their weight in beaten Sugar, then lay one laying of Sugar and another of Cherries, till all are lain in the Preserving Pan; then pour a little of the Liquor of the worst Cherries into it, boil your Cherries till they be well coloured, then take them up, and boil the Syrup till it will button on the side of the Dish, and when them are cold, put them up in a Glass covered close with Paper until you use them.

To Candy Pears, Plumbs, Apricocks, Clear as Amber.

TAKE your Apricocks or Plumbs, and give every one a cut to the Stone in the notch, then cast Sugar on them, and bake them in an Oven as hot as for Manchet close stopt, let them stand half an Hour, then lay them one by one upon Glass Plates, and so dry them. In this manner you may Candy any other Fruit,

To preserve Green Walnuts.

BOYL your walnuts till the Water taste bitter, then take them off, and put them in cold Water, and peel off the bark, and weigh as much Sugar as they weigh, and little more Water than
U 4 will

will wet the Sugar, set them on the Fire, and when they boil up take them off, and let them stand two Days, and boil them again once more.

To preserve Currants.

Part them in the Tops, and lay a Laying of Currants, and a laying of Sugar, and so boil them as fast as you do Raspberries, do not put them in the Spoon, but scum them, boil them till the Syrup be pretty thick; then take them off, and let them stand till they be cold, and put them in a Glass.

To preserve Damsons, Red, or Black Plumbs.

Take the weight in Sugar, and Water enough to make a Syrup to cover them, so boil them a little therein being close covered, turning them for fear of spotting, let them stand all Night in their own Syrup, then set them upon a Pot of Seething Water, and suffer your Plumbs to boil no faster than the Water under them, and when they are both sweet and tender take them up, and boil the Syrup again till it is thick, then put up your Plumbs and it together in your preserving Glasses.

To preserve Gooseberries.

Take Gooseberries, or Grapes, or Barberries, and take somewhat more than their weight in Sugar beaten fine, lay one Laying of Fruits, and another of Sugar, till all are laid in your preserving Pan; then take 6 Spoonfuls of fair Water, and boil your Fruit therein as fast as you can, untill they be very clear, then take them up, and boil the Syrup by it self

self till it be thick; when they are cold put them in Gally-pots.

To make good Cherry Wine.

Take the Syrup of Cherries, and when it hath stood a while, bottle it up, and tye down the Cork, and in a short time it will be pleasant Wine.

To dry Cherries.

Take six Pound of Cherries and stone them, then take a Pound of Sugar and wet with the Juice of the Cherries, boil it a little, then put in your Cherries, and boil them till they are clear. let them lye in the Syrup a Week, then drain them from the Syrup, and lay them on thin Boards to dry, wash off the Clamminess with warm Water, and dry them a little longer.

To dry Pippins.

Take the fairest yellow Pippins, pare them, make a Hole through every one, then Parboil them in a little fair water, then take them up, and put them in as much clarified Sugar as will cover them, let them boil gently a little while in that Syrup, then take them out and put them into an Earthen Platter, and cast fine Sugar upon them, and set them in the Oven half an Hour, then take them out and cast some more Sugar on them, (being turned) and so three times, and they will be well dryed.

To make Verjuice.

GATHER your Crabs as soon as the Kernels turn black, and lay them a while in a heap to sweat, then pick them from the Stalks, Blacks and rottenness, then crush and beat them all to Pieces in a Tub, then make a bag of course Hair Cloth as big as your Presse, and press it as long, as any moisture will drop out, having a clean Vessel underneath to receive the Liquor, then run it up in sweet Hogsheads, and to every Hoghead, put 6 Handfuls Damask Rose Leaves, then bung it up, and spend it as you have Occasion.

To preserve Berberies.

TAKE one Pound of Barberies pickt from the Stalks, put them in a Pottle Pot, and set in in a Brass Pot full of hot Water, and when they be stewed strain them, and put to them a Pound and a half of Sugar, and put to them a Pint of red Rose-Water, and boil them a little. then take half a Pound of the fairest Clusters of Barberies you can get, and drop them in the Syrup while it boileth; then take the Barberies out, boil the Syrup while it is thick, and when cold, put them in the Glasses with the Syrup.

To make white Mead.

TAKE 6 gallons of Water, and put in 6 Quarts of Honey, stirring it till the Honey be thoroughly melted, then set it over the Fire, and when it is ready to boil Scum it very clean, then put a quarter of an Ounce of Mace, and as much Ginger, half an Ounce of Nutmegs, sweet Marjoram, dried Thyme, and Sweet Bryar, of all together an Handful, and boil them therein, then set it by

till.

till it be thoroughly cold, and then barrel it up, and keep it till it be ripe.

To make Jelly of Apples.

TAKE either Pippins, or John-Apples, and cut them into quarters, either pared or unpared, boil them in a good quantity of Water till it be very strong of the Apples, take out the clear Liquor and put to it a sufficient Quantity of Sugar to make Jelly, with the Slices of Apples; boil all together, till the Apples be enough, and the Liquor like a Jelly; or else you may boil the Slices in Apple liquor without Sugar, and make Jelly of the other Liquor, and put the Slices into it when they Jelly, and it is sufficiently boiled, put to it some Juice of Lemon an Amber, and Musk if you will.

Experienced Medicines.

First, Learn these Physical Marks.

20 Grains	}	{ a Scruple	3 }	thus marked.
3 Scruples	}	{ a Dram	3 }	
8 Drams	}	{ an Ounce	5 }	
12 Ounces	}	{ a Pound	16 }	

Note, That a Decoction, is boiling an Herb, &c. in Beer or Water, thus marked, Dec.

Tea is made by putting Herbs together in Summer Time, and dry'd, or other things into a Pot, and pouring boiling Water to it, and cover it and the Vertue of the Herb or Flower, is soon in the Water, but never, boil Flowers.

Ague. Being hot in Bed (an hour before the Fit is expected) drink the Dec. of Camomile, sweetened with Treacle, and sweat two Hours; or lay

to the Wrists Scot, Mustard, Rue, and Pepper, well mix'd together. *See Thirst quenched.*

St. Anthony's Fire. Take the Purge, and anoint with the Marrow of a Leg of Mutton, or Ointment *Nutritum* spread on Paper.

Burn or Scald. Lay on a bruised Union with Salt, and heal with *Nutritum*.

Bruises Inward. Drink the Dec. or Tea of Comfrey, and eat Bread and Butter with Honey.

Bruises Outward. Apply green Wormwood, and Hyssop beaten to a Plaister; or *Nutritum* for Cuts and black Bruises of the Eye.

Bound in the Body, or Costiveness. Take often Cream of Tartar, mix'd with Honey.

Boils. Eat shred Rosemary with Bread and Butter often, and apply Wheat Flour and Honey mix'd; or take the Purge.

Bleeding at the Nose. Stuff into your Nostrils Rabbit-Wool roll'd in Bole Arminack, chew Perewinkle in the Mouth, and hold in your Hands Knot-Grass and Solomon's Seal; Drink little.

Bellies swell'd in Children. Apply fry'd Wormwood with fresh Butter, fresh for three Nights.

Blood purged. Drink often of the Tea of Centery, or Ground Ivy; or of Sassafras Chips.

Breath short, or Asthma. Of Turmeric, Liquorice, Brimstone, and Elacampane Roots, of each two Pennyworth, mix them with Treacle, or rather Honey; swallow some Morning and Night.

Coughs. Drink at going to Bed, Brandy, Treacle, and Sallad Oyl; or mix Butter and brown Sugar well, use it at going to Sleep.

Consumption. Take six Tar Pills, and drink after them Syrup of Sanicle, or Horchound; or this, take 1 gallon of Spring Water, a quart of Sack, and 2
Calves:

Calves Hearts sliced thin, 100 of fresh Red Roses, and a good Handful of Hoarhound, bake these in a Pot with the largest sort of Town-Bread. Take six Spoonfuls often.

Cheps in the Hands. Wash them with your own Urine, and dry it in by the Fire; or a Plaister of *Mellilot Salve*.

Chops in the Nipples, or Lips. Wet them with Raisins roasted in a Fire-shovel.

Kib'd Hands. Soak them often in Water with *Allum* boil'd in it.

Cholick by Wind of a long Continuance. Beat the Hips of wild Roses (gathered in Winter) into Powder, and half so much sliced Nutmeg, mix and take some in your Drink, and doubt not of a Cure.

Convulsion Fits. Put the Powder of both, or either of the Roots of *Piony* in all your Drink, or the Juice of *Rue*.

Corns. Apply a Plaister of *Dyacholum cum Gummi*, Or a piece of a new Oyl'd Hat Case, so tender them and the hard Skin.

Cramp. Every Night rub your Toes with *Rosemary*, and smell to it.

Digestion Weak. Drink *Dec.* of *Centory*, but drink no hot Liquors, for that is apt to make the Stomach like coddled Apples.

Dropfy. Tun into all your constant Drink *Agri-mony*, *Pelitory* of the Wall, *Dog-Grass-Roots*, and the inner Peeling of the boughs of *Ash* and *Elder*, which powerfully provokes Urine, Yet chewing Tobacco is against all Diseases.

Deafness. If the Wax in the Ear be hard, then have the Oyl of bitter Almonds dropp'd therein, and a Week after let it be Syring'd with warm Water and Beer, but if the Wax in the Ear be ve-

ry thin, then put in a Tent dipt in *Melilot Plaister* and sake *Sneezing Powder* often, being warm in Bed.

Eyes Dim. The best Eye-water is your own *Urine*, often wet your Eyes with it. If full of *Rheum*, or you fear a *Pearl* or *Webb* is growing therein; take the *Yolk* out of an *Hens Egg*, and fill up the Place with the Juice of *Housleek*, and set the Shell on hot Coals to simmer a good while, it being covered; then put the clear into a snail Glass-Bottle, put a Drop thereof to the Eye every Night: Or use the distilled Water of *Half-Moon-Grass*, continue the Use of this some Months, and to the contrary Wrist apply *Hemlock* and *Salt*, and take the Purge.

Fever. Dec. of *Cammomile*, [See *Agues*] and sweat in Bed divers Mornings; and Dec. or Tea of *Carduus* to vomit; being covered take the Purge. See *Thirsty*.

Flux Take a Spoonful of the Powder of *Cinnamon*, half so much of beaten *Acorns* and their Cups with some *Loaf-Sugar*, and eat them half an Hour before Dinner. Or boil an Ounce and a half of whole *Cinnamon*, and a quarter of a Pound of *Loaf-Sugar*, in a Pint of Milk and a Quart of fair Water half an hour, drink the Liquor all in a Day, 'tis a Cordial; the *Cinnamon* may be used again for other uses.

Fainting. Drink the Tea or Dec. of *Mint*.

Fundament fallen out. Anoint with *Marsh-Mallows Ointment*, and scatter on it the Powder of *Mystick*, and with a warm Dish-Cloth strive to put up the Gue.

Feet to prevent their Galling. Rub them with common *St. p.* If Galled, lay on a Plaister of *Dyscholum cum Gummi*. If a hard Bunch on the Foot, let

let the same be on for some Months. *If they Itch much in Winter*, hold the Itching Places to the Fire a quarter of an hour with your Hose on; or bath them with the water wherein a good quantity of *Allum* is boil'd, do so to kib'd or swell'd Hands in the Winter, or that sweat too much in Summer. But for Chiblaíns for Hands and Feet, the Skin being off. one Plaister of *Burgamy Pitch* cures, which some foolish People are afraid to use, because it draws.

Face Scabby. *Nutritum* spread on thin Paper.

Gangreen'd Sore, or venomous biting. Hold the Place in warm Milk, applying the Lights of new kill'd Calves, and as one grows black, lay on more fresh Lights; but for the biting of a Mad Dog, see p. 193 in my Eighth Edition.

Griping in the Guts. Take a quartern of Brandy, slice a small Nutmeg into it, flame it a little over the Fire then having beaten the Yolk of an Egg with water and Sugar, put it to the other, whilst it is over the Fire, stir it to thicken a little; drink it all at going to Bed; it is a Cordial, gives Rest and Sleep to the Sick, and good against Chollic-Pains, Anguish, &c.

Gout, or Rheumatism. Take an Ounce of *Rhubarb*, as a Purge every six weeks, and apply Poppy Leaves between with Raisins; See *Dropsey*; but the constant Chewing of Tobacco is the best; and live on the plainest Diet, and drink no strong Drink, if you desire a constant *Health* of the Body.

Giddeness in the Head. Half roast an Egg, with a Spoonful of slit Pepper, and eat it; do so three Mornings together.

Gums Sore. Hold *Allum* in your Mouth often, (if you have not learn'd to chew the *Leaf* of *Tobacco*.)

co,) but they would not be fore, if you wash'd your Mouth after every Meal; for a Child use *Honey of Roses*, or *Honey and Allum* mixt.

Head-Ach. Drink often the Tea of *Rue*, *Sage*, or *Betony*.

Heart-burn. Put a Spoonful of *Chalk* in your Mouth, and wash it down with *Skim Milk*.

Jaundice. Drink the Juice of *Celandine* in *Beer* often.

Itch. One Pound of new *Lime* steep'd 24 Hours in a gallon of *Spring-Water*, pour the clear into a Kettle, and set a Pot with two Ounces of *Quick-Silver* in it, to boil half an hour, wet all the Itching places therewith; but a private Itching place, wet it every Morning with fasting Spittle, and take the Purge.

King's Evil. Take *Liquorish*, *Sweet Fennel Seeds*, and *Aniseeds*, of each two Ounces beaten, *White-Nettles*, and their Roots, of each an Handful, boil all these in a gallon of running Water till half is wasted, strain it, and when it is well settled, pour the clearest into a Bottle, put to it *Honey of Roses* two Ounces, Syrup of *Violets* and *Brown Sugar Candy* of each one Ounce, beaten small stir them altogether in a Glass Bottle, and shake it well every time you use it; Drink some of it often upon an empty Stomach, for three Months or more, but for a Child of two or three, or four Years old, give three or four Spoonfuls first and last, fasting an hour after, the Plaister of *Dyackolum cum Gummi* is good, but that made of *Figwort-roots* is best to dissolve hard Swellings.

Lice in Hair of Men or Beasts. The Powder of *Savesacre* mixt with *Water* or *Butter*, it is called also *Louse-Powder*.

Melancholy.

Melancholly Eat often of *Cream of Tartar* mixt with *Honey* or *Treacle*. shun all Musick Meetings, and Meditations on *Christ's Suffering* for all Sinners that they might hate Sin; for to live in the fear of God, causeth continual joy (*Gal. 22*) Then nothing brings sadness in the Heart, (but Sin) *Prov. 15 15*.

Madness. Hold him under Water until he is almost drown'd, put him into Bed in a dark Room, and his Diet only Milk Pottage, half Water.

Piles. Drink often of the Tea of *Tarrow*, Eat mostly *Bread and Butter*, sit over the Fume of *Olibanum*, *Myrrh*, and *Frankincense*, or hot Coals.

Poison newly taken. Drink Sallad Oyl mixt with *Cream of Tartar*, and put a Feather in your Throat to Vomit.

Pain coming suddenly. Lay on a warm piece of Tyle, wrapt in brown Paper: If a *Plurisie*, Chafe in Ointment of *Marsh-Mallows*, mixt with a little *Liquid Laudanum*, and sweat in Bed: Or take the *Dec.* of *Cammomile*.

A Purge safe for all. Take *Cream of Tartar* one Ounce, *Falap* and *Brimstone* of each a quarter of an Ounce, let the *Falap* first be beaten into fine Powder, before you beat them together, that they may be well mixt together in a Mortar; but if you are hard to work upon, put of *Falap* two Drams more.

Poultice, some call it a Bath. Boil white Bread Crumbs in *Spring-Water* to a right Thickness, then stir into it a little *Butter* or *Suet*, apply it, new made twice a Day, to Sores, Pains, Strains, Broken Bones, &c. Some cure Sore Legs, besides this dip a Flannel in hot Soap Suds and bath the Leg often, Drinking the Tea or *Dec.* of *Centory* constantly some do great Cures with this.

A Collection of choice and safe Remedies, very useful in most Families, and fitted for the Service of Country People.

I. *For Agues.*

TAKE Salt of Card. Benedict. and Salt of Wormwood, of each 15 Grains; Tartar Vitriolate half a Scruple, mix them, and give them in a few Spoonfuls of Rhenish Wine, or some other convenient Vehicle, either before the Fit, or when the Stomach is empty.

II. *An Amulet against an Ague.*

Take a Handful of Groundsel-shred, and cut it small put it into a square Paper Bag about 4 Inches every way, pricking the side that is to be next the Skin full of large Holes, and cover it with Sarcenet or fine Linnen, that nothing may fall out. Let the Patient wear this upon the Pit of the Stomach, renewing it two Hours before every Fit.

III. *A Tertian Ague to Cure.*

Take Crude Allum and Nutmeg finely scraped, of each about half a Dram, mix the Powders well together, and with about six Grains of Saffron: Give this in two or three Spoonfuls of White Wine Vinegar at the usual Time.

Melilot Plaister made in June.

TAKE *Melilot*, *Pimpernel*, and *Scabious* of each two Handfuls, beat them small, then beat them in a Mortar with two Pounds of try'd Hogs *Seam*, so let it stand in the hot Sun-shine seven or eight Days, then melt it and strain it well, and add as many more Fresh Herbs, and set it in the Sun as before, and melt it and strain it, and then boil it until the Juice is consumed, and put to the Fire, and put it to the beaten *Rosen*, *Bees-Wax*, and *Venice Turpentine*, of each one Ounce, stir it to cool, stirring into it a Dram of Musk, keep it in a Pot, or in Rolls.

For Hollow Ulcers. Melt some, and dip a Tent made of Linnen, or Tow, according to the hollow-ness of the Ulcers, first rolling the Tent it *Burnt-Allum*, as you see Cause, remembering to make the Tent less and less, as the *Fistula* lessens, and lay a Plaister on the same, and if the Sore be in the Leg, lay over all a large Paper, spread with *Nutritum*, to drive back Humours from flowing down to the Sore, and if your Body be foul, take the Purge above, always remembering to Purge well after you be cured of any Distemper: As to the precious Oyl of Charity, see p. 195. of a former Edition of this Book.

Small-Pox. Being warm in Bed, drink mull'd Ale with *Marygold Flowers*, and sweat a little, to bring out the Pox, and keep them up. take *Brimstone* and *Treacle*: In a sickly time, drink the Tea of Rue before you go abroad.

Rickets. Boil 6 *Huse-Snails*, with their Shells, one in a Pint of New Milk till one half is wasted, give

give the Milk to the Child for Breakfast, and at four in the Afternoon mince the Snails and heat them, and let it eat them as other Meat; then anoint his joints with the Oyl of what follows, *viz.* Bake *Black Snails* and *Cammomile* with *Town-Bread*, and the Oyl will swim at the top.

Running of Reins. Take fine Boile, sealed Earth, and Dragon's Blood, of each one Ounce, Conserve of Roses three Ounces, mixed, and take the Quantity of a Nutmeg first and last. Drink no Strong Drink, nor eat Sugar'd Meats.

Spleen. Fill a Glass Bottle with the small Twigs of *Tamerins*, then, with *White Wine*, drink some at Morning.

Swelling that comes suddenly. Boil *Smallage*, *Mallows* and *Cammomile*, in *Milk* and *Water* till they are tender, moisten it with a little *Seam* or *Butter*; lay it on twice a Day, or use the Poultrice above.



A Catalogue of the Countries, Cities, Market-Towns, and Parishes in England and Wales.

Counties in England	Cities	M.	T.	Counties in England	Cities	M.T.	Par.
Bedford	0	10	116	Somerset	3	21	383
Berks	0	12	240	Stafford	1	18	130
Buckingham	0	15	185	Suffolk	0	30	575
Cambridge	1	8	163	Surry	0	7	140
Chester.	1	3	85	Suffex	1	18	312
Cornwal	0	23	161	Warwick	1	15	158
Cumberland	1	15	58	Westmorel.	0	8	26
Derby	0	10	106	Wilts	1	23	304
Devon	1	32	394	Worcester	1	11	132
Dorset	0	19	248	York	1	49	503
Durham	1	6	118				
Essex	0	21	415	Wales.			
Gloucester	1	26	280				
Hantsire	1	16	253	Anglesey	0	2	24
Hartford	0	8	120	Brecknock	0	4	61
Hereford	1	8	176	Cardigan	0	4	46
Huntington	0	6	79	Carmarthen	0	8	81
Kent	2	30	408	Carnarvan	0	6	68
Lancaster	0	26	61	Denbeigh	0	4	57
Leicester	1	12	192	Flint	0	3	28
Lincoln	1	36	630	Glamorgan	0	9	118
Middlesex	2	4	73	Merioneth	0	3	37
Monmouth	0	7	227	Montgomery	0	8	47
Norfolk	1	28	660	Pembroke	0	8	145
Northampton	1	13	326	Radnor.	0	4	59
Northumberl	0	6	460	Islands			
Nottingham	0	9	168	Man-Island	0	5	14
Oxford	0	15	280	Wight-Island	0	0	39
Rutland	0	4	48	Jersey	0	0	
Salop	0	19	170	Guernsey	0	0	10

The Use of the foregoing Table.

THE First Column is the Names of the Counties in England and Wales.

The Second, The Number of Cities.

The Third, The Number of Market-Towns.

The Last Column, The Number of Parishes.

The Number of Shires in England and Wales are 52; Parliament Men 510; Market-Towns 713; Parishes 9241; Bishop icks 26; Castles one 186; Rivers 555; Chases 13; Forests 68; Parks once 781; Cities 25; Bridges 956; Universities 2.

Note, The Shires, 'tis said, were first made King Alfred, (about the Year of our Lord Christ 880) for the easier and speedy Administration of Justice

Note, That instead of Hundreds, Durham is divided into Wakes, Cumberland and Westmoreland into Wards.

Also some Counties are more generally divided than into Hundreds, as Yorkshire into three Ridings; Kent into five Laths; Sussex into six Rapes; Lincolnshire into these Parts; as Lindsey, Kesteven, and Holland. And every Householders was divided into Tythings, each consisting of ten Familiess who were bound to the King for the good Behaviour of each other: And if any in that Division committed any Crime, the other nine Hundreds were to attack and bring him to Punishment, or else to make good the Damage done by the Malefactor, and take an Oath before the Officers of the Hundred, that they were no ways accessory to the Fact, and that they would bring the Offender to Justice if they knew where he was, or could get him. The Principal Person in each

each of these Tythings was called the *Head-Borough*, or *Tything-Man*, and his Office was much of the Nature of our *Constables* now. This was a wise Institution, and kept the Country much in awe [*Daniel's English Hist.* A. D. 1087.

Upon the Garter of the King's Arms is written this Motto, *Honi soit qui mal y pense*; in English thus, *Shame be to him that Evil thereof thinketh*: Spoken by King Edward III. after he had taken up a Garter (it's said) of the Queen, or the Countess of Salisbury, slipping off in Dancing, his Lords there present smiling; this King made several Knights of the Garter (so called.)

And the Motto at the bottom of the Arms is written, *Dieu & mon Droit*, thus in English, *God and my Right*; first spoken by King Edward I. after he had gain'd a great Victory, saying, *Not we have gain'd this Victory, but God and our Right.*

England, with Scotland being an Island, is called *Great-Britain*, who formerly did for many Years War against each other; Scotland was happily united to England in the Year 1708, by the Great Wisdom of our Gracious Queey A N N E

Curiosities in *London* and *Westminster*.

I Shall begin with *London* the Chief City, not only of this County, but of *Great-Britain*; and may without partiality, or just offence to Foreigners, be truly esteemed a City as Ancient, Spacious, Rich, Populous, and Beautiful, as is known in Europe.

rope, if not in the World. Tis said to be built 600 Years after the Flood.

The Length from E to W. is about 5 Miles, breadth from N. to S. 2 and a quarter, Circumference near 23; area 2288 Acres, wherein are contained 945 large Streets and Lanes, 2252 lesser Streets, Lanes, Alleys, Rows, Courts, Yards, &c. 20 Markets, 20 fine Squares; 2 Cathedral Churches; 100 Parochial (besides 50 more by Act of Parliament, to be built) 27 Chapples, 4 Colledges, 24 Free Schools, besides many hundreds of Private ones) 49 sumptuous Halls, for Companies (besides the *Royal-Exchange*, *Guild-Hall*, and other stately Structures) 70 Incorporate Companies, 5 Bridges, 15 Cates, about 107000 Houses, 535000 Persons, 103700 Fighting Men.

London, exclusive of *Westminster* and *Southwark*, is divided into 26 Wards, each of which hath an Alderman, who is in that Office for Life, and one of which is Annually chosen to preside over the whole, and for that time hath the Title of Lord Mayor. He is elected to that Office by the Aldermen, out of 2 of the 26 (of whom they do of late Years, always take the Senior in Office) returned to them by the Livery Men, who are about 6000 in Number, and are composed of the best part of the said Incorporated Companies; most of whom on the Lord Mayor's Day, (being the Day he is sworn at *Westminster*,) appear in their habits of Furr'd long Gowns, with their Atchievements on rich Banners; and Musick marching before them, when the Lord Mayor and Aldermen, in their rich Scarlet Gowns, and splendid Carapison make a Sumptuous Cavalcade.

The Lord Mayor does also exercise Jurisdiction in the Borough of *Southwark*; which is on the S. side of the River *Thames*, and on the River; from the Mouth

of the River *Midway*, *Westwards* to *Stains bridge* being about 60 Miles. And for the better Government of the whole there are held upwards of 20 Courts of Law; within the Bills of Mortality.

The Ecclesiastical Government, is by a Bishop, an Arch Deacon, and the Dean, and 3 Residentaries of *St. Paul's*; the Archbishop of *Canterbury*, hath also 13 peculiars being Parishes, in the Bills of Mortality, under his Government. The first Arch-Bishop of *London* was about *Anno*. 185. the first Bishop about 604. And there hath been a Succession of 86 Bishops in all.

The Military Government of *London*, is by Commission, from the Queen constituting of many; (perhaps about a 100) of the chief Citizens a Lieutenancy, whereby they are invested with Power, as the Lord Lieutenants of Counties, to appoint Officers for, and direct and command in chief the 6 Regiments. Here is also the Artillery Company, Incorporated by Patents, for Improvement of Marshal Discipline, and serve as a Nursery for Officers of the Trained-Bands.

The Civil Government of *Westminster*, is by a high Steward; commonly one of the prime Nobility; his Deputy (who sits and determines Causes at *Westminster*, in Sessions) an high Bayliff, and 7 Burgessees, who govern the 9 Wards, into which *Westminster* is divided.

The Spiritual Government of *Westminster*, is by the Dean and Chapter; who also in many Cases have Authority in Civil Affairs, and they have the Election of the high Steward.

The Military Government of *Westminster*, and that part of the Suburbs adjoining, which is within the Bills of Mortality, but in the County of *Middlesex*.

is by a Lord Lieutenant, and 34 Deputy Lieutenants. And thus having by a kind of digression, given the Stranger a short Account of the Magnitude, Populoufness, and Government, of the Metropolis of *Great-Britain*. I shall proceed according to my chief design, to take Notice of such Things as are worthy of his View.

In and relating to St. Paul's Cathedral may be observed,

As curious Carving in Stone and Wood, and fine Iron-work, as can perhaps any where be found; and in general, the Magnificence, Strength, Beauty and Enrichments of the whole are very remarkable; particular things that may be taken notice of are, 1. The Dome; 2. The West Pediment, where the History of *St. Paul's* Conversion, is lively represented in Stone; 3. The West Marble Door-case, and the Scripture stories finely carved in Relievo, which are round about it. 4. The neatness of the Iron-doors, especially those opening into the Choir under the Organ; the Iron-work round the Inside of the Dome, &c. 5. The beauty of the Outer-door Cases, the Roof and between Arches, the North and South Porticos, and Pediments, &c. All exquisitely cut in stone; 6. The very beautiful carving in Wood, or enrichments, as Cherubims, Fruit, Leaves, &c. especially in the Choir, and about the Organ-case; 7. The fine Painting and Gilding about the Altar, as *Lapis Lazuli-Pilasters*, Glory, &c. The Marble Footpace within the Rails; 8. The very ingenious Veining of the Pulpit. 9. The sliding-doors, for the Aperture, entring into the Choir; 10. The neatness of the Confistory, and Morning Prayer Chappel, Library and Vestry, and the rich Gold Plate there; 11. The Pavement of the whole Church, w^hich is Marble;

12. The Whispering-place, and double Roof above;
13. The spaciousness of the Vaults below, with the
old and new Monuments therein; 14. The curious
Clock-work, and very large Bell on which the Hour
is struck, weighing 4 Ton, 4 Hundred, and 4 Pound;
15. The exquisite and noble Figures of Queen Anne.
with those of her Dominions, Britain, France, Ire-
land, and America, on a spacious Marble Pedestal,
before the West Front; 16. The vast quantity of
strong Iron Palisading round the Church-yard; 17.
The Models of the Church. And, 18. The designs
given in by several of the greatest Masters of Histo-
ry Painting, for the inside of the Dome, &c.

This Church was 1st. Founded by King *Ethelbert*,
Anno 610, and having in the Year 1666, been al-
most consumed in the Conflagration of the City; the
rest was taken down, and the Foundation of this
present Church laid *June* 21, 1675. And the charge
of this building to *Midsummer* 1706. was (accord-
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particularly expressed) *£*. 536295 : 12. : 01 $\frac{1}{4}$ So
that the whole charge, to the finishing, will proba-
bly be about 700000*l*.

As to the Dimensions; Its length is about 500
foot, breadth between the Portico's 249 Foot, the
Circumference 2292 Foot, (or near half a Mile) The
Area of the Ground Plot 2 Acres, and 16 Perches.
Altitude over the middle Isle 88 Foot. Of the W.
Towers 208 Foot, and of the whole Dome 340
Foot. The length of the Cross 10 Foot. Diameter
of the Ball 6 Foot. Circumference 18 8 Foot. So-
lidity 113 Foot. Capacity 90 Bushels, and the Con-
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Westminster-Abby] hath many things in it curious and observable. As 1, The fine Glass-Paintings; 2. The

The curious new Marble Altar-piece. 3. The neatness of the Choir. 4 The curious Monuments fixed to the Walls and Pillars, round the Isle; as of Sir *Cloudfly Shovell*. (the Famous Admiral,) Mr. *Stepny*, a Foreign Ambassador, &c. in the S. Isle. Of Divines, Antiquaries, Poets, &c. As Dr. *Barrow*, Dr. *Oughtram*, Dr. *Buxby*, Dr. *Horneck*, Mr. *Camden*, *Chaucer Spencer*, *Drayton*, *Cowley*, *Shadwell*, about the S. Stem of the Cross Isle. And not far from the W. end of the Church, and near the N side is the Inscription, O Rare Ben. *Johnson*, in Memory of that Poet.

From the S. Stem of the Cross Isle, round about the E. end of the Church, to the N. Stem, are a 11 Chapels, many of which are adorn'd with magnificent and rich Shrines, Tombs, and other Monuments, which are for the most part in memory of Kings, Queens, and prime Nobility. For the seeing of which every Person payeth 3d. the Money arising whereby, is divided among the Minor Canons.

1. *In the Chapel of St. Benedict.*

Here are Monuments in memory of, 1. Dr. *Goodman*, 40 Years Dean of this Church. 2. The Countess of *Hertford*. 3. *Simon Langham*, Abbot of this Monastery. 4. *William Bill* Dean of this Church; and *Almoner*. 5. *Lionel Cranford*, Earl of *Middlesex*, Lord high Treasurer of England, and his Lady.

2. *In the Chapel of St. Edmund.*

Monuments here are, 1. In memory of *William de Valance*, Earl of *Pembroke*. 2. *Edward Talbot*, Earl of *Shrewsbury*, and his Lady. 3. Sir *Richard Pecksal* Knight, Master of the *Buckhounds*, to Queen *Elizabeth*. 4. *Humphry Bourchier*, slain in the Battle of *Barnet*, between the Houses of *York* and *Lancaster*. 5. Sir *Bernard Brocas*, Chamberlain to *Richard* the 2d's Queen.

Queen. 6. *John Lord Russell*, Son to the Earl of Bedford. 7. *Elizabeth* the Daughter of *John Lord Russell*, who is said to have bled to Death, With pricking her Finger. 8. *Francis Hollis*, Son to the Earl of Clare, a Youth of great Valour and Learning. 9. *Frances*, Dutcheſs of *Suffolk*, Grandchild to King *Henry VII.* 10. *William* of *Windsor*, and his Sisters, Children of *Edward III.* 11. *John Blitham*, Earl of *Cornwall*, 2d. Son to King *Edward II.* 12. *Elenor de Bohun*, Dutcheſs of *Gloucester*, Daughter in Law to King *Edward III.* 13. *Robert Walby*, Archbishop of *York*. 14. The Counteſs of *Stafford*. 15. The Lady *Jane Seymour*, Couſin German to King *Edward VI.* 16. Lady *Catherine Knowles*, Couſin German to Queen *Elizabeth*.

3. *In the Chapel of St. Nicholas.*

This is the 3d. *Eastward*, and therein are Monuments in memory of, 1. *Sir George Villars*, and his Lady. 2. *Philippa*, Dutcheſs of *York*; her Husband was Grandſon to *Edward III.* and kill'd at the Battle of *Agin-Court* in *France*. 3. *Elizabeth*, the Daughter of the Earl of *Rutland*. 4. *Winifred*, Marchionefs of *Wincheſter*. 5. *William Dudley*, Biſhop of *Durham*. 6. The Lady *Burley*, and her Daughter *Anne*, Counteſs of *Oxford*. 7. *Sir George Fane* and his Lady. 8. *Sir Nicholas Carew*, and his Lady. 9. *Anne*, Dutcheſs of *Somerſet*. 10. The Lady *Elizabeth Cecil*, Daughter of the Lord *Cobham*. 11. The Lady *Jane Clifford*, Daughter of the Duke of *Somerſet*. 12. *Sir Humphrey Stanley*, one of the Gentlemen of the Bed-Chamber to *Henry VII.* And here is in a Gold Cup, placed on the Vertex of a Marble Pyramid, the Heart of *Anne Sophia*, Daughter to Count *Bellamont*.

4. *In the Chapel of St. Paul.*

It is next North-westward, to the Steps that leads up to Henry VII's. Chapel, wherein are Monuments in memory of, 1. Sir John Puckering, Lord Keeper of the Great Seal to Queen Elizabeth, and his Lady. 2. Sir James Fulberton, first Gentleman of the Bed-Chamber to King Charles I. 3. Sir Thomas Bromly, Lord Chancellor to Queen Elizabeth. 4. Sir Dudley Carleton, Viscount of Dorchester, frequently employed in Embassies. 5. Frances, Countess of Suffex. 6. Francis, Lord Cottington, twice Ambassador in Spain, Lord high Treasurer, Constable of the Tower, first Master of the Court of Wards, and Chancellor of the Exchequer to King Charles I. and his Lady. 7. Lewis Robsent, Lord Bouchier, Knight of the Garter, and Standard bearer to King Henry V. 8. Sir Giles Daubney, Lord Chamberlain to King Henry VII.

5. *In St. Erasmus Chapel.*

(Which is the next, Westward to the last) are Monuments in Memory of, 1. Sir Thomas Vaughan, Knight, Treasurer to King Edward IV. 2. Thomas Cary, second Son to the Earl of Monmouth, 3. Hugh and Mary de Bohun, Grand Children to King Edward I. 4. Henry Cary, Baron Hunsdon, Lord high Chamberlain, Privy Counsellor, and Cousin German to Queen Elizabeth, Governour of Berwick, Captain of the Band of Pensioners, Justice in Eyre on this side of the Trent, and Knight of the Garter, with his Lady; 'tis very magnificent. 5. William of Colchester, Abbot of Westminster. 6. Thomas Ruthel, Bishop of Durham, Secretary to Henry VII. 7. George Flaccet, Abbot of this Church. 8. In the middle of the Arca a spacious and beautiful Tomb in memory of Thomas Cecil, Earl of Exeter, Privy Counsellor to King James I. Knight of the Garter, and his first Countess, there

is room left for the Figure of his second Wife, but she refused to have it lie towards his Left-hand. 9. Of Colonel Popham.

6. In the Chapel of St. Edward the Confessor.

This is the situate cross the Isle, from the last Chapel, and up a few Steps; at the E. end of the Choir. Here are Monuments in memory of *Edward I.* and *Eleanor* his Queen. 2. The noble and rich Shrine of *St. Edward the Confessor*. 3. The Monument of King *Henry III.* Founder of this Church. 4. Queen *Matilda*, Wife to *Henry I.* 5. Of *Henry V.* who conquered *France*, his Head they tell you being, Silver was stoln away. 6. *Edward III.* that Famous Warlike King, and his Queen *Philippa*. 7. *Thomas of Woodstock*, the sixth Son of *Edward III.* 8. *Richard II.* and his Queen *Anne*. 9. *Elizabeth* Daughter of *Henry VII.* 10. Lady *Margaret*, Daughter of *Edward IV.* 11. *John Waltham*, Bishop of *Salisbury*. 12. Queen *Catharine of Valois*, Wife to *Henry V.* 13. *Edmund Crouchback*, Earl of *Lancaster*, Son to *Henry III.* and his Wife. 14. *Aymery de Valence*, (a Knight Templar,) Earl of *Pembroke*, Cousin to *Henry III.* 15. King *Sebert*, and his Queen; he was one of the first Founders of this Church.

Here are also the Chairs, wherin the Kings and Queens have been usually Crowned, one is of great Antiquity, brought many hundred Years ago from *Scotland*; under the Seat thereof is the Stone (they tell you) which *Jacob* made his Pillows.

7. The Chapel of the Blessed Virgin; commonly called *Henry the VIII's*.

This Chapel is situate up the Steps; at the most Easterly end of the Church. It is with its Monuments,

ments, one of the most curious Prospects that a Traveller can see in *England*, or perhaps elsewhere.

1. The Chapel itself is remarkable for the most exquisite Workmanship of its Roof. 2. The vast number of Figures curiously cut in Stone, which do almost in all places enrich the Walls. 3. The Glass Painting. And, 4. For the 3 curious and Massy Doors of Fine Brass, which open at the *W.* end.

I shall mention the Monuments in the order they stand, and are shewn, begining at the *N. W.* Angle. As, 1. You have the Effigies of the Duke of *Albmarle*, (or General *Munk*) in a Wainscot Case. 2. A Monument in memory of the Lord Marquis of *Hallifax*. 3. A noble and magnificent one in memory of Queen *Elizabeth*. 4. A curious one in memory of *Sophia*. And, 5. Another of *Mary*; Daughters to K. *James I.* 6. Of *George Villars*, Duke of *Buckingham*, very stately and curious. 7. *Henry VII's*. Tomb and Screen, very spacious and and admirable Workmanship of Solid Brass, Polished and enriched with various Figures, besides those of the King and Queen. 8. The Effigies of the Dutches of *Richmond*, in her Robes, in a Wainscot Case. 9. The extraordinary noble Brass Monument of the Old Duke and Dutches of *Richmond*. And on the Area of that little Chapel, are deposited in their Coffins, 10. The Bodies of *Don Pedro de Ronquillo*, the Spanish Embassador to K. *William III.* And, 11. That of Count *Briancon*, Minister of the Duke of *Savoy*, to Queen *Anne*. 12. The Effigies of King *Charles II.* curiously done in Wax, habited in his Robes, as Sovereign of the noble Order of the Garter. 13. The next Tomb *Westward*, is in memory of *Margaret*, Countess of *Richmond* and *Derby*, Mother to *Henry VII.* 14. Immediately *W.* from that, is a very magnificent Monument,

ment, in memory of *Mary*, Queen of *Scots*. Mother to King *James I.* 15. Westward from the last, is a very rich and costly Monument. for *Margaret* Countess of *Lenox*, Grand-mother to King *James I.* and her Children; she was nearly Allied to Eleven Kings and Queens.

9. *The Chapel of St. John Baptist.*

This is the 3d *W.* from the bottom of the Steps, leading to King *Henry VII.* Chapel in the *N.* Isle, and here you see the fine Monuments 1. Of Sir *Christopher Hatton*, Son and Heir of *Christopher* Lord Viscount *Hatton*; High Chancellor of *England*: And of *John Islip* Abbot of this Church, and a good Benefactor to it, &c.

9. 10. 11. These 3 Chapels are Westward from the former, and in a Row being laid together as one, fronting the *W.* in the *N.* Stem of the cross Isle, their Names are,

1. *St. John Evangelists*, 2. *St. Michael*, and 3. *St. Andrews*. Where are curious Monuments in memory of, 1. Sir *John Harpendon*, 2. Sir *George Hollis*, a Major General, Brother to the Earl of *Clare*; 3. Of Sir *Francis de Vere*, Captain General of the *English* Forces in the *Netherlands*; it is a Marble Table supported on the Shoulders of 4 Armed Men; 4. The Lady *Catharine St. John*; 5. Of the *Duchess* of *Somerset*; 6. Of Sir *Francis Norris* Knight, afterwards Baron *Norris* of *Rycot*; this last is a very spacious Tomb; adorn'd with Columns supporting a rich Canopy, Figures, &c.

This Church of *St. Peter Westminster*, is a stately ancient structure of the *Gothick* Order, the noble lofty Roofs, supported by large Marble Pillars of that Order. 'Tis said to have been first Founded by *K.*

Lucius, about the Year 170; Afterward by King *Sebert*, *Edward* the Confessor, *Edward* I. *Edward* II. and *Henry* III. who built the Church now standing.

Its length is 354 Foot (excluding *Henry* VII's Chapel) breadth of the *West* part 66 Foot. length of the cross Isle, 189 Foot. Altitude, of the middle Roof 92 Foot.

Other Curiosities about London and Westminster are.

Westminster-Hall] One of the largest Rooms in *Europe*, not supported by Pillars: 'Tis about 228 Foot in length, 66 in breadth, and 90 in Altitude, built by *William Rufus*. Here are held the high Court of Chancery. Queens-bench, and Common-pleas. And the Colours and Standards, taken at the Battle of *Hockstedt*, are in the Hall exposed.

The Houses of Lords and Commons] where the Throne, the Woolpacks and Places, for the Lords and great Officers; as also, the fine Tapstry Hangings in the former are very remarkable.

The Palace] (where Queen *Anne* was born 1664.) and Chapel of *St. James*. Here in the great Court, is a Whales Rib, in length about 21 Foot, and 21 Inches in Breadth or Diameter in the thickest part, and at *White-Hall*, the Banqueting-House, and Statue of King *James* II. in Brass, with the Dial in *Privy-Garden*, are observable.

The Fine Houses] of the Duke of *Buckingham*, and *Marlborough* and the Canal and *Mal*, in the Park, may be observed.

The Duke of Mountague's House] is also very remarkable for curious Finishing and Furniture.

Winstan.

Winstanley's Waterworks] are observable for the ingenious dexterity of managing the Water, and disposing the Streams.

A curious Equestrian Statue of Brass, representing King Charles I. at Charing-Cross.

Somerset-House] One of the Queen's Palaces, with the Gardens and Statues.

The Temple Church] A beautiful ancient Structure of the *Gothick* order. It was founded by the Knights Templers, about the Year 1118, who being overgrown with Riches and Vice; were dissolved 1324. Here are the Figures done in Marble, of 9 of the Knights Templers, in their Habits, with Swords, Armour and Shields, their profession having been to Vindicate Christianity, and protect Pilgrims in their Travels; to visit the Holy Land and Sepulchre of our Saviour. They have probably been here about 490 Years.

The Royal Exchange] is an extraordinary, magnificent, and beautiful Structure, and enriched with curious Statues of many of our Kings and Queens, placed in Niches round the inside, It was Founded by Sir Thomas Gresham, Anno 1566, was so called by Queen Elizabeth; but being burnt by the general Conflagration of the City in 1666, this Structure (which cost about 50000*l.* Sterling) was Built at the charge of the City, and Mercers Company, and the first Stone laid by King Charles II. Anno 1699 situate in Cornhil.

BOOKS Sold by *S. Clarke*, Bookseller
at the end of *Exchange Alley* in *Birchin-Lane*.

Dr *Tillotson's Work*, III. Vol. Fol.
Burnet's History of the Reformation, III.
Vol. Fol.

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