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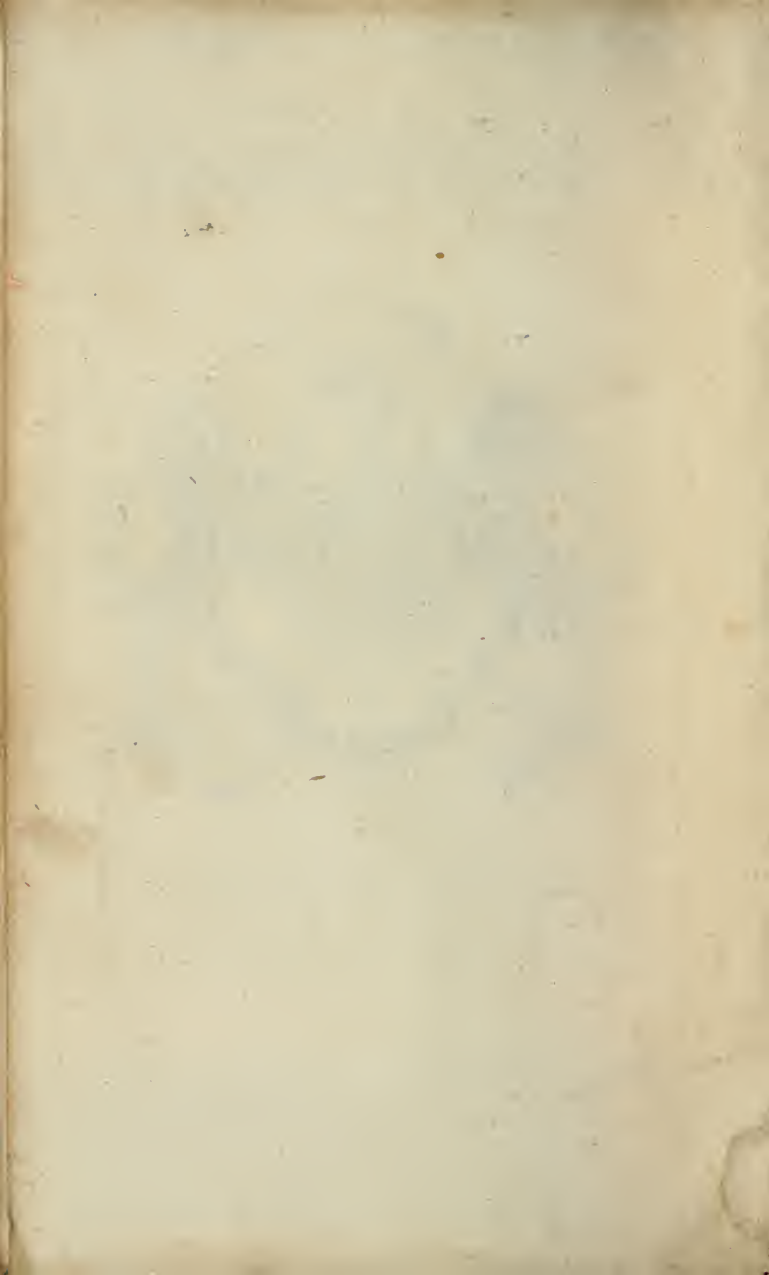


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1862.



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Cryptomenysis Patefacta :

Or the

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O F

SECRET INFORMATION

Disclosed without a KEY.

Containing,

Plain and Demonstrative Rules,

for Decyphering all Manner of SECRET WRITING. With Exact Methods, for Resolving Secret Intimations by SIGNS or GESTURES, or in SPEECH. As also an Inquiry into the Secret ways of CONVEYING Written Messages: And the several MYSTERIOUS PROPOSALS for Secret Information, mentioned by *Trithemius*, &c.

J. Falconer By J. F.

Et varias usus meditando extunderet Artes.

Virg. G. I.

L O N D O N,

Printed for *Daniel Brown*, at the black Swan and Bible, without Temple-Bar, 1685.

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TO THE
RIGHT HONOURABLE
CHARLES *Earl of MIDDLETON,*
Lord *Claremont* and *Fettercairn,* &c.
Secretary of State for the King-
dom of *England,* and one of His
Majesties most Honorable Privy
Council of both Kingdoms.

My Lord,

Having Writ a few Sheets,
to lay open the Incertainty
of Cypher ; and Decy-
phering, being an Art consecrate to
the Occasions of Princes, I do Hum-
bly prefix your Lordships name to them:

A 3

The

The Epistle Dedicatory.

The thing is designed for His Majesties Service, and that gives His Secretary a good Title to it : But my Lord I had other Motives for this my Presumption, besides your Eminent Station; I mean, the more Eminent Adherence of your Noble Family, to the Interests of the Crown ; at a time when he was accounted the only Traytor, that dared not commit Treason. His late Majesty of ever Blessed Memory, and Judgment, next to infallible, had so much Confidence in the Conduct of your late Father ; That he gave him the command of that Army in the Hills, which then only appeared for his Majesties Interest, and might have been the means to restore Him,
had

The Epistle Dedicatory.

*had not Providence suited a Bloodless
Restauration to a Gentle Reign,
tho Rebel's Blood stains not. And when
His Majesty, was Miraculously settled
upon the Throne of his Ancestors; He
first chose the Earl of Middleton, out
of all His Loyal Subjects in his Anci-
ent Kingdom, immediately to Repre-
sent Him, as His Commissioner; the next
Representation of Majesty it self a
Subject is capable of: And His Lordship
died bearing part of that Sacred Image,
as Governor of Tangier. This leads
me to your Lordship, and I have the
Authority of Custom, to go on, for De-
dications are generally Panegyricks,
and Authors either find, or make their
Patrons singular: But I forbear, be-*

The Epistle Dedicatory.

cause, tho' I should say nothing, but Truths, within the small reach of my own Knowledge; as I might exceed, the Belief of Strangers, so I must come short, of the Expectation of all, who know your Lordship: And as the Subject treated of, (for the most part) lies out of the common Road, so the manner of this Address to your Lordship is Suitable; having here so far shun'd the Imputation of Flattery, that I designedly shade evident Truths, while others Blazon Palpable Formalities.

And now my Lord, though I Dedicate the following Observations to your Lordship, I hope none can fancy that the Defects, under what Designation

The Epistle Dedicatory,

nation soever may reflect upon you, I know it is a Critical Age, and Criticks have much of the Venom and Nature of Wasps, often observed, to make Sores where there are none to fix upon. But their Ignorance, as well as Malice is sufficiently ridiculous, that do not lay the Faults of this, whether Real, or Imaginary, entirely at my own Dore; and there is Ground enough to throw them on: Let all, be imputed to want of years, or Judgment; and let this humble Address, be call'd want of Discretion; Nay there are plenty of WANTS: But I HAVE an intire Inclination, to serve my King and Country; and if this small Tract, at this time, do in any Measure Evidence it, I HAVE my aim,
and

The Epistle Dedicatory.

and let it remain upon record to my perpetual Infamy, if I do not chearfully, and upon all occasions venture the last drop of my Blood in His Majesties Service; and according to the Circumstances, Act or Suffer for one infinitely BETTER than the GOOD OLD CAUSE. And next to the Royal Interest, I declare, That my great Ambition in particular, is to be,

My Lord,

Your Lordship's

Most Humble, and

Most Obedient Servant,

John Falconer.

T O T H E
R E A D E R.

YOU will find amongst the following Observations, that by means of Secret Intelligence, not only Armies, but Kingdoms and Crowns have been lost. Which Things had never otherways, perhaps been attempted, at least not effected. And particularly, That in the beginning of the late Troubles, of ever Cursed Memory, the Canting (I would say Covenanting) People of both Kingdoms, studied a part of this BLACK ART, * as their first degree in the MYSTERY of Rebellion, which ended not before the Faith's Defender was removed to make way for Religion, and the Laws of God and his Vicegerent were overturned to secure property: In short untill there was nothing Consequential visible in some Mens actions, but only in that of Providing Asses for the Pulpit, and sending Horses to Church.

See Bakers
Chron. of
the Kings
of Engl.
P. 492.

And certainly he wants the Head or Brains of a Plotter, (tho he may have the Heart of

To the Reader.

a Traitor) that does not in the first place (before he reduce his Intentions against an establish'd Authority into Acts) consider, That it is absolutely necessary, to fix some Method of Private Communication, betwixt those that are to be the Instruments, in carrying on the Work. Now taking this for granted, because undeniable, he must have a stock of Confidence to the non ultra, who will deny a Probability, That their Letters may be intercepted: And if Intercepted I dare trust the following Sheets to evince, That the most sure Cypher practicable in a Current converse may make a Discovery.

The Rules delivered for Decyphering, are not taken upon Trust, nor were to be had at the second Hand; but are the genuin result of Experience, and every new Experiment, gave occasion of fresh Observations.

I hope it will be no unprofitable Digression, to give an Account of the occasion of my Inquiries this way, which fell out thus.

A few years ago, having had some discourse with a Gentleman, concerning the Possibility of Resolving any Writing in Secret Character, and the means to perform it; I was taken with the Novelty of the Thing, and after some few serious thoughts, ventured upon the Tryal, which succeeding at first, I still went fur-

To the Reader.

further : And you have here the account of my Discoveries in this progress.

The Learned Lord Verulam, in his Advancement of Learning, reports the Art of Decyphering as WANTING, and therefore I thought it worth the while to search after it.

The Advantages, that may probably arise from the knowledge of it, I leave to be Collected from the danger of Secret Practices, especially in this Juncture. And as the late Earl of Argile's later Designs, against the Government (discovered in several of his Letters last year) determined me to undertake this troublesome Task, so the open Rebellion now on foot added new Motives for its speedy Publication, according to that of the Poet.

Et quoniam variant Morbi, variabimus
Artes:
Mille malispecies, mille salutis erunt.

I have no mind to enlarge; but there is one conveniency attending this Art, that I cannot pass over (because attributed to Cryptography) and it is, the Assistance it will give to the knowledge of the Tongues. Trithemius affirms, in recommendation of his Polygraphy, (and transposes this one into no less than

To the Reader.

Polygrap.
p. 38, 39.
de Cauf.
& Utilit.
Operis.

than three or four Advantages,) That by it a Man, that understands none but his Mother Tongue, may understand the sense of an Epistle in Latin, &c. But this I have considered, and the Fallacy attending it Chap. V.

But if you once understand the Rules for Decyphering, in one Language, you may really, and without any Reservation, in a few hours, understand as much of any Language, as is needful to reduce it out of Cypher, as is observed in another place. Now this must produce a desire of understanding the meaning of what is so Decyphered, and Desire (joyned even with a Superficial knowledge) a Facility of attaining it.

Note, in Page 21, a wrong Alphabet was by mistake insert, the true one is this,

Abcdefghijklmnopqrstvwxyz
Pqrstvwxyzabcdefghijklmnop

Towards the end of the Introduction, for Lucis Offores, read Lucis Ofores. p. 11. l. 28. f. Propositions, r. Præpositions. p. 94. l. 4. f. In the order, strings passing r. In the order of the strings passing, &c.

IN

INTRODUCTION.

BEfore I enter upon any *particular* Enquiry into this occult Art, I conceive it proper enough to make some *Introductory general* Remarks upon the *whole* Design: And here I cannot but observe a very *Mysterious* Change between the *Measures* taken by some Politicians of *this*, as also many *past* Ages, and *those* universally received of *Old*.

Primitive Simplicity was *Blessed* with one Language, *adapted* for the *Advancement* of *Knowledge* and *Commerce*, until our Forefathers undertook that *ungodly Expedition Heaven-ward*, when they were divided into seventy and two *Parties*, **A. M.* 1758. and every one †**CURSED** Master of a Language for his own use.

*Vid. inter alios *Cluv.* Epit. p. 5. †*Gen. c. 11.*

But of a long time the *Policy-menders*, or rather *Plot-makers*, have taken quite another *By-afs*: For instead of some generous Attempt to *repair* the *old* Breach of a *Catholick Converse*, they debauch their *Inventions*, to frame and manage *new* ways of *Correspondence*, that no *Mortal*, but a few joyned in the *Confederacy* should comprehend.

B

But

Introduction.

But this *Project* (such as it is) has been very far from obtaining an *universal Assent* in any Age; tho' the *Tongue* was confounded, the *Curse* extended not to the *Brain*: *Reason* remained entire, which by help of that great School-master, *Experience*, taught them an useful piece of Philosophy, *That the World is but a large Society of Men, link'd together by a Chain of Wants almost of infinite Variety*: Or as *Dubartas* elegantly expresseth it,

——— *All Lands as God distributes
To the World's Treasure pay their several Tributes.*

Now in a *Detection* of 71 parts in 72, *Knowledge* and *Commerce* were mightily interrupted, and the *publick* must be presumed very *sensible* of the *Loss*; and Endeavours have been on all sides to remove this *Obstacle*, by which all *Parties* became *Losers*.

A *Reunion* of *Speech* (considering the different *Regions* Mankind was divided into) was not to be hoped for; and besides, as it might have proved a work *endless*, so it had been *needless*; for *Words* (however model'd) require presence of *Time* and *Place*, and cannot be conjured out of their little *Sphere*, being no less unfit to enter the *Ear*, or (of themselves) inform the *Understanding* at a very few hours distance, than to satisfy a *craving Stomach*. Indeed Men are sometimes said to *eat* their *Words*; but they grow but *badly* on the *Dyet*.

These *Inconveniencies* gave Occasion to the *Invention* of *Writing*: An Art, by which we may not only transmit our *Thoughts* to an *absent*
Friend,

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Friend, in respect of *place*, but to *Posterity*, in respect of *Time*; and that at the Distance of thousands of Years: An Art by which we may yet hear *Moses*, and the *Prophets*, * *Julius Cæsar*, and the *Conquerors*, &c. without the *Miracle* of being raised from the Dead; † *Solo literarum usu, Memoria fulcitur Æternitas, ab omnique oblivionis injuria res memoriæ dignæ vindicantur.* And as *Rhodiginus* hath it, *Quid hoc magnificentius quid æque mirandum, in quod ne mortis quidem avida rapacitas jus ullum habet.*

* Witness his excellent Commentaries.

† *Polyd. Verg. de Invent. rerum l. 1. c. 6.*

Who was the Author of this Invention, I shall not take upon me to determine; but such an Improvement of *Converse* was thought to have something more than human in it; and *Mercury* (who is by some thought to be the First, by others the Fifth that taught the Use of *Letters* to the *Egyptians*) was thereupon *Deified*, the usual Complement that the Men of those Ages put upon their *Benefactors*. But so it is, after the manner of Men, that what they make, they love to use as their *Creatures*: And thus they put new Gods in Commission at pleasure.

|| *Polyd. Verg. ibid.*

Note, it's most consonant to sound History, That the *Egyptians* had this benefit from the neighbourhood of the *Israelites*.

But to let that pass, whatever of supposed *Divinity* might be attributed to this *Invention*, when (like the supposed * *Inventor*) it had got Wings, and visited some parts of the World. It was not long before some Men began to tamper with it; and to *Writing* add Secret ways of *Correspondence*: The particulars of which are the Subject of this Treatise.

* *Mercury;*

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Letters in their Infancy were in themselves so Secret, that he that should have taken them to task, to understand an Intrigue committed to their Trust, might have worn his Eyes out of his Head, or sunk them so low in it, as would give Ground to suspect them on their March to enlighten the *Brain*, and the Writing as obstinate as ever. And I am apt to believe some Men could be satisfied this Art had still continued in that State; at least confined to the use of themselves and their Confederates, whose Necks are no longer *safe*, than their Designs *secret*.

As for those things treated of by the Authors that have writ upon *Steganography*, &c. which lead a man to the Knowledge of the *Tongues*, or are subservient to other useful *Sciences*: No man in his right Wits will discommend them, while such *innocent Designs* are made the *ne ultra*.

Neither would I be mis-understood, so as to condemn even the *Use* of *Cypher* in general: For the Mysteries of State cannot perhaps be too well secured from prying Eyes; but tho' *Princes*, and those in *Authority*, may have peculiar Signs for *secret Information*, I hope there's no Consequence for a general Practice that way. The Lord *Bacon* mention'd it as an Aggravation of the Earl of *Somerset's* Crime, in his Charge, when Attorney General against that Peer, concerning the *poysoning* of Sir *Thomas Overbury*, where, speaking of the Earl's former Intimacy with Sir *Thomas*; Nay, (says he) they were

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were grown to such an Inwardness, as they made play of all the World besides themselves: So as they had Cypfers and Fargons for the King and Queen; and all the great Men; things seldom used, but either by Princes, and their Embassadors and Ministers, or by such as work or practise against, or, at least, upon Princes. You have here this Learned Author's Sentiment of *Secret Writing*, *inter pri-vatos*; tho' in his *Advancement of Learning*, he afterwards published the most ingenious Method (in my poor Judgment) that is extant: But of this afterwards.

See the L. Bacon's genuine Remains. Charge against Rob. Earl of Somerset.

I have seen very few Authors upon that Subject, but have acknowledg'd it a Detriment to the Publick, to publish their Inventions of this kind. And *Trithemius* in his Apology for Printing his six Books of *Polygraphy* (fore-seeing the Inconveniencies) gives this Caution: *Te, Lector, quicumque es, rogo memineris, quanta per hanc scientiam mala in Republica fieri per malos & lubricos possent, si ad multorum Notitiam deveniret, &c.* But it was an Oversight to imagine, that his Book in a general Progress, *Ad Reges, Principes, Nobiles & Ignobiles, Sacerdotes & Laicos, Doctos simul & Indoctos*; published in *Latin*, the most Universal Language, might not meet with some *ill designing Men*: And his Confidence in this, (as perhaps in other things) was but too great, to fancy, that his bare Desire could be more prevalent upon such, than the Laws of God, or Man. I wish we were all so much *Stoicks*, as to consider, that, *We come into the World as into a Comedy, where we are*

Polygrap.
p. 83.

Vid. p. 44.
Trit. Polyg.

Introduction.

not to chuse the person we must represent, but perform well the part given us; &c. And a little after, that Author adds to this purpose, If of a Porter, like a Porter; for there is Honor in well performing any in their Kind, and Disgrace in doing any ill.

Trithemius tells us (and indeed most of those that follow his *Cryptical* Foot-steps, want not this Pretext) That it was at the Desire, and only for the use of a † Prince, that he began his *Mysterious* (I had almost said his *Miraculous*) *Steganography*, which was to fill the World with Wonder, if ever it should be published; to which indeed he subjoyñs an *Absit. Polyg. p. 100. In manibus jam habeo grande opus, quod si unquam fuerit publicatum, quod absit, totus Mundus mirabitur, &c.* And I am sure we may without any Violence upon the Sence of this Author, make his Kindness to that Prince the *Result* of *Conviction*, since he acknowledges, *Operæ pretium fuerit principes omnes singulari præditos esse sapientia, &c.* And it were uncharitable to suspect him of Flattery in an unanswerable Truth, even tho' his *Designs* and *Doings* (I mean in what he himself hath published to the World) do not seem to *quadrate*.

I confess, the Practice of *Secret Information*, *inter privatos*, may, without any far Fetch, be derived from the same Original with good *Laws*, I mean from Corruption of Manners; and sometimes both may have an Eye at *Order*; but their several Aims and Effects are generally in as direct an Opposition as Light and Darknes.

Duke of
B. n. a. r. i. a.

*Polyg. præf.
ad Maxi-
mil. Impe-
ratorem.*

Polyg. p. 22.

*Ex malis
moribus ori-
untur bonæ
Leges.*

What

Introduction.

What the Intent and Effects of *good Laws* are, is well enough known: And on the other Hand, I hope it is, or shall be undeniable, that such *Secret means*, without a *Commission*, do often tend to the Breach of some positive *Command*. These black Intrigues have often carried on darker Designs; things buried, that they may live: And I may, without any *Solecism* in Sence, affirm, That the * *Philophoti*, as well as † *Misophoti*, mentioned by *Trithemius*, are *Lucis Offiores*: But more of this in its proper place. Tradition gives us the Story of a * Creature that lurks in secret, and kills a Man if it gets the first View of him. Now though I cannot swear to the Existence of such a Monster among the *Brutes*, yet there have been brutal Contrivances that may give it the Authority of a Parable, and the Author an *Apology* for this endeavour to crush it in the Egg.

* Lovers of Light, or written characters.
† Light-haters, or occult characters, not at first discernable to the Eye.

* *Basilisk* mentioned by *Pliny*, l. 8. c. 21.

It is true, the unriddling of such Mysteries, is more immediately the Province of those who sit at the *Helm of Affairs*, *Military* and *Civil*: Yet if a private Sentinel, by decyphering an intercepted Epistle, should save an Army, &c. 'tis no Crime, I hope, that he be more clear sighted than his Superiours. And besides, the Knowledge of Uncyphering should not be confined to a Corner: For great Undertakings (according to the Exactness of Policy) require sudden Action: And if a Cypher were to be carried some hundreds of Miles for its *Resolution*, the *Design* might in the mean time *discover it self*, by an effectual *Execution*: Nay, many

Introduction.

times it may so fall out, that the Secret Writing cannot be safely *sent* far from the place where it may be intercepted, as in open Hostility, or so. These, and the like, are amongst the *Motives* that first inclined me to *send* abroad the following Observations concerning the unridling of such secret Signs, or Notes of Intimation, that are practicable in a constant Correspondence: But that which entirely determined me, was the Time and Pains spent in *Decyphering* the late Earl of *Argyle's* Letters, as you may see in that Authentick *Account of the Discoveries made in Scotland, of the late Conspiracies against His Majesty and the Government*, published by His Majesty's Command.

And now to come to the *Particulars* contained in this small Tract:

First, I shall treat of the most material ways of *Secrecy in Writing* that have been invented (termed by those who have dealt that way, *Cryptographia, Steganographia, &c.*) and lay down plain Rules for *Decyphering* them without any Key.

2. Of *Sæmæology*, or the several Methods of Secret Information, by *Signs and Gestures*.

3. Of *Cryptology*, or that *Secrecy* consisting in *Speech*.

4. Of Secret *MEANS* of *CONVEYING* *Written Messages*, that have been practised to frustrate a Search; which Method may be called *Cryptogrammatophoria*, since there's no Statute against coyning of Words: And sure I have Precedents on my side. And,

Introduction.

5. I shall enquire into the several astonishing Proposals for *Secret Information*, mentioned in that Epistle of *Tritheimius*, directed to *Arnoldus Bostius*, concerning his eight Books of *Steganography*.

In this *Distribution*, I have not so much considered which are *first in Order of Nature*, or in *Order of Time*, as what is *first in Order* for the *Reader's Ease*: Whether *Speech*, or that dumb kind of *Eloquence by Signs*, be first *Ordine Naturæ*, is under Debate; and let it remain so: But without Controversie, for a *methodical comprehending* the whole Rules of Discovery, 'tis most proper to begin with *Cryptography*; being the Resolution of the rest of the Chapters, in a manner, depend upon this:

Crypto-

I have the honor to acknowledge the receipt of your letter of the 10th inst. in relation to the above mentioned subject. I have the pleasure to inform you that the same has been forwarded to the proper authorities for their consideration. I am, Sir, very respectfully,
 Yours obedient servant,
 J. M. Smith

1840

Cryptomenyfis Patefacta :

OR, THE

Art of Secret Information disclosed without a Key.

CHAP. I.

Of Secret Writing, and the Resolution thereof.

IN *Secret Writing* there are reckoned these Requisites in Cryptography, &c.
Requisites:
1. *That it be void of Suspicion, if possible.*
2. *That it be difficult to be unfolded, if doubted.*

3. *That it be fitted for Dispatch (i. e.) easie to be writ, and Decyphered by the Key.*

From whence I shall here only observe, That Note.
every thing is to be Examined, that comes from a suspected Hand. The particular ways of Tryal will appear as we proceed.

This Art is by some Authors call'd *Cryptographia*, ἀπό τῆς κρυπταιν, Etymolog. of Cryptog. &c. to *hide*, or *keep secret*, and

and γράφω to *write, carve or grave*. By others *Steganographia*, ἀπὸ τῆς Στέγην, to *conceal*, and γράφω. *Trithemius* entitles the six Books he himself published upon this Subject, *Libri Polygraphiæ*, from πολλὸς, because of the *numerous*, or rather *innumerable* Differences it is capable of. And yet all will fall under the following Sections, which I have digested after this Method.

1. I shall examine that way of Secret Writing, by *Altering the Powers of the Letters*; as also by *invented Notes, and Characters*.

2. By *changing the Places of the Letters, where the Powers are the same*.

3. By using *more Letters or Characters than are requisite to frame Words*.

4. I shall enquire into that Secretie which arises by writing with *fewer Letters than the words require*.

5. I shall consider the Secretie in Writing, that proceeds from a *Deceit in the Paper, or some other Material instead thereof*: And,

6. That *Fallacy where the Secret Intentions are concealed by a Deceit arising from the Ink, or some other Liquor used for it*.

S E C T. I.

Of Secret Writing, by changing the Powers
of Letters, &c.

¶ I. Contains several Ancient and Modern
Inventions of this kind.

THis way of Secret Writing, by changing
the Powers of Letters, of purpose to con-
found the true Intent of a written Message
was very early in the World; and the Author
of the *Secret and Swift Messenger* tells us much
of the ancient *Jewish* Learning is wrapt up in
it.

See also
Swift Mes.
p. 69, 70.

Suetonius relates, That *Julius Cæsar* writ his
Epistles of Moment, per quartam elementorum
literam, (as that Author hath it) in this Order,

See also
Aul. Gell.
noct. Attic.
l. 17. c. 9.

Defghijklmnopqrs tuwxyz abc.
Abcdefghi klmnopqrs tuwxyz.

D being put for A, and E for B, &c. E, g.

Xlb Hqbpb mw mq kvhdx gmwrughv.
idoo ysrq xlbp zmxl doo hashgmxmrq.

The Enemy is in great Disorder, fall upon
them with all Expedition.

Augustus Cæsar, in communicating his secret
Intentions, secundum elementum proprii loco sub-
stituit, (i. e.) He put B for A; for B, he put C, &c.
and for A, he used XX. thus;

XX abcdefghijklmnopqrstu wxy.
A Bcdefghijklmnopqrstu wxyz.

This

This Transposition will appear fully as much a Stranger to the true meaning in an Epistle as any; notwithstanding of the near Neighbourhood of the Letters that are express'd, and understood.

It is ordinary in Secret Writing of this nature, to make use of some word, wherein one Letter is only once express'd, to frame their Alphabet by, writing first the Word it self, and after it the Letters wanting to compleat the Alphabet; and that either by two Lines at length, or by the Alphabet divided. E. g. Let *Liberty* be for the Key.

In two full Lines.

Liberty a c d f g h k m n o p q s u w x z.
a b c d e f g h i k l m n o p q r s t u w x y z.

By the Alphabet divided.

L i b e r t y a c d f g
h k m n o p q s v w x z.

So that in Writing, *L* is used for *H*, and again *H* for *L*; they use *I* for *K*, and *K* for *I*, &c.

I have seen Transpositions of the Letters so ordered in framing an Alphabet, that the seeming barbarous words in the writing could be well enough pronounced in Speech, and would at first view appear to be some strange kind of Language.

But why should I enlarge upon Particulars? *Trithemius* his fifth Book contains nothing but Tables for *Transpositions*: and tho he had employed the whole time of his Life that way, he had left a vast variety untouched; for let the Alphabet stand in its natural Order, *viz.*

a b c d

a b c d e f g h, &c. for an *Index* to shew the Powers of the several possible Combinations of the twenty four Letters, to be placed opposite to it in Rows, and allowing five of these Rows to stand in an Inch measure: One end of this *Tabula transpositionis expansa*, (when writ in a Scroul,) if reached to the *Man in the Moon*: Nay, to go farther, if *Mercury*, who once taught the use of Writing, had it, the other might remain with us: And besides, the *Transpositions*, which must lie by the way thither, abundance of different Alphabets left for the Use of this lower World upon Occasion.

To be serious, (according to the following Rules for combining any Number of Letters) you will find twenty four Letters have 62044-8401733239439360000 several Positions. And *Schottus* demonstrates, (tho the Calculation in his Book be not exact) that a thousand Million of Men in as many years could not write down all those different Transpositions of the Alphabet, granting every one should compleat forty Pages a day, and every Page contain forty several Positions: For if one Writer in one day write forty Pages, every one containing forty Combinations, 40 multiplied by 40, gives 1600, the Number he compleats in one day, which multiplied by 366, the Number (and more) of Days in a Year; a Writer in one Year shall compass 585600 distinct Rows. Therefore in a thousand million of years he could write 585600000000000, which being again multiplied by 1000000000, the number
of

Steganog.
Clas. 5. c. 5.

of Writers supposed, the Product will be 5856000000000000000000000000, which wants of the number of Combinations no less than

34848401733239439360000.

But those are not all; for the Alphabet put for the *Index* is capable of 620448401733239439359999 Variations to each of the former Positions.

And besides, many have used invented Characters, Arithmetical Figures, &c. to express their Secret Intentions by. Thus *Pharamund*, King of the *Franks*, invading the *Gauls* about the Year 424. devised a new Alphabet for his own use: *Clodius* his Son and Successor followed his Father's Example in contriving new Characters, for communicating his Intentions the more secretly: as also did *Charles the Great* and others. And some will have it, that *Ezra* invented the *Hebrew* Character upon some such Motives. *Trithemius* has been at the pains of collecting a great many invented Alphabets; which you may see in his sixth Book *de Polygraph.*

Titb. Polyg. lib. 6.

Part 4. lib. 1. Synt. 6. Prop. 4. & 5.

Gasp. Schottus, in his *Magia Universalis*, proposes an Invention he had found amongst the secret Manuscripts of *Kircherus*, how to write with Points or Arithmetical Figures. It is to this purpose; They divide the Letters of the Alphabet into a certain number of Parts; and to every Partition they subjoyn some different sign or point, *v. g.*

1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4 5
a b c d	e f g h	i l m n	o p q r	f t u x z
.	;	:	.	?

Afterwards when they come to write, they first mark down the number of the Letters, as they stand in their respective Columns, that serve to express their hidden meaning, and joyn to it the sign of that Column e: g: 4, 1; 3? 1? 3? 1: 4, 1; 2? *Deus videt.* But he thinks it better, to mark the several Divisions of the Alphabet with Figures thus:

1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
a b c d	e f g h	i k l m	n o p q	r f t u	w x y z
1	2	3	4	5	6

By help of this Alphabet, if the following Words were put in Cypher, *Princeps insidiatur vitæ tuæ; fuge.* they will stand in this order; 43, 51, 31, 41, 13, 21, 43, 52, 31, 41, 52, 31, 14, 31, 11, 53, 54, 51, 54, 31, 53, 11, 21, 53, 54, 11, 21, 22, 54, 23, 21. Here either the number of the Letters in their several Clases, or the number under them, may be put first.

Nay, to come nearer, you may find three or four new Alphabets out of the Mint, in the Discoveries made in *Scotland*: but since the same Rules of decyphering will serve for all, I proceed.

SOLUTION.

First, *Distinguish the Vowels from Consonants.*

To proceed regularly herein, you must endeavour to *distinguish betwixt the Vowels and Consonants.* And first, the Vowels generally discover themselves by their frequency; for, because they are but few in number, and no word made up without some of them, they must frequently be used in any Writing: however, it may by accident fall out, that some of the Consonants shall be oftner found in an Epistle. 2. Where you find any Character or Letter standing by it self, it must be a Vowel; this holds in all Languages. 3. If you find any Character doubled in the beginning of a word, in any Language it is a Vowel, as *Aaron, Eel, Filt, Oogala, Vulture, &c.* except in some *English* proper Names, as *Llandaff, Lloyd.* 4. In Monosyllables of two Letters, one being a Vowel, you may distinguish it from the Consonant joyn'd with it by its *frequency, &c.* 5. In a word of three Letters, beginning and ending with the same Character, some Vowel is probably included; as, *did, &c.* except *er'e, &c.* but *e* is easily known, being of greater use than any Letter, in the beginning, middle, and end of Words; as *see, ever, serve, deference, beseech, need, &c.* This will not hold in *Latin*; and as for the frequency of the Vowels in that Language, they are computed to serve thus in
any

any Writing: *e* and *i* of most use; next to these *a* and *u*; and *o* not so often as any of them; but upon the whole, the difference is but small. 6. When you find a Character doubled in the middle of a word of four Letters, 'tis probably the Vowel *e* or *o*, as *feel*, *good*, &c. and consequently the first and last Letters Consonants. 7. In Polyfyllables, where a Character is double in the middle of a Word, it is for the most part a Consonant; and if so, the precedent Letter is always a Vowel, and very often the following. 8. *i* in *English* never terminates a Word, nor *a* or *u*, except in *sea*, *you*, &c. tho they be of much use in the beginning and middle of Words, as in *advantage*, *assassinate*, *diminish*, and the like. 9. These Vowels, *a*, *i*, *u*, are seldom doubled; and in this and the former, they are distinguishable from the Consonants most frequently used, such as, *d*, *b*, *n*, *r*, *s*, *t*. Most of those Remarks are calculated for the *English* Tongue.

Secondly, *Distinguish Vowels amongst themselves.*

To distinguish one Vowel from another, after you have made the most probable Suppositions in separating them from the Consonants, 1. compare their frequency, and *e*, as we observed before, is generally of most use in the *English* Tongue, next *o*, then *a* and *i*; but *u* and *y* are not so frequently used as some of the Consonants. 2. It is remarkable, that amongst the Vowels, *e* and *o* are often doubled, the rest

feldom or never. 3. *e* is very often a terminal Letter, and *y* terminates Words, but they are distinguishable, because there is no proportion as to their frequency: *o* is not often in the end of Words, except in Monosyllables. 4. *e* is the only Vowel that can be doubled in the end of an *English* Word, except *o* in *too*, &c. In *Latin* no Consonant can be doubled in the end of a Word, and only the Vowel *i*. 5. You may consider which of the Vowels, in any Language, can stand alone, as *a, i*, and sometimes *o* in *English*, *a, e, o*, in *Latin*, or *i* the Imperative of *eo*.

3. *Distinguish the Consonants amongst themselves.*

To distinguish one Consonant from another, you must 1. (as before) observe their frequency. Those of most use in *English* are *d, b, n, r, s, t*, and next to those may be reckoned *c, f, g, l, m, w*; in a third rank may be placed *b, k, p*; and lastly, *q, x, z*. In *Latin*, the most frequent Consonants are *l, r, s, t*, next to these *c, f, m, n*, then *d, g, h, p, q*; and lastly, *b, x, z*. 2. You may consider what Consonants can be doubled in the middle or end of Words. 3. What are terminal Letters, &c. and 4. The number and nature of the Consonants or Vowels that can fall together, or do usually follow one another.

Note, that if the same Character be used for *j* when a Consonant, and when it is a Vowel, it may a little perplex some of the Rules for decy-

decyphering : but this Confusion cannot happen so often, as to excuse the prolixity of any other *Caveat* than barely to have mentioned it.

Additional Observations.

The great difficulty being once to come to the Knowledge of three or four Letters, (those leading a man to the Knowledge of the rest) endeavour to find out Words usual in Writing, that have something peculiar to them in the order of Letters; such as, 1. A word of three Letters, beginning and ending with the same, may be supposed, *did*. 2. A word consisting of four Characters, with the same Letter in the beginning and end, is probably, *that*, or *hath*. 3. A word consisting of five Letters, when the second and last are the same, is commonly *which*, though it may be otherways, as in *known*, *serve*, &c. And you may judge of the truth of such *Suppositions* by the frequency of the Letters in the Word supposed.

Next, you may compare Words one with another, as *on*, and *no*, each being the other reversed; so *of* and *fo*, the last being the first reversed, with the addition of a Letter; *for* and *from* will discover each other, &c.

You may likewise observe some of the usual Propositions and Terminations of Words, such as *com*, *con*, *ing*, *ed*, &c. or in *Latin*, *præ*, *per*, *us*, *um*, &c. Note that *t* and *b* are often joyned in the beginning and end of *English*

Words, and sometimes in the middle, &c.

I have not medled here with any Language but *English*; because of the design'd Brevity of this small Tract: However, by a little practice of decyphering in one Language, you may decypher an Epistle in any, even tho the plain Speech it self be a Mystery to you, if you first observe, the frequency of the Letters, the terminal Letters, what Letters can be doubled, in the beginning, end, or middle of Words; and such general Rules.

And as to *English*, I have hereunto subjoyned one Example.

39. 38, 31, 21, 35. 35, 14, 20, 18, 21, 19, 20, 35,
 34 20, 38, 39, 19. 32, 35, 31, 18, 35, 18. 22, 39,
 20, 38. 13, 31, 14, 24. 20, 38, 39, 14, 37, 19. 31,
 19. 20, 15. 20, 38, 35. 13, 31, 14, 31, 37, 39, 14,
 37. 15, 36. 20, 38, 35. 31, 36, 36, 31, 39, 18. 18,
 35, 17, 21, 39, 19, 39, 20, 35. 36, 15, 18. 24, 15, 21.
 20, 15. 11, 14, 15, 22. 18, 35, 13, 35, 13, 32, 35, 18.
 20, 38, 31, 20. 15, 14. 14, 15. 31, 33, 33, 15, 21, 14,
 20. 24, 15, 21. 36, 31, 39, 12. 20, 15. 13, 35, 35, 20.
 13, 35. 31, 20. 14, 39, 14, 35. 20, 15. 13, 15, 18, 18.
 15, 22, 19. 14, 39, 37, 38, 20. 36, 15, 18. 22, 35.
 13, 21, 19, 20. 14, 15, 20. 14, 15, 22. 34, 35, 12, 31,
 24. 20, 38, 35. 19, 21, 18, 16, 18, 39, 25, 35. 15,
 36. 20, 38, 35. 33, 31, 19, 20, 12, 35. 22, 38, 35, 14.
 20, 38, 39, 14, 37, 19. 31, 18, 35. 39, 21, 19, 20. 18,
 39, 16, 35. 36, 15, 18. 35, 23, 35, 33, 21, 20, 39,
 15, 14.

By practising the foregoing Rules, you will find that this method of *Secret Writing* in *plain Cypher*, may with as much ease, if not with as much speed, be *decyphered* as *written*. The

The Secret Sense of the Example given is this:

I have entrusted this Bearer with many things as to the managing of the Affair requisite for you to know: Remember that on no account you fail to meet me at nine to morrows night; for we must not now delay the surprize of the Castle, when things are just ripe for Execution.

Note. When you are to decypher any Writing, begin with the single Characters, if any be; next go to the Monosyllables, or remarkable Words; take them out of the Epistle, and mark them down in a Paper apart.

We shall next consider some ways that may be taken to frustrate the foregoing Rules of Discovery: and several have been insisted on to this purpose, that fall under this Section in the following Paragraphs.

¶ 2. *An Improvement of the former methods of Secret Writing, by leaving out Characters of least use, and putting others in their stead that shall signifie the Vowels.*

This we have from the Author of the *Secret and Swift Messenger*: for (says he) by this means the Number of the invented Alphabet will be compleat, and the Vowels, by reason of their double Character, less distinguishable.

SOLUTION.

As for this difficulty, I must confess I cannot well comprehend it; for if the number of the Alphabet be *perfect*, how can *one* Character express *two* Letters? and again, if *one* Character hath a *double* power, *viz.* of a Vowel and Consonant, it would appear to me rather *more* than *less* distinguishable, by reason of its greater *frequency*: and having found *one* of the powers of a *double* Character, you may discover when it is used in another power, and then proceed as before; and withal, the common Particles, such as, *the, that, of, and, &c.* will be written throughout all the Epistle, without any variation, in their respective Characters.

But further, if only the Letters of *less* use be *left out*, it will not make any *great* Alteration in an Epistle; and if you discover but one word in the whole, the Sense will bring you through such *little* Intricacies, especially upon this Advertisement, that an Epistle may be so contrived.

If Letters of *greater* use should be laid aside by compact, and others also of *great* use put in their stead to express a *double* power, I believe the *Confederate* might have an equal disadvantage by *this* means with the *Discoverer*, E. G. If the same Character should signify *o* and *n*, they cannot distinguish *on* from *no*, &c. but by the Sense of the Epistle, or some private mark: and why may not the *Decypherer* be as good as the *Confident* at the Art of Discerning?

And

And besides the notice given, that an Epistle *may be so contrived*, I shall add further, That any Writing contrived in this manner, *may be easily discovered to be so*, because the *usual* number of Characters must be wanting, and because of a *more than usual* frequency of some particular Characters; and you see that there is no insuperable difficulty to *decypher it when discovered to be so*.

¶ 3. Of writing without any distinction between Words.

The way of concealing the sense of an Epistle by writing continually without any distinction between the words, is mentioned by our last cited Author; and of late very much practised, particularly by the late Earl of *Argyle*. See the *Account of the Discoveries made in Scotland, &c.*

SOLUTION.

By this Intricacy, I acknowledge those helps we mentioned from *single Characters, Terminations*, or the like, are deluded; but you may however *distinguish, between the Vowels and Consonants, the Vowels one from another, as also the Consonants amongst themselves*: nay, you may make Suppositions for Words, &c. and having found two or three Letters, or one Word, the difficulty is over. I have often tryed it, and never found any new difficulty to arise from this

this *Defeating* way that requires other Rules, than what you have already for *Decyphering*.

¶ 4. *Of making false Distinctions in Secret Writing.*

This way is likewise mentioned in the *Secret and Swift Messenger*, *ibid.* e. g. if these words, *There is no Safety but by Flight*, were divided thus, *The, reisn, ofa, fetyb, utb, y, fli, ght.* and afterwards put in Character.

SOLUTION.

When you have any suspicion of a Fraud of this nature, you may proceed as if there were no Stop used.

¶ 5. *Of inserting Nulls or Non-significants.*

This Obscurity in Cypher is commonly proposed in Treatises for *Secret Writing*; and amongst other Authors upon that Subject, by the Lord || Bacon. You will find it put in † Practice too.

|| *Advancement of Learning.*
l. 6. c. 1.
† See *Dissertation* in Scotland.

SOLUTION.

As to this, it is necessary, 1. That you *take the number of the different Characters in the Epistle*: and if that exceed the Number of the Alphabet, 'tis *probable* Mutes are intermix'd with the significant Letters.

I have

I have said *probable*, because there may be Characters insert to express Relatives, Syllables, &c. of which hereafter.

2. *Observe the frequency of the several Characters.* And by this means you may distinguish those Nulls from significant Letters; for 'tis obvious, that if *many* insignificant Characters be used, they shall *not* be frequent; at least most of them shall be but rarely insert, which will do no great feats: If only a *few* in number, and consequently their places the *more* frequent, they are yet by Supposition *distinguishable* from the Vowels and Consonants of most use in Writing; especially if you consider the *Order* and *Coherence* amongst the several Characters. This admits of no particular Rules; nor will the *Judicious* need any.

3. After you have found out the real Alphabet, or all the Mutes, there is no new difficulty.

¶ 6. Of Secret Writing by the Key Character.

There is an Invention of Secrecy much insisted on (though none of the swiftest) by the Author of the *Secret and Swift Messenger*, and others, beyond any yet mentioned, for Intricacy, wherein each particular *Line, Word, or Letter*, is written by a new Alphabet: but the cited Author himself acknowledges it too tedious for a current Correspondence; which cannot be entertained this way, but at a vast expence of Time and Trouble, to put it in, or take it out of Cypher even by the Key; and se-

cret

cret Information, in several Exigencies must be speedy or unprofitable: so that in effect it is unpracticable for the end it is design'd for.

However, lest it should obtain too much credit if supposed undecypherable, its Difficulties shall be considered.

But first, the way of writing by it is this: The Confederates condescend upon some Word or Sentence that shall lock and unlock their Missives; or the Key may be sent in the Letter, in some Word or Sentence privately marked, or by compact agreed on, such as the first or last Line, &c. to serve for the Key. Suppose then it should be *Policy's Prebeminence*, there must be several Alphabets framed for each of its Letters in manner following.

i A b

1	A	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	w	x	y	z
2	P	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n
3	O	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m
4	L	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i
5	I	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g
6	C	d	e	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a
7	Y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w
8	S	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q
9	P	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n
10	R	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c
11	E	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c
12	H	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f
13	E	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c
14	M	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	k
15	I	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g
16	N	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l
17	E	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c
18	N	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l
19	C	d	e	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a
20	E	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c

If they agree, that the Lines only shall be writ by a new Alphabet, the first line shall be made according to the first Alphabet A. P. the second line according to the second Alphabet, *viz.* A. O. the third Alphabet is A. L. &c. the first Line being an *Index* successively to all the rest. And when they have gone through the Table, they may begin a-new, or go backwards again, &c.

If Words are only writ by one Alphabet, then every new word is writ by a new Alphabet: and so of Letters. I have hereunto sub-joyned an Example for each: *viz.*

1 Ex-

I Example in the Lines.

*Y pb vdgrrs id ztte ixt Hdasytgb
idcb wofr rihm obr rihm rxsh
dfaawi fd zc espi gtww cpfzwe ez
cqn Nwuxg bymmrtg. qibc.*

*I am forced to keep the Soldiers
upon hard duty and hard diet :
Supply us, or they will revolt to
the Enemy speedily. Hast.*

SOLUTION.

1. When there is only one Alphabet used for a Line, the Writing might be discovered as in plain Cypher, if you make a new Operation for each line. But there may be other ways to decypher any such Writing: for,

2. If you find out but one Letter in a Line, (and that may certainly be done by a few Suppositions) it will of it self give an Alphabet for that whole Line, as you may perceive by the Counter-Table, which follows: for, the Confederates Table being framed, so as the first line may be an *Index* to all the rest of the Lines which are ordered by some Word or Sentence that is the Key, every Letter of such a Word or Sentence must be once supposed to stand for A. Now in the Counter-Table you see all the Letters in the Alphabet to be once supposed A: Therefore you need only to search
for

for *I* in the upper line of it, and try in what line *Y* is opposite to it; and those two Lines give you an Alphabet. Or set down the Letter found under the Letter that expresseth its true power, and compleating the last line, you have the Alphabet. *E.g.* If you supposed *Y* in the Example given to express the power of *I*, first write down the twenty four Letters in their usual order, and under *I* place *Y*; then going on in order, your Alphabet is this for the first line.

A b c d e f g h i k l m n o p q r s t u w x y z
 L m n o p q r s t u w x y z a b c d e f g h i k

The

The Counter-Table.

1	A	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	f	t	u	w	x	y	z		
2	B	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	f	t	u	w	x	y	z	a	b	
3	C	d	e	f	g	h	i	k	l	m	n	o	p	q	r	f	t	u	w	x	y	z	a	b	c	d
4	D	e	f	g	h	i	k	l	m	n	o	p	q	r	f	t	u	w	x	y	z	a	b	c	d	e
5	E	f	g	h	i	k	l	m	n	o	p	q	r	f	t	u	w	x	y	z	a	b	c	d	e	f
6	F	g	h	i	k	l	m	n	o	p	q	r	f	t	u	w	x	y	z	a	b	c	d	e	f	g
7	G	h	i	k	l	m	n	o	p	q	r	f	t	u	w	x	y	z	a	b	c	d	e	f	g	h
8	H	i	k	l	m	n	o	p	q	r	f	t	u	w	x	y	z	a	b	c	d	e	f	g	h	i
9	I	k	l	m	n	o	p	q	r	f	t	u	w	x	y	z	a	b	c	d	e	f	g	h	i	k
10	K	l	m	n	o	p	q	r	f	t	u	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l
11	L	m	n	o	p	q	r	f	t	u	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m
12	M	n	o	p	q	r	f	t	u	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n
13	N	o	p	q	r	f	t	u	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o
14	O	p	q	r	f	t	u	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p
15	P	q	r	f	t	u	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q
16	Q	r	f	t	u	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r
17	R	f	t	u	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	f
18	S	t	u	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	f	t
19	T	u	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	f	t	u
20	V	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	f	t	u	w
21	W	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	f	t	u	w	x
22	X	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	f	t	u	w	x	y
23	Y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	f	t	u	w	x	y	z
24	Z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	f	t	u	w	x	y	z	a

This Table needs not much Explanation, being but a Collection of such Alphabets as you may frame by your self upon every new supposition.

Having found one Alphabet for the first line, you have likewise by this means the first Letter of the Key. *e. g.* In the fifteenth line of the Table, *r* standing against *I*, and *P* beginning that line (as you may perceive) *P* must be the first
Let-

Letter of the Key; and if you peruse the following Collection of what Letters can be joyned in the beginning of Words, you will find *a, e, b, i, l,* or *o,* &c. must follow *P*: so that at worst to get another Alphabet for the next Line, it will cost but so much Pains as to make Tryal of all those Letters by Supposition; as first, what Letter in the first Line is against *i*, in the fifth Line beginning with *E*, (for *A* cannot regularly follow *P* in this particular method, else the Letters in the second Line of the Writing, should have their usual Signification without any Transposition;) and finding that *E* cannot be the second Letter of the Key, because the Cypher from that Supposition is in as great confusion as ever, next try what Letter is opposite to *i* in the line *H*. Still supposing a new, untill you find the second Line to produce Sense. And so of all the rest.

Or you may take the same Measures from the Letters or Syllables *found*, in the Writing it self.

Or you may proceed to find the Alphabet of the second, third, or any other Line, as you did for the first; *viz.* searching after the Power of some Letter in the second Line, by the ordinary Rules; and according to the greatest Probability, in that search; from the *frequency of the Letter*, or other help, to make Tryal by your Counter-Table.

2 Example in the Words.

*Y oa qzenpo ex mggr rfc Lgdwbxkl
 kedc xriw hzye hvl mewb puqf
 bdytg hf fw gwrl ylnn wizspy id
 hws ppxi bynmmtg. kcww.*

SOLUTION.

When the Alphabet is changed at every word, you may either make Suppositions from *Words*, or from *Letters* that fall in the end or beginning of the several Words in the Writing, until you have made some progress in the Letters of the Key; and then proceed as before.

You may likewise find out by Supposition, the number of Letters in the Key, &c. which will much facilitate the work. Thus :

1. Having found an Alphabet for the first, second, or indeed any word near the beginning of the Epistle, go through all the immediate following Words, until you find another that is decyphered by the same Alphabet.

2. From the last found Word count the like number, and you have a new word decypherable by the found-Alphabet : and thus you may go on until you have once gone through the whole Writing, marking the whole Series with some peculiar mark : And then,

3. Begin the Epistle again at some Word immediately before or after that which was first

first found, and count forwards as before, until you come to the end of the Epistle.

4. Afterwards observe the same method, until you have distinguished the whole Writing, giving each respective Series of Words some particular mark of Distinction. And in end having found out but one Letter in such a Series of Words it gives an Alphabet to decypher all that Series by, as was observed in *Lines*, &c. e.g. *T* therefore, the first Word in the Example, expressing the Power of *I*; you shall find the twentieth Word *id* decypherable by its Alphabet, viz. A. P. and consequently *hw*s, the one and twentieth Word in the Writing, but twentieth after *oa* the second Word, to have one Alphabet with it; and in the same order *pypxi* to have one Alphabet with *qzcnpo*; and *bymmrtdg* and *cx* to be denoted by the same Alphabet, &c.

Now if the Writing were long (as it must be to contain *Proposals*, *Emergencies*, and other Circumstances) the use of the foregoing Observation will be worth the consideration.

But there is an Exception to these Rules; for you will see in the Example, that the first Word *T* and the seventh Word *Lydwbxkl* are are writ by the same Alphabet, but not the seventh from that, viz. *puqf*, nor the seventh from *oa*, viz. *kedc*, &c. and the reason is, because the Letter *P* is twice repeated in the Words of the Key. So that when you find this happen in decyphering, leave such Words, and go to the next, until you find the true number

Note;

of Letters that make up the Key by the former Rule; and then this difficulty becomes a help in the Operation, &c.

Example in the Letters.

*Y ox oqputv yw oqnc yvg Xdxorgpl
kgsn mmaq bhwc pbo qcpw saib
xgyepl xx df eqgw oyep, zigxyy gq.
yxs pwgkq bgimbvtl: mrvy.*

SOLUTION.

To decypher this last kind of Secret Writing, you must begin with Suppositions; and

1. Extracting out of it the Monosyllables, &c. you may suppose all the Words in it of three Letters successively to stand for *the*, or *and*, &c. and you may prove your several Suppositions thus: *viz.* 1. Mark down the Powers supposed. 2. Observe in what Lines of your Counter-Table the Letters express'd in the Cypher are opposed to them in a perpendicular Line. 3. Observe the first Letters of those Lines, and you will soon find whether they can be joyned to make up a part of the Key: *e. g.* Let *yvg* in the first Line of the Example be supposed, *the*, *y*, is opposite to *t* in line fifth, beginning with *E*; *b* to *v* line thirteen, beginning *N*; and *e* to *g* line third, beginning *C*. So that having found *enc* in the beginning of these several lines, it is probably some part of the Key.

2. You

2. You may proceed in the same manner to other Monosyllables, &c. in any part of the Epistle; or you may consider what Letters can follow *enc*, and thus *e* being most probable, look in that Line of your Table beginning with *E*, for \times the following Letter in the Cypher, and its opposite Letter in the upper Line, which is *S*; and afterwards you may go on with probable Suppositions, either from the Letters found in the Key or in the Writing.

Perhaps these Methods will not so readily give you the entire Key, yet they are good helps.

You may otherways begin your Suppositions with the first Letters in the Writing; and for that end, I have hereunto added, in an alphabetical Order, the Letters that can be joyned together to begin Words.

And from all together, you may in a short time find out the number of Letters in the Key; and here that is of as much use as in the other ways of writing by the Key Character, since thereby you have the several Returns of each Alphabet. Now follows the Table.

A	Beginning a Word is regularly followed by	most of the Letters.
B		a, e, i, l, o, r, u, y.
C		a, e, h, i, l, o, r, u.
D		a, e, i, o, r, u.
E		most of the Letters.
F		a, e, i, l, o, r, u, and sometimes y.
G		a, e, h, i, l, n, o, r, u, y.
H		Vowels only.
I		most of the Letters.
K		a, e, i, n.
L		Vowels only.
M		Vowels only.
N		Vowels only.
O		most of the Letters.
P		a, e, h, i, l, o, r, f, sometimes t, u, y.
Q		only by u, and QU by a, e, i, o,
R		a, e, sometimes h, i, o, u, y.
S		a, c, e, h, i, k, l, m, n, o, p, q, t, u, w, y.
T		a, e, h, i, o, r, u, w, y.
U		sometimes d, and g, l, m, n, p, some- times r, f, t, x.
V		Vowels only.
W		a, e, h, i, o, r, y.
X		sometimes a, or e.
Y		e, sometimes i, o.
Z	e, sometimes o.	

Here I have only insert the Letters of the Alphabet on the left hand, and such Letters, as can immediately follow any of them, beginning a Word opposite to it.

It had been the least part of the Trouble of this Undertaking, to have contrived Tables for Monosyllables, Terminations, &c. and that in most Languages; but I rather feared a Censure, than hoped for Thanks from the Ingenious, to crowd Tables into this small Tract: and if it be reputed a Defect, it is such an one that a very ordinary Capacity may supply by help of Dictionaries only.

But to return to the method of Secret Information in hand, it is easily discernable from any other. *e.g.*

When the Alphabet is *changed for every Word or Letter*, the *Frequency* of the Letters will not agree with that in an Epistle writ in *plain Cypher*, where *one Character always expresseth the same power*: For, as to this last, you shall but rarely find two or three Characters of the same frequency; but by a continual altering of the Alphabet you shall have a great many, *e.g.* In the last Example you have no less than seven different Letters twice repeated, *viz. a, b, d, k, f, t, z*, three Letters thrice repeated, two Letters four times repeated, three Letters five times repeated, three Letters seven times repeated, and two Letters nine times repeated.

Again, in one line of an Epistle where the Alphabets are continually altered, you shall have more differing Characters than in two where one Alphabet is only used in the whole Writing. *e.g.* In the Example you have the compleat number of the Alphabet, whereas in the Writing (*viz.*

*I am forced to keep the Soldiers
upon hard Duty and hard Diet :
Supply us, or they will revolt to
the Enemy speedily. Hast.)*

there are wanting, *b, g, q, x, z.*

We have already observed, that this method of Cryptography requires too much time to be put in practice : but besides, it is not only unpracticable upon that score, for by the least mistake in Writing, it is so confounded, that the Confederate with his Key shall never set it in order again ; and withal, 'tis liable to suspicion : so that it has none of those things required in Secret Writing, except that there is difficulty in decyphering it ; and that not insuperable, as is made apparent.

¶ 7. *Of communicating any Secret Intention with the ordinary Letters, by help of a few Figures.*

The following way of Secret Writing is proposed by *Schottus*, who tells us, that he had it of Count *Gronsfeld* : It would seem to frustrate the Rules for decyphering already mentioned, and therefore have I insert it. The Method is this :

1. The Confederates dispose the Letters of the Alphabet in a Line or Circle, over which they place any number of Figures, *v. g.* 436. in this manner.

4 3 6
a b c d e f g h i k l m n o p q r s t u w x y z.

1

+

2. They

2. They write their Secret Intentions on a Paper apart, and over the tops of the Letters they place the number of Figures agreed on. Let the Words be these.

The Governor of the City is beyond Corruption, so that we may conclude there is nothing of Bribery will serve the turn.

Which Words, according to the Example, will stand thus :

426 43643643 64 364 3643 64 364364.

The Governor of the City is beyond

3643643643 64 3643 64 364 36436436

Corruption, so that we may conclude

43643 64 3643643 64 36436436 4364

there is nothing of Briberie will

36436 436 4364

serve the turn.

3. Observe what Figure stands over the first Letter of the Writing, (*viz.* T) which is 4. and counting forward as many Letters, write down the fourth, *viz.* x; again see what Figure is over the second Letter (*v. g.* b.) which Figure is 3; then counting three Letters from *b*, the third is *k*, next write down the sixth Letter from *e*, which is also *k*; and so they proceed, always observing the Letters in the Writing to be secretly communicate, and the Figures above it, until they come to the end of the Epistle. The Example being finished will stand thus :

*xkk kqabtsrt ti wnb eoxa ow dkbqsg etvtaswo-
rp jr wndw bb ofb etqeayfk xkkvg ow ptxkoqi
ti dxmdkvlk zlqo vkvxk xkk xxxq.*

SOLUTION.

To decypher this kind of Secret Writing, you may,

1. Transcribe the Cypher out of the Epistle, keeping the lines and letters at such a distance one from another, that each letter may admit of a Figure distinctly above it.

2. Endeavour to find the number of Figures in the Key which must be enquired into by several Suppositions.

3. The number of Figures being supposed, E. g. 3. take any three Figures, v. g. 123. and place them above the tops of the Letters in Cypher in this order.

123	12312312	31	231	2312	31	231231
xkk	kqahtrt	ti	wnb	eo xa	ow	dkbqfsg
2312312312	31	2312	31	231	23123123	
etvtasworp	yr	wndw	bb	ofb	etqe qyfk	
12312	31	2312312	31	23123123	1231	
xkkvg	ow	ptxkqi	ti	dxmdkvlk	z lqo	
23123	123	1231				
vkuxk	xkk	xxxq.				

4. Observe where the same Character and the same Figure happen to fall together, and you will find that thus it always expresseth the same Power as in the Example; K with 3 placed above it has the Power of E through the whole Writing; X with 1 upon the top of it signifies H, &c. But,

5. The same Letter when its Figure is altered cannot express the same Power, e. g. Q with 1.

expresseth N ; but Q with 2 signifies O, and Q with 3 L, &c.

6. One and the same Letter will be express'd by different Characters, e. g. Q with 2, R with 1, and T with 3, express severally O in the Writing.

7. Two Letters of the same power cannot be joyned together in the same Character ; and consequently, where you find any Character double in a Writing of this nature, it expresseth different Powers.

8. Having made these or the like general Remarks, you may proceed to discover particular Syllables or Words as in the preceding Paragraphs ; and having one, you will find with it the true numbers that are contained in the Key, at least some of them, which will discover the rest.

It is almost superfluous to add, That in your several Operations you must count the Letters *backwards*, since I have told you, that regularly the Cypher is writ *forwards* : but because the Cypher may be otherways contrived, you may try both ways, &c.

¶ 8. Of Secret Writing by Points, Lines, &c.

The Secrecy in an Epistle may consist in Points, Lines, &c. which are distinguishable one from another by their place, not their figure ; all of the same Situation (whatever the nature of the Figure be) expressing the same Character. v. g. Suppose the Paper to be writ upon,

upon, be secretly divided into twenty four equal parts, according to the breadth of a plate upon which the Letters are described; and then by Application of this to the Epistle, 'tis easie to conceive the way of writing it. This is published in the *Secret and Swift Messenger*, p. 92.

SOLUTION.

This contains no great nor new Intricacy; for you may extract the Points, &c. that fall in the first perpendicular Line in any Character, and the Points that are in the next perpendicular line by a differing Character, and those Points in the third line by a third Character; and so for all the rest, until you come to an end or rather the side of the Epistle, towards the right hand; and then 'tis resolvable by the common Rules.

Having now removed the most material Difficulties under this Section, I proceed to

SECT.

SECT. 2.

Of Secret Writing, by altering the Places of the Letters, where the Powers remain the same.

Bishop *Wilkins* observes, That the *Difference* of *Characters* in the World, is part of the *General Curse* upon their once *one Tongue*; and from the *Parity of Reason* we may infer, that the *different methods* of writing those *Characters* is so too. Sec. and Swift Mef. P. 88.

The *Oriental Languages*, *Hebrew*, *Chaldaick*, *Samaritan*, *Syriack*, *Arabick*, *Persian*, *Coptick*, &c. are writ from the right-hand to the left, only the *Ethiopick* and *Armenian* proceed from the left to the right-hand.

As also do all the *Occidental Languages*, *Greek*, *Latin*, *French*, *Spanish*, *Italian*, *German*, *English*, *Sclavonick*, &c.

At first the *Greeks* writ from the left to the right-hand, and again from the right to the left, forward and backward: Hence *Literas exarare* signifies *to Write*, a Metaphor taken from *Plowing of Ground*.

Thus the sense of an *Epistle* in a known Language might be perplexed, if the writing should be contrived after the method of writing some *Foreign Tongue*. And we have this Example from the *Secret and Swift Messenger*.

T	i	l	w	e	l	d	f	r	e
h	t	l	f	f	o	o	t	r	e
e	f	e	u	h	h	u	u	f	l
p	h	n	t	a	o	t	o	h	p
e	t	c	f	l	t	t	h	a	p
f	o	r	g	l	e	h	t	n	u
t	d	e	n	n	l	e	i	d	f
i	e	a	o	o	b	f	w	f	y
l	c	f	m	t	a	i	e	p	d
e	n	e	a	b	e	e	g	e	e

Here the Rows are put instead of the Lines: And if you begin at the first Letter towards the left-hand, and read down that Row of Letters, then read the next upward, and the following down again, and so to the end, you will find these Words:

The Pestilence doth still encrease amongst us; we shall not be able to hold out the Siege without fresh and speedy Supply.

This is said to be the ordinary way of writing amongst the Inhabitants of the Island *Ta-probane, China, and Japan.*

This manner of Secret Writing is but slenderly touched by any Author I have seen on that Subject: and had it not gotten greater Perfection by private Practice than open Instructions, I had saved the Reader and my self the Trouble of exposing it to the Publick.

¶ I. *Of the Combination of three or more Letters.*

The first remarkable Improvement I find of this kind of Cryptography by *altering the places of Letters*, is by *the regular Combination of three, four, or more Letters*: I had it of a Gentleman, who (I am fully satisfied) would put it to no bad *use*; but since it may fall into bad *hands*, I have his leave to provide against its harm. And that we may proceed regularly therein, it is necessary, first to enquire, *How many several ways any given number of Letters may be combined? (i. e.)* How many different Positions they can regularly admit of. And for that end I have hereunto subjoyned the following Table.

Table

Table of Combinations.

Letters		Several ways
1	May be combined	1
2		2
3		6
4		24
5		120
6		720
7		5040
8		40320
9		362880
10		3628800
11		39916800
12		479001600
&c.		

Construction of the Table.

1. At the left-hand of your Table stands a Rank of Figures expressing the number of Letters to be *combined*, encreasing in an Arithmetical proportion from Unity, or 1. and by the common excess of 1, or Unity.

2. To the right hand of these stands the number of *Combinations*, or several ways they can be combined.

3. As for 1, being it has but one Position, I set 1 opposite to it in the Rank of Combinations.

4. I

4. I multiply 1, in the Column of Combinations, by two, in the Column of Letters, and set the Product, *viz.* 2, opposite to it, which shews how often two Letters or Things can be combined, *viz.* two times.

5. I multiply 2 in the Row of Combinations, by 3 in the Column of Letters; and over against it I set 6 the Product, which shews that three Letters have six regular Positions or Combinations.

6. I multiply 6, the last number of Combinations, by four, the number of Letters, marking down 24 the Product, as in the Table. And thus I proceed, multiplying each last product by the next superior number of Letters, and writing the several Products against their respective Multipliers; and these Products shew how many Positions their opposite number of Letters have, as 5 have 120 several Positions, 5 admits of 720, &c.

Demonstration.

1. It is manifest, that one Letter or Thing has but one Position, and two Letters have twice the Position of 1, *viz.* once before and after it. *e. g.* *AB, BA.*

2. From the Combination of two Letters we find that of 3, for the new Letter added is three times applicable to the former Positions, *viz.* in the beginning, middle, and end, *e. g.* the Letter C being joyned with A B, the first combination may be C A B, and the second

E

C B A.

CBA. Again put C in the middle, and it yields other two differences, *viz.* ACB, BCA. And when C is put in the last place, you have a fifth and sixth Difference, *viz.* ABC, BAC.

3. From the Combination of three Letters arises that of four Letters; *viz.* ABCD : for D can be four several times applied to each of the former six Differences; *e. g.* in the first, second, third, and fourth or last place.

4. From the twenty four Combinations arising from four Letters, you have that of 5; *e. g.* if the Letter E be added, it is five times applicable to each of the former twenty four *regular* Positions: and so for any other Number in *infinitum*.

I have said *Regular* Positions, because any number of letters or things may be *irregularly* varied in their Positions very much above this Order; as for Example, AB is capable of these irregular Variations, AA, AB, BA, BB; and at this rate, three Letters have no less than 27 Positions in all, *viz.* six regular (as before) and twenty one irregular Positions. But of this when we come to treat of *Secret Writing by more Characters than are usually required to the framing of Words*.

¶ 2. *A new Method how to Write Secretly by the Art of Combinaticns.*

I. To write Secretly by the method proposed, a certain number of Letters are combined to lock and unlock the Epistle. The differenc

ces of writing down the Positions, as, which shall be first, which second, which third, &c. in order, may be varied to a vast number; e.g. three Letters ABC, having six regular ways of Combination; these six Positions are capable of 720 several Orders, for the Rows may be combined amongst themselves, the same way as Letters. Therefore,

2. The Order of the Rows is agreed upon at parting.

3. The number of Letters combined, which is the Key, may be express'd in the Epistle by some Mathematical Figure, as Δ for three Letters, \square for 4, &c. or by some other private Mark.

4. They frame a Rectangular Table of as many Columns as there are Letters combined.

5. The Letters so combined, are placed in their natural order upon the top of the Table.

6. Having determined of how many lines the Table shall consist, the order of the Combinations agreed upon is set down in a Row, in the first Column towards the left hand; as you may see in the following Table.

7. The Table being thus prepared for Writing, they observe the order of the Combinations, and write according to its Direction.

8. When they have placed one Letter in every Column of all the lines, they begin a new, and so go on until the Writing be finished.

9. And lastly, they take the letters out of the Table according to their Partitions, as so many barbarous Words, upon a Paper apart, and send it to the Confident.

Example.

Let the Key for the number of Letters combined, be a Triangle; and the Subject of the Writing,

We are big with Expectation to know the Success you have had, whether the Arms you have undertaken for will be ready upon Occasion. Let your next be writ by the square Key.

Form of the Table for Writing.

Order of Positions.	A	B	C
1 CBA	a t s a s k d e t	e c e h m a a l i y	w e b e r t e n r e
2 CAB	e t e w o n u y y	b i c h u f p o t	r a u d y e y t b
3 ACB	j o e e h o o u h	w t s b u w o n s	g n s t a r n r e
4 BCA	h n u t n l a t a	i o y e e i c e q	t k o r u l c x u
5 BAC	x w a e e e i e e	e o h b d b s b r	p t v a r r o w k

A further Explication of this Table.

CBA, being the first Position, (*W*) the first letter in the Writing is placed under C in the last Column, and *E*, being the second letter, is put under B in the next Column, and *A* the third letter, under A.

CAB,

CAB, being the second Position, the fourth Letter in the Writing, *r*, falls in the second line under C, the fifth Letter, *e*, under A, and the sixth, *b*, under B in its Column, all in the same line.

ACB. being the third Position, the seventh letter in the Epistle, *i*, is put under A in the third line, the eighth letter *g*, under C, and the ninth letter *w*, in the Column B.

And so they go through the writing, always beginning again, when they are at the end of the Table; so long as there is any thing to write.

The writing taken out of the Table will stand thus:

△ *Atsaskdet. ecehmaaliy. wehertenre.*

etcwcnuyy. bichisfpot. raudyeytb. ioeeboouh.

wtsbrwons. gnstarmre. hnutnlata. ioyeeiceq.

tkorulcxu. xwaeēēēē. eobhdbsbr. ptvarrowk.

The terminal Letters may be so marked to prevent Confusion.

I have insisted the more upon this Method, because the manner of Combining, and the way of Writing by such Combinations being once perfectly understood, the Rules for Decyphering may be the more succinct, and the more easily comprehended.

SOLUTION.

1. If the Figure of the Key be prefix'd to the Epistle, expressing the number of Letters combined, take as many Letters out of the first places of seeming Words in the Epistle, as shall be equal to that number so express; and you may soon find out their true Order without the trouble of a new Combination, tho the trouble of combining be not so very great, as the discovery of a reasonable Design may be of Importance to the publick.

Thus in the Example given, you have Δ (which being supposed to shew that three letters are combined) extract the three first letters from the three first seeming words of the Epistle, viz. *a e. w*, here at first View you may perceive the Order. Then taking out the next three Letters, *e. b r*, you have *a* for the first letter of the word from the first line, and *e* for the last letter; and then you are only to consider whether *b* or *r* is the middle Letter, which is easily determin'd; so *b* (being left out there) must be the first Letter of the next word: Thus you may proceed; for it's needless to enlarge in a Case so plain.

2. If there be no Key given, take the number of Partitions of seeming words in the Epistle, and find out their several Divisors, which may be performed by the following Rules.

How to find out the equal Divisors of any Number.

1. Divide the Number given by some Prime Number (*i. e.*) such a Number that cannot be divided, but by it self, or Unity; and the Quotient by some or other prime Number, and the last Quotient again by a prime Number; and so go on until the last Quotient of all be one; and thus you shall find a certain Number of prime Divisors.

2. Make a rectangular Table that shall consist of as many Columns as you have prime Divisors, which you must place one after another at the Tops of the Columns; and by help of them you will find all the rest of the Divisors, *viz.*

By multiplying the first prime Divisor towards the left hand of the Table by the second, and writing the Product under the second. Next, By the third prime Divisor, multiplying all the Figures in the Table towards the left Hand, setting the several Products in the third Column: And so forth, throughout all the prime Divisors; but with this Caution, That one Product be not written twice. And in end, the several Numbers in your Table will be all the Aliquot Parts, or just Divisors of the given Number.

E 4

Example,

Example to find out all the Divisors in 450.

$$\begin{array}{c|c|c|c|c|c} 450 & 225 & 75 & 25 & 5 & 1 \\ \hline 2 & 3 & 3 & 5 & 5 & \end{array}$$

The first Line contains the first Dividend, and the respective Quotients; the lowest line is the several prime Divisors.

Now 450, the Number given, being divided by 2, a prime Divisor, the Quotient is 225, which being divided by 3, you have 75 for a new Quotient; and that again divided by 3, you have 25 for another Quotient. This last divided by 5, gives 5, which being a prime Number, you have 1, or Unity in the last Quotient of all: So that your prime Divisors are, 2, 3, 3, 5, 5, all which set down in the Tops of the Columns, and multiplying them according to the Rule given, the Operation will stand thus.

2	3	3	5	5
6	9	10	25	
	18	15	50	
		30	75	
		45	150	
		90	225	
			450	

All the Divisors of 450, are 2, 3, 5, 6, 9, 10, 15, 18, 25, 30, 45, 50, 75, 90, 150, 225; and one of them (supposing the Epistle to have consisted of 450 seeming words) should have been the number of Letters combined for the Key: For the number of seeming words in such an Epistle, is equal to the Rectangle made of the Figure of the Key, or number of lines; and consequently the Figure of the Key, or number of Letters combined, is some *aliquot* part, or equal Divisor of the number of seeming words.

But to save all trouble in search of the Key, you may take out a certain number of letters out of the first places of the seeming words: Write them down in a line; next, take just as many Letters out of the second places of the same Partitions, and then the Letters out of the third, fourth, fifth places, &c. placing them directly one under another in order; or rather for Dispatch, take out the seeming words, and write them down in Rows, beginning at the first, and then proceed to the second, third, fourth, fifth, &c. until you have gone through them; and if the Number be too great, take as many as you think fit at a time, placing all the Dots you find above the Heads of the letters at their sides. E. g.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.	A	e	w	e	b	r	i	w	g.	h.	i	t	x	e	p
2.	t	c	e	t	i	a	o	t	n.	n	o.	k	w.	o	t
3.	f	e.	h	c	c	u	e	s.	s	u.	y	o	a	h	v
4.	a	h	e.	w	h	d.	e	h	t	t	e	r.	e.	h	a
5.	s.	m	r	o	u.	y	h	v	a	n	e.	u	e	d	r
6.	k	a	t	n.	f	e	o	w	r.	l.	i	l	e.	b	r
7.	d	a	e	u	p	y.	o	o	n.	a	c	c	i	s	o
8.	e	l	n.	y	o	t.	u	n	r.	t.	e	x	e.	b	w
9.	t.	i	r	y.	t	b	h	s	e.	a	q	u	e.	r	k
10.	—	y.	e	—	—	—	—	—	—	—	—	—	—	—	—

I have marked the Lines and Rows with Figures for their more easie distinction.

Having brought the Writing into this Order ;

1. Search in the several Lines for some of the Particles of that Language you shall suppose the Epistle to have been writ in: If in English, make Suppositions, *E. g.* for such little words, as, *the, that, for, of, to, and, &c.* and the like, without some of which no man can well express Business of any moment.

2. Having supposed in any of the Lines for some one of those mentioned, or the like Particles, you may prove the Truth of your Supposition, by taking out the opposite Letters of all the other Lines: And if they do not make up Words, or Syllables, or produce such Letters as can probably follow one another in that Order, your first Supposition is false, and you must suppose anew.

3. Ha-

3. Having by fresh Suppositions found some usual Word: And the letters of the other lines (in the same Order) agreeing, the Words or Syllables arising from them, will direct you to some new Row that goes before or after in the true Order: And thus you may proceed till you have found out the whole Writing, which by this time will be no great difficulty.

Example.

In the sixth line you have *f* once, *o* once, and *r* twice; so that probably amongst these Letters you may find the Word *for*; and upon Tryal, the Supposition is proved by the other lines, e. g. *Line 6. by lines 1, 2, 3, 4, 5, 7, 8, 9.*

<i>Rows</i>	5 7 9
6.	<i>f o r.</i>
1.	<i>b i g.</i>
2.	<i>i o n.</i>
3.	<i>c e s</i>
4.	<i>h e t</i>
5.	<i>u. h a</i>
7.	<i>p o n.</i>
8.	<i>o u r.</i>
9.	<i>t h e.</i>

Here in the fifth line, you find *u* a terminating Letter, which must then have before it the Vowel *o*, as in *you*, or *e*, as in *Lien*: And in this line you have *o*, once, and *e*, twice; so that

that in three Suppositions at most, you shall have the preceeding Row in its natural order, thus supposing it, *o*, in the fourth Row that joyns the Vowel *u*, the Writing will stand thus;

	4.	5.	7.	9.
1	e.	b	i	g.
2	t	i	o	n.
3	c	c	e	s
4	w	h	e	t
5	o	u.	h	a
6	n.	f	o	r
7	u.	p	o	n.
8	y	o	u	r.
9	y	t	h	e.

Now having *ou*, it is most probable that *y* is wanting to joyn with it; which standing in the sixth Row of the Line, write down that Row in order thus;

	6.	4.	5.	7.	9.
1	r	e.	b	i	g
2	a	t	i	o	n.
3	u	c	c	e	s
4	d.	w	h	e	t
5	y	o	u.	h	a
6	e	n.	f	o	r
7	y.	u	p	o	n
8	t.	y	o	u	r
9	b	y.	t	h	e.

And

And so you may go on until you get through the whole Writing; which will in end stand thus;

W e . a r e . b i g . w i t h . e x p
e c t a t i o n . t o k n o w . t
h e . f u c c e s . y o u . h a v
e . h a d . W h e t h e r . t h e . A
r m s . y o u . h a v e . u n d e r
t a k e n . f o r . w i l l . b e . r
e a d y . u p o n . o c c a s i o
n . L e t . y o u r . n e x t . b e . W
r i t . b y . t h e . s q u a r e . K
e y .

There are sometimes other helps obvious to discover the sense of an Epistle obscured by this Invention, *e: g:* you see only two Letters falling in the last Line of the Example, whereby I not only conclude that the Epistle ends with them, but may also infer from the Supposition of a Regular procedure in Writing it, that the Letter began at some of the seeming Words, that composed those two Rows, *viz. Ecehmaaliy, or webertenre*: The reason is evident, &c.

This Method of Secret writing is at first sight distinguishable from any other, only by observing the equality in the Division of its Letters.

Note.

There are great variety of Inventions of this kind more easie to the confederates. Whereby they only write their secret intentions in a Paral-

rallelogram or other Mathematical figure, and confound the sense, by the Method of extracting it, I shall inquire into a few.

¶ 3. *Of Secret writing by help of a Parallelogram, where the Letters are extracted out of that figure Diagonally.*

To perform this a Man needs only form a Parallelogram or Table, and without any Combination or other obscurity in the writing, insert his secret intentions therein; e:g: let the sense of the Epistle be,

I suppose that things are so forward by your diligence that we may adventure at all, once next week. Meet me towards ten to morrow's night at the old place.

It is first insert in the Table thus.

I. f u p p o f e. t h a t. t h i n
 g s. a r e. f o. f o r w a r d. b y.
 y o u r. d i l i g e n c e. t h a
 t. w e. m a y. a d v e n t u r e. a
 t. a l l. o n c e. n e x t. w e e k.
 m e e t. m e. t o w a r d s. t e n.
 t o. m o r r o w s. n i g h t. a t.
 t h e. o l d. p l a c e. *b x y f q.*

Here the last five Letters *b, x, y, f, q*, are of no use but to fill up the voyd Places in the Table.

The first Method I have observed in practice, of obscuring the meaning of such an Epistle, is by Copying it out of the Table Diagonally, upon a Paper apart (*i. e.*) by supposed Lines extending from the second Letter in the first Row towards the left Hand, to the second of those in the uppermost Line, and from the third Letter in that Row to the third in the upper Line: next from the Letters of the last Line, to those in the upper Line that remain, and then to the last Row towards the right Hand, &c. *Diagonal* is a Mathematical term, from *δία*, and *γωνία* an *Angle* or *Corner*.

Example.

They first write down *I.* beginning at the upper Corner of the Parallelogram, next they take the other two Letters that are next in order to it, *viz. g s*, then they extract the next three in order, *viz. y s u*. And so they go on untill they come to the last Corner, *viz. q*. The whole Writing being extracted in this manner, will stand thus.

I. g s y s. u t. o a p t. w u r p m a e. r. e. o
 t e l m d f s t o. e l. a i o. e. h m t. o y. l f t e.
 o m n a i o h o r e. c d g r a l r t e. v e w t. d.
 o o n e n a t p w w e n c r h l s. a x t e. d. i a n
 r t. u t b n c i d w r h y. e. g s. e e. a b h t e a
 x t. e k. y a n f t. q.

Resolution.

For Resolution of this and the like manner of Secret Writing, the only difficulty is, to find out the number of the Lines and the number of Rows. And here you may observe that the number of Letters in the Epistle is equal to the Rectangle made of the Number of Lines and Rows, so that if you take the Divisors or Aliquot parts of the number of Letters, you may find out the number of Lines and Rows by a few suppositions and consequently the involved meaning.

Nay you may soon discover any Writing of this Nature, by reducing the Letters of the Epistle into Diagonal Lines, as if you had found out its true Figure. *e: g.*

First you may mark down *I.* the first Letter in the Writing by it self, as in the Margine. Next write the two following Letters, *g s* by it thus, then to these joyn the three following Letters *y s. u* thus, afterwards the following four Letters *t o a p* thus, and so of the following five Letters, &c. You will perceive when Words or Syllables appear, and withall if you observe the Cohæsiion of Words or Letters, between the end of the first Line, and the beginning of the second, you will find out where these two Lines joyn in the sense, and consequently where the first line ends, thus you shall have the number of Rows, by which if you divide the whole Letters, the Quotient gives you the number of Lines, &c.

This

I.
I. s
g s
I. s u
g s.
y
I. s u p
g s. a
y o
t.

This way of Decyphering may seem to be deluded two ways.

1. By beginning (when they Copy the Epistle out of the Table) at some of the other Angles.

2. By inserting Nulls before the Epistle.

As to the first, if they begin at the lower Angle towards the left Hand, the Words will discover themselves as before. Only the order of the Lines will be reversed in the Operation, *viz.* The first Line, last in the true order, &c.

2. If they begin at the upper Angle of the Parallelogram towards the right Hand, the Lines will be in their true order, but the Writing must be read backwards. 3. If at the lower Angle towards the right Hand, the order of Lines will be revers'd and the Writing must also be read backwards. This holds by the ordinary Operation, but you may frame your Figure for Discovery, according to these three Suppositions, *viz.* Beginning it at any Corner, &c. Yet I judge the ordinary Operation will give the speediest Resolution.

Note, That by the last Supposition, *viz.* By beginning at the lower Corner towards the right Hand. You are not to expect Words or Syllables in the beginning of the first Line, by your Operation, being it is last in the true order, and Mutes, perhaps, may be insert to fill up the void places in the Figure, so that you may observe the other Lines.

As to the second by inserting Nulls before the Epistle, they may in process of time be discovered thus;

F

When

When upon Tryal, you find the Writing in the Epistle will make nothing of sense, lay aside the first Letter, and make a new Supposition with those remaining, if nothing yet appear, lay aside two Letters and proceed as before, then leave out three, four, &c. until you perceive Words, &c. But to leave this.

¶ 4. *Of Argile's Method for confounding the sense of an Epistle by altering the places of the Words.*

As by changing the places of Letters, so by altering the Natural Order of the Words, the sense of an Epistle may be obscured. Yet since both are Decypherable by the very same Rules, we shall not make any distinction; but take either as they come to Hand. And therefore have I subjoyned this Method of the late *Earl of Argile's* to the preceeding Paragraph, which is in effect but a new alteration in Copying out the Writing from the Table, in which it was at first contrived. Perhaps he had in his Eye, that way of Writing we have observed before, to proceed from the top to the bottom, and then upwards again, &c. Wherein the Rows are instead of Lines, and said to be usual in *China, Taprobane* and *Japan*.

Of this recent instance we have the following account in the *Discoveries made in Scotland*. *The words in the long Letter were so Ordered that 254 words in course were interposed betwixt the first and second word in sense, and as many between*

We need not go far for an Example.

I know not the grounds our Friends have gone upon which hath occasioned them to offer so little Money as I hear neither know I what assistance they do intend to give and till I know both I will neither refuse my Service nor do so much as object against any thing is resolved till I first hear what Mr Red or any other you send (shall) say only in the mean time I resolve to let you know as much of the grounds I go on as is possible at this distance and in this way I did truly in my proposition mention the very least sum I thought could do our business effectually not half of what I would have thought requisite in an other juncture, &

The Words are *Argile's*, and after his way of obscuring them, they will stand thus.

I gone so I and refuse object first you time much is way the our would have business very I possible I send hear against my till what little upon know not which Money assistance I service any what shall resolve the at did least effectually thought requisite not sum truly this grounds to say Mr thing neither know they as hath the grounds occasioned I do both

o is Red only let I distance in I half in an of
 ought my and go you in or resolved so I intend hear
 em our Friends to neither to will much till any
 e know on in proposition could what other juncture
 do mention this as as mean other I as neither give
 now offer have.

SOLUTION.

Here the great difficulty is the same, as in
 at of the preceding Method concerning the
 mber of Lines and Columns, for these two
 umbers being given, as in *Argile's* Letters;
 found out by the Rules already delivered.
 here remains nothing, but to reduce the writ-
 g in the Epistle to such a form as you suppose
 to have been writ in at first.

Now as to the Example, we shall grant that
) intelligible Key is given; however the
 mber of Words being 128, and supposing it
 be equal to the rectangle made of the num-
 er of Lines and Columns, you may take it's
 veral equal Divisors or Aliquot parts, which
 e 2, 4, 8, 16, 32, 64, which you may set
 own reversed one to another thus;

2	64
4	32
8	16
16	8
32	4
64	2

F 3

Some

Some of these number is that of Lines, and the number opposite to it (being its equal Divisor, or Dividend, as it falls greater or lesser) is the number of Columns, and if you make Tryal by all, you cannot miss of your aim.

But supposing Nulls were by compact joyned in with such an Epistle. Its equal parts or Divisors are by that means altogether obscured.

To remove this difficulty, (besides what hath been said concerning the former Method) I shall further add, that you may proceed by Suppositions at random, as to the *number* of Lines or Columns beginning very low as at *two* or *three* for *Security*, or going *first* through what is *most* probable for *Expedition*. When you have the true number of Lines, if their order be perplexed (which may happen by Nulls) 'tis true the meaning will be as intricate as ever, yet if you make a different position for each supposed Line, abating always one Letter in every new Position, you shall in some of those have the sense of the Epistle unmasqued, whatever the number or places of these Mutes shall be, the Demonstration is obvious. Take this Example.

The	whole	design	is	laid
open	take	your	measures	as
the	knowledge	of	this	shall
direct	you	fare	you	well

Suppose there were Nulls insert in the Table, where you see the Words marked by a different Character thus; The

The whole you design is laid
 open take his your measures as
 the knowledge kindred of this shall
 direct you my fare you well

Nay to render the Writing more intricate after it is extracted, let new Mutes be added. e. g. *Affection Love Passion Mystical Honor* the open the direct you knowledge take whole you his kindred my fare of your design is measures this you well shall as layd *Father Sister Pounds* &c.

Now this Epistle once supposed to consist of 4 Lines the first Position, with all the Words will be false. e. g.

<i>Affection</i>	the	direct	<i>kindred</i>	<i>my</i>	this	as	layd
<i>Love</i>	open	you	<i>his</i>	fare	measures	shall	<i>Father</i>
<i>Passion</i>	the	knowledge	<i>you</i>	of	is	well	<i>Sister</i>
<i>Mystical</i>	<i>Honor</i>	take	whole	your	design	you	<i>Pounds</i>

But at the second Position abating one word you shall have those added Nulls all by themselves in this order, viz.

<i>Love</i>	direct	you	<i>my</i>	fare	you.	well	
<i>Passion</i>	the	knowledge	<i>kindred</i>	of	this	shall	<i>Pounds</i>
<i>Mystical</i>	open	take	<i>his</i>	your	measures	as	<i>Sister</i>
<i>Honor</i>	the	whole	<i>you</i>	design	is	layd	<i>Father</i>

Here the order of the Lines is inverted, which is occasioned because the Nulls or non-

significant Words in the beginning make an odd Row, so that the second Row being first in sense, you proceed from the bottom upwards, whereas had it likewise been first in the Writing you should have begun at the top, &c.

¶ 4. *The former Method of Secret Writing rendered more intricate.*

This way of Secret Information may be yet further obscured by confounding the order of Columns according to compact, when they extract the writing out of the Table.

Example in Letters.

The Example in ¶ 3. is sufficient to illustrate any new difficulty arising from this.

	5	11	3	16	1	8	6	12	2	13	4	15	7	10	14	9
1	l.	i	u	p	p	o	s	e	t	h	a	t	t	h	i	n
2	g	s.	a	r	e.	f	o.	f	o	r	w	a	r	d.	b	y.
3	y	o	u	r.	d	i	l	i	g	e	n	c	e.	t	h	a
4	t.	w	e.	m	a	y.	a	d	v	e	n	t	u	r	e.	a
5	t.	a	l	l.	o	n	c	e.	n	e	x	t.	w	e	e	k.
6	m	e	e	t.	m	e	t	o	w	a	r	d	s.	t	e	n.
7	t	o.	m	o	r	r	o	w	s.	n	i	g	h	t.	a	t.
8	t	h	e.	o	l	d.	p	l	a	c	e.	b	x	y	f	a.

You see the order is this, 5, 11, 3, 16, 1, 8, 6, 12, 2, 13, 4, 15, 7, 10, 14, 9. When they Copy it out of the Table, they begin at the top of the Row at number 1, and so proceed
suc.

ſucceſſively to Numbers, 2, 3, 4, 5, &c. The Row of Letters, which is firſt in order, is 5th by compact, thoſe that ſtand in the ſecond Row, are 11th in the Order of extracting the Writing, &c. thus; p e . d a o m r l t o g v n w s . a u a u e . l e m e . a w n n x r i e . l . g y t . t . m t t f o . l a c t o p t r e . u w s . h x o f i y . n e . r d . n y . a a k . n . t . q h d . t r e t t . y f s . o w a e o . h e . f i d e . o w l h r e e e a n c i b h e . e e a f t . a c t t . d g b p r r . m l . t . o o .

SOLUTION.

What is already propoſed for finding out the number of *Lines* and *Rows*, and for *Separating* the *Mutes* from *ſignificant* Letters, will reach this Method; & what is ſaid in the Solution of ¶ 2. for reducing the Rows into their *Natural Order*, will hold good here likewise. *e. g.*

When after (perhaps) ſeveral falſe Suppoſitions as to the number of *Lines*, you have at laſt ſuppoſed the *Table* of the *Epistle* to conſiſt of 8 *Lines*; tho there were 100 Nulls in the Writing; in one of eight Positions you ſhall have them a part, as in the former inſtance and the Writing in the following order.

p t u a l .

p	t	u	a	I	s	t	o	n	h	s	e	h	i	t	p
e	o	a	w	g	o	r	s	y	d	s	f	r	b	a	r
d	g	u	n	y	l	e	i	a	t	o	i	e	h	c	r
a	v	e	n	t	a	u	y	a	r	w	d	e	e	t	m
o	n	l	x	t	c	w	n	k	e	a	e	e	e	t	l
m	w	e	r	m	t	s	e	n	t	e	o	a	e	d	t
r	s	m	i	t	o	h	r	t	t	o	w	n	a	g	o
l	a	e	e	t	p	x	d	g	y	h	l	c	f	b	o
1	2	2	4	5	6	7	8	9	10	11	12	13	14	15	16

Now in the first Line you find *t* thrice, *b* twice, *a* once, and *e* once, and probably amongst these Letters you may have the Word *the* or *that*, upon Tryal you will find *t* in the second Row, *b* in the 13th, *a* in the 4th, and *t* in the 15th Row to favour your Supposition, by the agreement of the other Lines.

And having come this length you may proceed backwards or forwards, as the imperfect words shall best direct you. *e.g.*

2.	13.	4.	15.
t	h	a	t.
o	r	w	a
g	e	n	c
v	e	n	t
n	e	x	t.
w	a	r	d
s.	n	i	g
a	c	e.	b

Note. In this Method if you have once the true

true *number* of *Lines*, notwithstanding non-significants be added; you will in the Operation perceive Words and Syllables appear in one half of the *Lines* at least, even though their *order* be perplext.

There are other Observations, which for brevity I leave to the Ingenious Readers perusal of the Example given in its several positions.

Upon the whole 'tis observable. 1. That this kind of Cryptography by *changing the places of the Letters or Words* (however contrived) will still be *lyable to suspicion*.

2. You may certainly distinguish it from any other kind of Secret Writing, by the *frequency* of the Letters. *e. g.* If the Vowels be often used, &c. Or in short, if the Letters have their *usual frequency* as in plain Writing.

3. You may probably judge of the Language it is writ in, either from the *frequency* of the Letters, or by some of the Letters themselves: *e. g.* *w* is only used in *English, Dutch*, or some branch of the Teutonick, *k* is never used in Latin, &c. nor *q* frequently in *English*: And if the Terminal Letters be given, you may with much certainty find out the Language.

In these last remarks there must be an exception for proper Names, and I hope 'tis enough to have mentioned it. My method leads me next to treat

S E C T. 3.

Of secret Writing, by using more Letters or Characters than are requisite to frame Words.

HAVING gone through the most material kinds of *Secret Writing*, by *Equal Letters* or *Characters* in the two preceeding Sections, I come now to enquire into that arising from *More Letters* than are required to make up *Words*: And here I shall pass by what may not be worth the Enquiry, such as that common Distich.

*Mitto tibi caput Veneris, ventremque DiANæ,
Latronisque caput, posteriora CanE.*

(i. e.) V A L E.

And that wherein the first, middle, and last Letters or Syllables are only significant: e. g. *Fildy Fagodur windeeld arare discogverantibrand*, which is put to express these words,

Fly, for we are discovered.

This is from the *Secret and swift Messenger*; but every Body may see it Nonsense and unpracticable; and sure it is enough in all Conscience to have mentioned it.

A Writing may be so contrived, as that one letter in a line shall only be significant, as in that remarkable *Acrostick* made by one of the Sybils, where the first letters of each Verse be-

ing

ing put together made up these words, 'Ιησὺς
Χριστὸς θεοῦ υἱὸς Σωτὴρ. *Plautus* contriv'd the names
of his Comedies in the first Letters of their
Arguments. *Schottus* relates a way of Secret
Writing out of *Trithemius*, whereby the first,
second, third or last letters of the words may
serve to express the secret Intentions; but I
leave these, and many more to this purpose
under a general *Carveat*.

ScholaSteganog. clas.
7. Erot. 5.

¶ 1. Of secret Writing by Dots, &c. in an
ordinary Epistle.

The first remarkable, and a very ordinary
Contrivance in *Secret Writing*, by more letters
than usually go to the framing of words, is that
insisted on by *Schottus*, viz.

Sc. Steg.
Class. 5.
c. 1, 2, 3.
&c.

1. The Confidants at parting frame an Al-
phabet of Figures to write by, v. g.

A	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	s	t
4	22	10	9	1	11	13	18	3	19	12	8	20	2	21	23	7	6	5
	v	w	x	y	z													
15	14	16	17	24.														

2. Having writ down their secret Intentions on a Paper apart, they contrive an Epistle of some ordinary Business in any Language.

3. They search for the Numbers of the Alphabet that express the letters of the *secret Writing*; and counting the letters in the common Missive from the Beginning, they subjoyn some

some private Mark under every Character where the respective Numbers end.

E. g. Let the secret Intimation be this ;

3	6	18	4	12	12	6	11	16	2	15	5	18	3	6	20	3	
I	s	b	a	l	l	s	e	e	y	o	u	t	h	i	s	n	i
13	18	5	45	16	2	15	7	12	2	9	13	3	20	13	6		
g	h	t	a	t	y	o	u	r	L	o	d	g	i	n	g	s	

And the Epistle to run thus :

Having understood that I could not be safe any longer where you are, I have chosen rather a voluntary Banishment to wander with my Liberty abroad, than to lie under the daily Hazard of losing it at home: 'Tis in my opinion the least of the two Evils: 'Tis true, I am innocent; but Innocence is not always a Buckler; so that I hope you will not condemn, even tho' you cannot approve my choice, at least, till you have the particulars of my Case; which expect per next.

You see the Figure for the first letter, to be put in Cypher, is 3; therefore a secret Mark or Point must be placed directly under (or above) the third letter of the Epistle, *viz. v.* and number 6, expressing the second letter in secret Writing, a Dot must stand under the 6th. letter from *v.* *viz.* under *n*, and 18 letters from *n*, will stand another Dot, &c.

Example.

Example.

Having understood that I could not be safe any longer where you are, I have chosen rather a voluntary Banishment, to wander with my Liberty abroad, than to lie under the daily Hazard of losing it at home: 'Tis in my Opinion the least of the two Evils. 'Tis true I am innocent; But Innocence is not always a Buckler; so that I hope you will not condemn, even tho you cannot approve my Choice, at least, till you have the particulars of my Case; which expect *per* next.

The Points may be so ordered, as that they shall not be visible, till held by the Fire, or dipt in Water, &c.

See the last Section of this Chapter.

SOLUTION.

For Decyphering this you have no more ado, but to take the number of Letters, from the

the beginning of the Epistle to the first point, from that to the second, and so from point to point until you come to the last; Writing down the several Numbers, distinctly one after another, and then you have it in a plain Cypher resolvable by the former Rules.

7 Book of
the Art of
War.

Nich. Machiavel tells us, that in his own time a certain Person designing to signify some Secret intention to his Friends, interlined private marks in Letters of Excommunication that were to be Publickly affixt, by which the Secret was afterwards communicate to the Confederates, and this has in all probability been performed by the former or the like Method of Secret Information.

¶ 2. *Contains several ways of Inserting Nulls to Prevent or Divert Suspicion.*

I have already considered the obscurity arising from the Insertion of *Nulls* at random, as to several of the ways of Secret Writing mentioned: But here I shall enquire into them, as insert by compact to *prevent* or *divert* suspicion, and indeed their great design, who use them in the following methods, is generally one of the two.

When they would quite *Remove* suspicion the Epistle is so contrived, as that to outward appearance, it may appear to have nothing in it but some Trivial Business, as news, &c. or a Private Concern, as borrowing of Money, paying of Bills, &c. But

But if the Person will render the Paper suspected, they may endeavour to divert that Suspicion, by Inserting a false design to cloak a true one.

The nature of this Secrecy will more fully appear in the following Examples.

Example I.

Suppose two or more Confederates had agreed to confine their Secret Intentions to one side of the Paper in the Writing, according to some Private Compact. Thus if upon discovery of a Plot a speedy flight were designed, and to be communicated by this contrivance, it might be writ at first in manner following.

POSTSCRIPT.

Friend

As I have not time to write more at present, I shall only say that I am ever your affectionate friend.

~~Now to obtain the full and perfect knowledge of the true nature of the secret, you must be contented with something to be done to the contrary, and to be done in the most secret manner possible.~~

G

The

The design is not
 Secret there is now no
 safety but by flight
 do not fail to meet me
 half an hour hence
 let the next meeting be
 just without the Gate
 if my Senses are sound
 we may conclude to have
 infallible Evidence
 the snare is prepared
 effectually to entrap
 you and

Your, &c.

POST-SCRIPT.

Prethee
 expose not thy self to
 imminent danger.

Now to obscure the sense and prevent suspi-
 cion the void parts of the Lines may be supply-
 ed with something foreign to the design; and
 afterwards the Epistle pointed according to the
 seeming sense. v.g.

The design is not in danger, to all it is as yet Secret; There is now nothing in view to threaten our safety, but by flight we should ruin all our designs. Do not fail to meet me by six in the old manner in half an hour hence, I intend to be at the Consult, let the next meeting be where they will, I'll have notice just without the Gate, was the Governour this Morning (if my Senses are sound) secure as we could wish him, we may conclude to have hit right on the means, and more infallible Evidence is not on this side Conjuraton, the Snare is prepared they are misted, and see not that 'tis effectually to entrap them and on their Ruine to raise you and

Your, &c. 1

POST-SCRIPT.

Prethee throw off those vain fears, expose not thy self to scorn, when there's not any imminent danger.

Here to divert the suspicion what is design- ed for the Confederates particular knowledge is divided from the rest of the Epistle, by a supposed perpendicular Line, but however it be divided, the sense cannot well escape a discerning Eye; and to propose a SOLUTION would be superfluous.

Example 2.

*Vid. Schot.
Mag. Uni-
vers. part
4. lib. 1.
c. 3.*

The former Method for Secret Correspondence may be further obscured, by cutting out equal Holes in two or more Sheets or half Sheets of Paper, and each of the Confederates at parting keep one, when there is any Secret concern in agitation, they lay the cut Paper over that they are to write upon, and express their mind through the Holes, which done, the void places are filled up (as before) with any thing to *prevent* or *divert* suspicion; and when it comes to the Confederates Hands. He becomes acquainted with the hidden meaning by applying the cut Paper he kept, to the Writing in the Epistle.

SOLUTION.

This method can hardly have any *positive* Rules for *Decyphering*, nor will the Judicious World need any, were not such ways of Secret Writing fair to pass unsuspected, I am confident they should be abandoned as useless.

First, to solve this new Difficulty lay aside the seeming sense of the Epistle, and afterwards a Man's Reason will furnish him with more light into the Business than a whole Volumn of Instructions. The project is fairly laid down, and 'tis but going through the whole Epistle to find it out, nay you will find many occurring circumstances to help you in the search *e. g.*
suspi-

suspicious words, which may be first extracted, and afterwards you may make Tryal what will best join with them. At worst you may begin with the first two, three, or more words in the Epistle, and perusing the whole add what will make up sense, from thence to the next words and combine as before, &c.

'Tis true this way of *Resolving* is not so infallible as others, because you may find *sense* and perhaps a *design* contrary to the *true* intent of the Epistle, yet for security you may extract all out of it that will stick together, and thus suppose you could not certainly know which of them may be the real meaning, yet all may be secured against, and tho such a discovery could not in *Law* amount to a proof against the Criminal. It may however serve to provide against the attempt.

'Tis observeable that this Method of Cryptography may occasion a mistake amongst the Confederates themselves, without a great exactness in Acting their several parts in Writing and Reading, especially if the Holes be so contrived as that they can only contain Words, Syllables or so, for we must suppose the Receiver of the Epistle to give an implicate Faith to what is delivered him in this manner, and one false step on either side, may give STAY instead of RUN, &c. quite confounding the measures laid down. And if the Holes be large enough to contain Sentences it facilitates the Discoverer's work.

Example 3.

To *prevent* but especially to *Divert Suspicion* (by Non-significants) there is an improvement of the last Methods of Secret Writing too *Publick*, tho not by way of the *Press* (for any thing I know) *viz.* By contriving a Writing according to any of the last Examples, in Secret Characters, containing a Plot, or perhaps some little Sham, a Love Entrigue, or an *Ingenious* Cloak of no *Ingenuous* dealing, as a pretence of broken credit amongst Merchants, and the like, and lockt up by Cypher and a Seal: This Epistle when Decyphered, (which is no more than perhaps the Confederates had agreed on) would give great probability that you had seen clearly into the Mystry, (finding a Plot or other tender concern put in Cypher,) when in truth, you have made no further Progress than they designed for you (in case of surprize) and as to any real intention you are still in the dark.

This Obscurity when it is once suspected falls under the Observations upon the last two Examples.

Example 4.

Advanc.
of Learn.
P. 265.

From the Lord *Verulam* we have one Secret way of Converse to *Divert suspicion* by *inserting of Nulls*, in these Words. *As for the shifting*
off

off Examination, there is ready prepared a new and profitable Invention to this purpose; which, seeing it is easily procured, to what end should we report it as Deficient? The Invention is this: That you have two sorts of Alphabets, one of True Letters, the other of Non-significants; and that you likewise fold up two Letters; one, which may carry the Secret; another, such as is probable the Writer might send, yet without Peril. Now if the Messenger be strictly examined concerning the Cypher, let him present the Alphabet of Non-significants for true Letters; but the Alphabet of true Letters for Non-significants: By this Art the Examiner falling upon the Exterior Letter, and finding it probable, shall suspect nothing of the Interior Letters.

SOLUTION.

The Difficulties here are not very great: 'Tis true, if this Contrivance had never been published, it might have had the desired Effect; I mean, to divert Suspicion: But being made publick by an Author, so universally received, I cannot see, but that the Examiner (even finding the exterior Letter probable) should take a View likewise of the interior, tho its Alphabet might be delivered him for Non-significants.

But supposing no Alphabet in the Case, the Writing is decypherable without it. *v. g.*

I. You may discover from the number of Characters in the Writing, whether two Alphabets be used.

2. After you have found out, that two Alphabets or more are used, you may from the frequency of each particular Character, &c. observe the differing letters that express the same Power.

3. And having by several Operations distinguished the Alphabets one from another, any thing of new Difficulty vanisheth.

3. Of expressing all the Letters of the Alphabet, by any two, or three, or five of them, &c.

Examples I. Of five Letters resolved into two places.

AA, ab, ac, ad, ae, ba, bb, bc, bd, be, ca,
 A, B, C, D, E, F, G, H, I, K, L,
 cb, cc, cd, ce, da, db, dc, dd, de, ea, eb, ec, ed.
 M, N, O, P, Q, R, S, T, V, W, X, Y, Z.

According to which,

Bd aacb abacdddbaaecad.

I am betray'd.

Example

Example 2. Of three Letters transposed through three places.

Aaa, aab, aac, aba, abb, abc, baa, bab, bbb,
 A, B, C, D, E, F, G, H, I,
 bba, bac, bca, aca, acc, acb, bbc, bcb, bcc,
 K, L, M, N, O, P, Q, R, S,
 cca, cab, cba, ccc, cbb, ccb.
 T, V, W, X, Y, Z.

Babaaabcccaaabbaca.

Hasten.

Example 3. Of a Bi-literary Alphabet.

Aaaaa, aaaab, aaaba, aaabb, aabaa, aabab,
 A, B, C, D, E, F,
 aabba, aabbb, abaaa, abaab, ababa, ababb,
 G, H, I, K, L, M,
 abbaa, abbab, abbba, abbbb, baaaa, baaab,
 N, O, P, Q, R, S,
 baaba, baabb, babaa, babab, babba, babbb.
 T, V, W, X, Y, Z.

Aababbaabbaabbaaaba.

FUGUE.

From these Examples you may perceive how a man may express his mind (at any such distance wherein the Eye and Ear may immediately officiate) by any thing that is capable
 of

of a double or triple difference: But of this in the following Chapter.

All these Alphabets are composed by an *irregular* Position of the Letters, which differs very much from a *regular* Combination of letters, as is observed: For,

1. By an *Irregular* Position, *all* the Letters to be used are not insert in all the Places; and thus you see *aaa, bbb, baa, &c.* in the Alphabet of three Letters.

2. The Number of Letters, and Number of Places need not be the same: And thus in the first Example you have 5 letters resolved into 2 places; and in the last Example two letters transposed through five Places, *&c.*

Note, by *Places* is understood the Number of Letters in the several *Ranks*, as in the Examples.

But in a *Regular* Transposition or Combination, *e contra*, All the Letters to be combined must be insert in every Position; and consequently the Number of letters, and Places *equal*: As you may perceive from the *Explanation of the Table of Combinations*, in the preceding Section.

Having mentioned these things, I shall for the Satisfaction of those that are curious, leave some Remarks, to find out how many times this *Irregular* Method varies the Positions of any Number of Letters in their several Places: And,

1. As to the Number of *Places* and *Letters*, take the Number of Letters given; multiply that

that Number by it self, and the Square, or Product arising from the Multiplication, gives their Variations in two Places: *E. g.* In the first Example there are five Letters in two Places: Now 5 the Number of Letters, multiplied by it self, gives 25, the Number of different Positions, 5 letters resolved into two Places can have.

2. When the same Number of Letters is disposed, three in a Rank, or in three Places, multiply the Square by the *Root*, or Number of Letters, and the Product will give you the different Positions of the letters in three Places: *E. g.* multiply 25, the last Product by 5 the *Root*, the *Result*, or *Cube*, 125 shows, that 5 letters in three Places may be so many times varied in the several Positions.

3. If you would know how many *Irregular* Positions 5 letters in 4 Places can have, take the fourth *Power* from the *Root* or Number of letters, (*i. e.*) Multiply the last Product by the Number of letters, *v. g.* 5, and the new Product gives you the Resolution. And thus you may proceed to 5 Places, by finding out the Fifth *Power*; and so go on as far as you please.

Again, if you would find out how many Positions two letters have in any Number of Places desired: *First.* Multiply 2 by it self (as before) which shews, that 2 Letters in 2 Places, have 4 Positions. *2dly.* Multiply 4, the Product, by 2, the *Root*, and you have 8, the Number of Different Positions that 2 letters have

have in 3 Places: 2 Letters in 4 Places have 16 Irregular Positions, and in 5 Places they have 32: And so for any Number in *Infini-tum*.

I need not say much for SOLVING any Difficulty in the former Examples: For this way of Secret Writing (alone) will signifie very little, unless to spend *Time* and *Paper* to the Writer: For if you put a Mark of Distinction between every *two*, *three*, or *five*, &c. of the Characters (as they make up a *significant Letter*) they are liable to Discovery the same way with an ordinary Cypher.

And it is easily discernable when two, three, or five Characters express one Letter, either from the Number of Characters in a Word, or in the whole Writing.

1. From the *Number* in a Word: For when *two* Letters go to the Composition of the Alphabet, there must be *five* Places; and the Words will consist of 5, 10, 15, 20, or 25 letters, &c. If *three* letters in *three* Places, you will find 3, 6, 9, 15, or 18 Characters, &c. in each word, if *five* Letters in *two* places, the words shall have 2, 4, 6, 8, 10, or 12 Characters, &c. a piece.

2. From the *Number* of the letters in the *whole*, as if *two* be only used in one Rank, you shall have *five* differing Characters in the whole at least: *E. g. a, b, c, d, e*. If *three* in a Rank, then you may have 3 Characters: *e. g. a, b, c*, and if 5 in a Rank, you shall possibly have but 2 Characters in the Writing, &c.

There

There might be other Observations made, as from the number of like Characters falling together, &c. were it not superfluous.

¶ 4. *Of Secret Writing by a Bi formed Alphabet.*

This way of Secret Writing is mentioned by the Lord *Verulam*, joyntly with that in the preceding Paragraph, only as preparatory to the Secret Contrivance immediatly following, but is insisted on by it self in Bishop *Wilkins* his *Secret and swift Messenger*, and therefore have I insert it seperately here. For Example.

Adv. of
Learn.
p. 267.

First Alphabet.

*A a, B b, C c, D d, E e, F f, G g, H h, I i,
K k, L l, M m, N n, O o, P p, Q q, R r, S s,
T t, V v, W w, X x, Y y, Z z.*

Second Alphabet.

*A a, B b, C c, D d, E e, F f, G g, H h,
I i, K k, L l, M m, N n, O o, P p, Q q, R r,
S s, T t, V v, W w, X x, Y y, Z z.*

In Writing by this Invention of Secrecy, the Body of the Epistle is to consist chiefly of the second Alphabet. And as Occasion offers, the Secret intentions may be exprest by the Letters of the first Alphabet; this I find illustrated by the following Example, *viz.* From those that are besieged.

Ife

We prosper still in our affairs and shall without having any further help endure the siege.

Here the Letters of the first Alphabet contain these words;

We perish with hunger help us.

I do not mention this for any thing of intricacy, but only for Information that such Methods may be taken.

¶ 5. *Of the Lord Bacon's Invention of Writing*
OMNIA PER OMNIA.

1. For performing this, they must have at Hand a Bi-literary Alphabet as in ¶ 3. And a Bi-formed Alphabet as in ¶ 4.

2. They write down their Secret Intentions or the Writing to be *infolded* on a Paper apart.

3. They make a Supposition, that all the Letters in the first Alphabet ¶ 4. do express *A*, and those in the second Alphabet *B*. And thus they may write what they please, for the Writing *infolding*, so it bear a quintuple proportion to the Writing *infolded* at least.

Or in that Learned Lord's own Words:

Adv. of
Learning
l. 6. c. 1.

To the interior Letter which is Bi-literate you shall fit a Bi formed Exterior Letter, which shall answer the other, Letter for Letter, and afterwards set it down. Let the exterior example be,

Manere te volo donec venero.

And the interior be,

FUGE.

Exam-

Example.

F U G E
Aabab. baabb. aabba. aabaa.
Manere te volo donec venero.

I have hereunto subjoyned an Example for further Illustration out of the *Secret and Swift Messenger.*

Exterior Epistle.

All things do bappen according to our desires the particulars you shall understand when we meet at the appointed time and place of which you must not fail by any means the success of our affairs does much depend upon the meeting that we have agreed upon.

Interior Letter.

Fly for we are discover'd, I am forced to write this.

The

The Example illustrated.

Aabab,	ababa,	babba,	aabab,	abbab,	baaaa,
F	L	Y.	F	O	R.
babaa,	aabaa,	aaaaa,	baaaa,	aabaa,	aaabb,
W	E.	A	R	E.	D
abaaa,	baaab,	aaaba,	abbab,	baabb,	aabaa,
I	S	C	O	V	E
baaaa,	aaabb,	abaaa,	aaaaa,	ababb,	aabab,
R	D.	I.	A	M.	F
abbab,	baaaa,	aaaba,	aabaa,	aaabb,	baaba,
O	R	C	E	D.	T
abbab,	babaa,	baaaa,	abaaa,	baaba,	aabaa,
O.	W	R	I	T	E.
baaba,	aaabb,	abaaa,	baaab.		
T	H	I	S.		

This Method wants nothing of Ingenuity in the Contrivance, and containeth the *Highest degree* of Cypher, which is to signify *omnia per omnia*, without any other Restriction, than that the *outward* Writing must bear a quintuple proportion to the *Inward*. Nay, there may be a Tri-formed Alphabet, contrived and Regulated by the Tri literary Alphabet in ¶ 3. Example 2. And then the Epistle *infolding* will bear but a triple proportion to the Writing *infolded*: Either of which ways is preferable, to that tedious way of Secret Writing *without suspicion*, insisted on by *Tritheimius*, in his first four Books of Polygraphy, and all the improvements it hath met with as shall be made manifest.

Note,

Note, that by the invention of Secret Writing with Dots mentioned ¶ I. a Man may write *omnia per omnia*, or express any intention by any Writing; but the proportion, between the Exterior and Interior Letter will be much greater than in this Noble Lord's contrivance. But to leave this Competition, I proceed.

SOLUTION.

We shall not need to enlarge much upon the Resolution of this kind of Secret Writing, for if you once find out whether two or three Alphabets be used, (and the different kinds of Letters in the Epistle will inform you of that,) you may suppose one Alphabet *A*, a second to stand for *B*, and if there be a third, let it be supposed *C*. Afterwards extract the Writing out of the Epistle, as if these Letters *A*, *B*, or *C*, were only insert, and then it falls under the former considerations.

It is nothing to the purpose, whether your supposition and the Writers be the same, or not; for if you suppose always *A* for his *B*, the Operation will be alike easy.

And here I shall leave this kind of *Cryptography* by *more Letters*, &c.

S E C T. 4.

Of Secret Writing, by fewer Letters than are usual in the framing of Words.

THe Art of *Abbreviations* in Writing, is mentioned by *Trithemius* and most Authors who have treated of *Cryptography*, but pursued by very few or none.

There hath been great variety of these Contractions invented, and their first, and for any thing I hear, their constant use amongst the Romans was for Expedition, such as *A* the mark of *Absolution*, * *C* of *Condemnation*, *απο τις καταδικαζεν*, * *N. L.* *Non Liqueat*, and *N. D.* *Nec Datum*. And thus did the Judges write their several opinions upon a little Stone or *Tessera*, in Cases Capital. Hence it is that *A* was called *Salutis Litera*, and *C* *Litera Tristis*. But there were other *Abbreviations* amongst the *Notaries*, which more properly may be said to have been used for Expedition, *v. g.* *A. T. M. D. O.* *Aio te mihi dare oportere*, *B. A.* *bona actio*, *B. E.* *bonorum emptor*, *B. F.* *bona fides*. *B. J.* *bonum iudicium*. *Ca. M. V.* *causa memorati viri*. *C. C.* *causa cognita*, &c. This way of Writing was retained in the *Civil Law*, until the number of *Abbreviations* was augmented to a Confusion, and * *Justinian* discharged the use of them in *Statutes*, &c.

Pier. Hier.
lib. 17. c.

23.

* Pier.

ibid.

* Pier.

Hierogl.

ibid. & lib.

42. c. 53.

Vid. Schot.

Techn.

Cur. lib. 7.

c. 3.

I. I. Cod.

Tit. 17.

leg. 12.

To this we may subjoin those later inventions, for *Expedition* by *Tachygraphy* or *Short-Hand-Writing*.

In the *first*, certain Characters express whole Words; and to reduce this to a ready practice, for Secret Information, the Confederates must allow a great deal of Time and Pains, for *Contriving* it; and *Instructing* their Confidants in it. *Tritheimius*, speaking of *Cicero's* notes, gives his Judgment of the invention (after he had proposed it as a *mean* for Secret Converse) in these words—*Horum Rex tutissimè uti semper potest Obsequio, quamvis non sine magno labore, manifestaque Bacuceorum suspiciòne.*

And the *second* is in effect but an improvement of the *first*, rendering it a little more practicable; for in *Tachygraphy* Notes are used to express Syllables, and sometimes Words. And herein if you understand but one kind of Short-Hand-Writing; you may Decypher any; for you may judge of *Syllables*, when expressed by single Characters, by their frequency, &c. as of *Letters*. But, besides, you have the advantage of distinguishing the Vowels, which are not expressed, but understood by the Places of the Notes, that (together with their own proper powers) express those of the several Vowels.

See *Masons* or any other upon *Short-Hand*.

It is Observab e that this kind of *Writing* has not so much as the name of *Secret*, for it is termed, *Tachygraphy*, or *Brachygraphy*, not *Cryptography*, &c. agreeable (as is already Observ- ed) to the design of its Invention.

I know it is very Ordinary in Secret Writing, to have an Alphabet of Words signified by single Notes; and in the Lady *Argile's* Letter, Decyphered by Mr. *Gray*, 43 or Dexpress the Relatives *He, His, Their, Him* &c. But the meaning of a few such Characters may be resolved by the sense of the rest of the Epistle.

Discov. in
Scotl. p.
11, 12, &c.

And now having taken a few Observations here of the Method of Writing by fewer Letters than custom requires for framing Words, as it may respect *Secret Information*, I leave it to be improved by others to more regular Intents; and certainly the knowledge of Ancient Abbreviations alone, wants not its advantages for understanding the *Religious* worship, as well as *Civil* Laws, of the Ancient Romans, for generally their *Consecration* of Places or Things was express'd by the first Letters of the Words understood; such as Mer. S. *Mercurio Sacrum*, M. J. *Maximo Jovi*. D. Im. S. *Diis Immortalibus Sacrum*, D. O. *Diis Omnibus*, D. P. *Diis Penatibus*, J. O. M. D. *Jovi Optimo Maximo Dedicatum*, &c.

SECT.

SECT. 5.

Of Secret Writing, by a Deceit in the Paper, or some Material used instead of it.

¶ I. *Of the Lacedæmonian Scytale.*

THat Secrecy arising from the *Paper*, in a written Message, most early, and, perhaps, most universally received, was the *Lacedæmonian Scytale*, contrived by *Archimedes*, who lived about the Year of the World 3735, we have this Relation of the Experiment from *Bishop Wilkins*, *There were provided two round Staves of an equal Length and Size, the Magistrates always retaining one of them at home, and the other being carried abroad by the General, at his going forth to War: When there was any secret Business to be writ by it, their manner, was to wrap a narrow Thong of Parchment about one of the Staves by a Serpentine Revolution, so, that the Edges might meet close together: Upon both which Edges they inscribed their Epistles; whereas the Parchment being taken off, there appeared nothing but pieces of Letters on the Sides of it, which could not be joyned together in the right Sence without the true Scytale.*

Secr. and
Swift Met.
P. 38.

*Vel Lacedæmoniam Scytalen imitare libelli,
Segmina Pergamei, tereti circumdata ligno,*

*Auson. ad
Paulin.*

Perpetuo inscribens versu, deinde solutus,
Non respondentes sparso dabit ordine formas.

Resolution.

* Sec. and
Swift Mes.
ibid.
|| Scalig. L.
de subt. ex-
erc. 327.

As for this piece of ancient Ingenuity, I find it freely * confess'd, That a little Examination might have discover'd it (as || *Scaliger* in a few words clearly demonstrates;) For do but put the Edges of the Paper or Parchment (so writ upon) together, by a Serpentine Revolution, so as both pieces of the first divided letter may be joyned, and it gives the Compass of the *Scytale* to frame one by: And it were no great Task to frame Staves of all Sizes, and have them in readines: Nay, such a Staff may be augmented in Bulk by Wax-Paper, &c. As it may be diminished by taking these off again: But indeed you may find out the Sence without any such Trouble: For after the first letter is joyned, you may successively add piece to piece in Order, as they naturally follow, even in your Hand.

And here you may observe, That so much of the Paper as gives the Measure of the *Scytale*, will be void of any parts of letters, because it must go once round the Staff before the Edges can meet.

If such an Epistle were writ in Cypher, there's no great Difficulty in joyning the Edges rightly; and if copied from them on a Paper apart, it is liable to the ordinary Rules of decyphering Characters.

¶ 2. Improvement of the Lacedæmonian Scytale.

This may be performed by a Thread first dip't in Alum Water, then rowl'd about a small Rod or Staff, in a Serpentine Revolution, and writ upon.

Bapt. Port.
Mag. nat.
l. de Ziph.
c. 5.

SOLUTION.

And the Sence may also be discovered as before: For the Distance between the first and second Mark, which the Thread receives from the Ink, gives the Measure of the Scytale.

Here 'tis the same thing what end of the Thread you begin at: For if you begin with the last Letter, turn only the Rod, putting that end downwards which was uppermost, and you have it in Order.

¶ 3. Of expressing any secret Intention by a String and Tablet.

“ There is a way of expressing any private Imitation, by drawing a String through the Holes of a little Tablet, or Board: These Holes must be of the same Number with the Letters, unto which, by Compact, they should be applied: The Order of the Strings passing through, may serve to express any Letter, &c.

Sec. and
swift Mes.
P. 44.

SOLUTION.

As for the *Resolution*, it differs nothing from that of Secret Characters: For, if from the Differences in the Order, Strings passing thro' the Holes, you copy it out in supposed Letters or Figures, on a Paper apart, you have it written in an ordinary Cypher; of which already.

¶ 4. *Of expressing any Intention by certain Knots tied upon a String.*

Secr. and
Swift Mes.
ibid.

There is another way to this purpose of Secret Information, by divers Knots tied upon a Thread, according to certain Distances, by which a man may distinctly express any Meaning. The manner of performing it is this: Let there be a square piece of Plate, with the 24 Letters described on the Top of it, at equal Distances, on both the opposite Sides; and let there be little Teeth, on which the Thread may be fastened for its several Returns; and the Knots to be made at the Letters; required, &c.

Sch. Mag.
Cryptog.
p. 19.

Instead of Knots, if the Thread be first dipt in Alum water, they can make little Marks with Ink.

SOLUTION.

To discover any meaning so involved, the Difficulty is to find out the true Breadth of the Plate, or Table: And to effect this,

Take

Take the Exact length of the Thread, which you may reduce to Inches; or, if needful, even to Degrees upon the Line of Chords.

This done, find out all its equal Divisors, or *Aliquot* parts by the Rules formerly delivered.

Now one of these Divisors gives the *breadth* of the Tablet, and which of them it is you may find out by two or three Suppositions at most.

But there may be other ways for discovering the breadth of the Plate, *viz.* Take all the several Distances between the Knots or other marks of Distinction; or between some few of them if the thread be long: Compare the Differences, and you shall soon find out the common Distance between the Letters of their Alphabet, and consequently its breadth.

You may easily perceive when your Suppositions are false, for then there will but few Knots fall in a Perpendicular Line upon the Tablet, whereas when ever you suppose true the Knots expressing the same power will be all in a direct Line, opposite to one another, and then you may Copy it out thus, Begin at the Left-hand, mark all the Letters you find in the first perpendicular Line *A*, and those in the second Line *B*, &c. And at worst you have it in an Ordinary Cypher.

Here you may observe that when you have the true breadth of the Tablet, it will be no Difficulty, tho there be some part of the Thread Mute, or useless in Reading, and only sent to amuse the Discoverer.

This

This may likewise be Decyphered without the breadth of the Tablet, thus:

1. Take all the several Distances between the Knots, and set down two different Characters to expresse every Variation.

2. Copy out upon Paper the whole Thread, according to the Figures you took to expresse it.

Example.

Suppose your first distance should be 16 degrees, and your mark for it *ab*, the second 14 deg. and your mark for it *ac*, the third distance 4 deg. and its mark *ad*, the fourth distance 16 deg. marked as before *ab*, &c. The Writing will stand thus *ab, ac, ad, ab, &c.* Again suppose the first two Knots to expresse *tb*, the fourth distance is likewise *tb*: And wherever these two Letters fall together you shall have the same distance. And so from the frequency, &c. you may find the hidden meaning.

¶ 5. *How to write Secretly upon the Edges of a new Bound Book.*

Mag. Nat.
l. de Ziph.
cap. 5.

Baptista Porta tells us, how we may write our Secret Intentions without suspicion, upon the Edges of a new Bound Book, by drawing back the Leaves, until by degrees the Edges of the Paper fall awry, then write your mind upon it, and nothing shall appear but such small blots, as are usually thrown upon a new Book

Book for Ornament, or fall accidentally by *mistake*, until the leaves of the Book be put in the same Figure again.

SOLUTION.

This needs no more for its discovery, but only to be *suspected*.

¶ 6. Of Writing upon the Edges of Cards, &c.

Baptista Porta relates, the former way of Secret Information may be performed with playing Cards, or upon cut Paper, &c. *Port. ibid.*

As for this way by Writing upon the Edges of Cards, &c. placed in an oblique; or, perhaps, a straight Figure. It appears to have something more of Intricacy in it, than that last mentioned, because the order of placing the Cards, may be confounded when employed upon a Message, for what Card shall be first, second, &c. is by compact agreed upon, however this can only prolong, not frustrate a discovery, for you may take any Card that comes first to Hand, and search into the rest of the Pack, &c. until you get another that will exactly joyn with its broken pieces of Letters, and afterwards you may with great ease find the Cards that must go before and after those that are truly coupled, and this I hope needs no further illustration.

Schol. Steganog. Clas. 12. c. 5.

S E C T. 6.

Of Secrecy in Writing that ariseth from the Ink or other Liquor.

THere are likewise several ways of Secrecy arising from the *Ink*, or the *Liquor* used instead thereof. I shall only name them, since that carries along with it the *means* of *Discovery*.

Port. Mag.
Nat. l. de
Ziph. c. 2.

Thus when I tell you from experience, or a second Hand assurance, That if a Man write with Salt Ammoniack, dissolved in Water, or with the juice of Limons, &c. The Letters will only be visible when held by the Fire, there needs no other Rule for Discovery; but indeed the heat of the Fire only detects, that which in a little time had disclosed it self, for such is the nature of those acid and corroding moistures, that they cannot be long good Secretaries.

Port. ibid.

Letters written with dissolved Alum, &c. are not discernable until the Paper be dipt in Water.

Scht.
Steg.
P. 304.

Letters written with Urine, Goats fat, &c. do not appear until dust be scattered upon them. And 'tis thought that *Attalus* used this piece of Policy, to encourage his Soldiers, before he engaged in Battle with the *Gauls*, his Enemies, Superior in number. The Story goes thus; *Attalus* having appointed a day for Sacrifice, as he

he pull'd out the Intrails of the Beast, described these words upon them, *Regis Victoria*, which he had before writ backwards in his Hand with some Gummy Juice, and as the Intrails were turn'd up and down by the Priest to find out their signification, they gathered so much dust that they appeared legible, which Omen so encouraged his Soldiers that he got the Victory indeed.

To this purpose likewise is that of *Ovid*.

*Tuta quoque est, fallitque oculos è lacte recentè
Littera : Carbonis polline tange, Leges.
Fallit & humiduli quæ fiet acumine Lini,
Et ferret occultas pura Tabella notas.*

There is a Secret way of Writing with the Yolk of a raw Egg, dissolved in Fountain Water. The Letters whereof being fully dry, the Confederates black the whole Paper with Ink, which being likewise dryed, the Ink falls from the Letters first described when scraped gently with a Knife.

*Schor.
Steg.
p. 303.*

Schottus tells us, how we may write Secretly with two several Inks, the method is this, mix a little Common Ink with so much Water, that little or nothing of Blackness appear in it; with this write your Secret intentions upon clean Paper: When it is thoroughly dryed, write an Ordinary Epistle with another Ink, (made of Gun-powder, beat and mixt with Rain water) upon the very Letters you described

p. 301.

scribed before. The last Ink will wash off with a Sponge dipt in Water boyled with Galls, which will also blacken the first.

Mag. Nat.
lib. de
Ziph. c. 1.

Baptista Porta, has another way to this purpose, whereby he affirms, the true Writing will not appear until wet with the juice of Unripe White Grapes.

Schot. Ste.
304.

Letters that are Writ with dissolved Tragacanth and White Lead, will not be visible until the Writing be held between the Sun, a Star, or a Candle, &c. and the Eye.

Schot.
Mag. Uni-
ver. part.
4. l. 1.
p. 13.

Schottus affirms, that a Writing may be so contrived, that the Letters shall not be Legible until the Paper be burnt black: And the written parts of it do still remain White. Which is performed by mixing Vinegar made of Wine, and the white of an Egg, with Quicksilver or white Lead: and Writing therewith, or with Gum or any kind of Salt, &c. Or with such Liquors, as render the Letters described incombustible.

There are some contrivances whereby the Letters appear not but in the dark, but such are not yet practicable in communicating Secret designs, for it being a Material Flame in the *Nocteluca*, that gives light on such parts of the Paper as it adheres to, in a short time it consumes it self. It is only visible in the Dark, because its Light is drowned by any that's greater.

I leave this beaten Road, with a Caution, that most Methods in this kind of Cryptography, may be interlined with some Ordinary
busi-

business in an Epistle, or writ on the backside, or other part of a Letter; for of themselves they have two grand inconveniencies. 1. To be very lyable to suspicion; for who can imagine that a piece of clean Paper, or where there is nothing but one blot, when intercepted should have no occult meaning? And 2. They are very easily discovered when doubted.

And this is all I shall add, upon *Cryptographia* or the Art of *Secret Writing*.

C H A P. II.

Of Secret Information by Signs and Gestures and its Resolution.

TO come now to the second Part of *Secret Information* mentioned, viz. By *Signs and Gestures*; it is called * *Scemæologia*, from *Σῆμα* a Sign, Etimology. and *Λέγω* to read or comprehend.

This way of *Converse* is compleat in its kind without the help either of *Words* or *Letters*, as was observed in the preceding Chapter; and to borrow the words of an Eminent Author. *For this is certain, whatsoever may be distinguished into differences, sufficient for number, to express the variety of notions. (so those differences be perceptible to sense) may be the Convey of the Cogitations from Man to Man.* And a little after, he adds:

L. Bacon
Advanc.
of Learn.
P. 258.

NOTES

NOTES *therefore of things which without the Mediation of Words (or Letters) signify THINGS, are of two Sorts; whereof the first is significant ex CONGRUO, and the other ad PLACITUM. And according to this Partition I shall here treat of them.*

S E C T. I.

Of Information by Signs and Gestures Emblematical.

Gestures and Signs, are said to signify ex Congruo, when there is some natural Analogy or resemblance between the action express'd and thing signified. Of which we shall adduce some Examples.

¶ I. *Of Transitory Signs of Information.*

ibid.

The Noble Author last mentioned speaking of such *Transitory Signs* tells us. *As for Gestures they are, as it were, Transitory Hieroglyphicks. For as Words pronounced vanish, Writings remain; so Hieroglyphicks express'd by Gestures are Transient; but painted, permanent. As when Periander being consulted with, how to preserve a Tyranny, bid the Messenger stand still, and he walking in a Garden, topt all the highest Flowers; for which he cites Herodotus.*

Sec. and
Sw. Mess.
P. III.

*Bishop Wilkins calls it a Parabolical way of discoursing by Gestures, and relates a Story to the same purpose, if not the same. Thrasybulus, be-
ing*

ing consulted (says he) how to maintain a new U-
surped Tyranny, brought the Messenger into the
Fields, and in his sight cut off the higher Ears of
Corn overtopping the rest, bidding him tell his Ma-
ster what he had seen him do.

Others will have this to have been done by
Tarquinius Superbus, seventh and last King of
the *Romans*, when consulted by his Son *Sextus*.
And all do agree that the thing signified, was
the cutting off and keeping low of the Nobility.

Vide inter
alios
Front. de
Stratag.
l. 1. c. 4.

¶ 2. Of Permanent Signs such as Hiero- glyphicks, &c.

Hieroglyphicks, (*i. e.*) (Holy Sculptures, from
Ἱερός Sacred and *Γλύφω* to Carve) are *Natural*
or *Historical*. The use of them (especially of
the first) was very early in the World, and they
would appear to have been a *first born Writing*,
elder than the Elements of Letters.

They were both significant from *Congruity*,
and therefore I have mentioned them here ;
being in effect but a kind of *Emblems*.

Hieroglyphicks were had in great Venera-
tion amongst the *Egyptians*, and were En-
graven upon their Pyramids and Pillars: Their
way was to express any Writing by the Pi-
ctures of such Creatures or Things, as did bear
in them something of Similitude to the thing
signified.

Many Treatises have been writ upon this
Subject, and kindly received by the Learned
World, and I hope it will not be repute, as

beside the purpose, that I have subjoyned a short account of some that are remarkable in this ancient way of expressing things.

A small Collection of ancient Hieroglyphicks.

The representation of a LYON, (according to the differing Postures, as *Passant*, *Couchant*, &c. Or the Pictures of other Creatures placed with him) express severally, *Magnanimity*, *Strength*, *Punishment*, *Power*, *filial Obedience*, *Clemency*, *Religious fear*, &c.

Plin. lib.
8. c. 36.

The *Lyon's Clemency* is commonly noted, *Pliny* tells us, *Leoni tantum ex feris Clementia in supplices, prostratis parcit*. Hence that of *Ovid*.

Corpora magnanimo satis est prostrasse Leoni.

When the *Lyon* is made the Hieroglyphick of fear, they present a *Cock* by him, whose crowing is said to be so formidable, that it puts him to flight.

Plin. ibid.

By the several Postures of an ELEPHANT, they used to express a *King*, *Piety*, *Temperance*, &c. A *King*, because he never bows the *Knee*, &c.

By the RHINOCEROS or UNICORN, a *severe Revenger*, but not easily provoked, &c.

By the BULL, *Continence*, *plenty*, &c.

By the HORSE, *War*, *Empire*, *Lechery*, &c.

By the DOG, a *Priest*, and sometimes a *Flatterer*, &c.

By the STAG or HART; *Fear*, *Lascivie*
Peni-

Penitentia, a Preparation of Arms without the Heart, &c.

By the ANT, *Forefight, indefatigable labour.*

By the HEDGE-HOG, *a Man armed against dangers, the danger of delays, &c.*

By the HOG, *Sensuality, a Sophist, a profane Fellow, Luxury, a Chaos, &c.*

By the GOAT, *a Promptitude of Hearing, a Whore, Lust, &c.* This Beast was likewise the Hieroglyphick, and Sign of Pan, by whom the whole Universe was understood. It is amongst the reasons given, that a Goat should signify Pan, and Pan the World; *Huic (i. e.) Panq, illa in Nymphas procacitas attributa, & nunquam satiata Libido: Mundus siquidem assidue rerum species prognerat, & humore plurimum utitur, materia quippe Generationi in primis & apta & commoda, &c.*

Pier. Hieroglyph.
l. 10. c. 5.

By the SHEEP, *Innocence, or sometimes Foolishness, according to the Proverb Προβάτων ἡβη.* Like a Sheep. Yet of old this Creature was in great esteem, and tho' Hercules carried no spoil but Sheep from his African Victory, he is said to have brought back Golden Apples. So that this was more properly the Hieroglyphick of Riches, fertility, &c.

By the RAM, *War, the envy betwixt Rivals, fierceness, &c.*

By the WOLF, the Egyptians represented, a Man that was fearful at little, for 'tis reported of this voracious Creature, that it flies the noise of a few Stones, when it dares encounter a Man armed cap à pe, this Pierius confirms

Hierog. l.
11. c. 6.

Cic. in Milon. from his Fathers experience. The *Wolf* was likewise the Hieroglyphick of *Apollo*, *Mars*, *Improbitalis Meretriciæ*, &c. hence *Lupa* is sometimes taken for a *Strumpet*, as in that of *Cicero*, *Clodius semper secum Scorta, semper Lupas ducebat*. A Man holding a *Wolf* by the Ears, is the embleme of one involved in difficulties.

By the *TYGER* devouring a *Horse*, *Revenge*, the *Tyger* is also the Hieroglyphick of *Parental affection*, &c.

When they were to express one very Ignorant, they represented him by the Picture of a Man with *ASS's Ears*, which commonly is termed *Aselliceps homo*; and this the Poets feign to be the punishment of *Midás* for his bad judgment. Old *Israel* in his 17 years abroad in *Ægypt*, having seen into the Learning of the *Ægyptians*, couched many of his predictions concerning the future state of his Sons posterity, under *Hieroglyphicks*, and particularly concerning *Issachar*, he says, *Issachar is a strong Ass*, &c. Herein he made use of an Hieroglyphick *Transient*. *Cicero* says concerning one very dull, *Quid nunc te, Asine, literas doceam, non opus est verbis, sed fustibus*, &c.

By the *MULE*, the *Ægyptians* express *Barrenness*, others have signified a *Bastard*, &c. by it.

By the *HARE*, *Vigilance*, because she is said to sleep with her Eyes open; she is also the Hieroglyphick of *Fear*, &c.

I do not find the *FOX* recorded amongst the *Ægyptian* Hieroglyphicks, but amongst the *Greeks*

Greeks and Latines his Picture exprest, *craft and deceit, &c.*

By the VIPER, *Conjugal or filial ingratitude.*

By the EAGLE, *Royal Majesty, &c.*

By the PHOENIX, *the Restauration of any thing that had been laid aside, &c.*

By the HAWK, *God, the Sun, &c.*

By the RAVEN, *one that disinherits his Children.*

By the BEE, *a King, Obedience to Authority, &c.*

By the DOLPHIN, *speed, dispatch, &c.*

By a young STORK *nourishing its Dame, Filial Gratitude.*

By the HEAD, *the Egyptians and others exprest Empire, &c.*

By the BACK, *flight.*

By the SHOULDERS, *strength, &c.*

By the EYES, *God, Justice, a Guardian, &c.*

By the TONGUE, *Mercury, Discipline, &c.*

By the HEART, *Counsel, Life, &c.*

By the HANDS, *Authority, &c.*

By a CIRCLE, *they represented Eternity, &c.*

By a QUADRANGLE, *the Solar year, &c.*

By a CAP, *Liberty.*

By a SHOOE, *the progress of things.*

By a RING, *Trust, Confidence, &c.*

By the ADAMANT, *Fortitude, &c.*

By an EMERALD, *Virginity.*

By the SUN, *God, &c.*

By an ANCHOR, *Deliberation, &c.*

By a HOOK, *Deceit.*

By the HARP, *Concord.*

By a DOLPHIN Painted upon an ANCHOR, *Festina lente, Deliberation in Counsel, and dispatch in Business.*

Lib. de
Isa & Ifid.

Plutarch, relates there was a Temple in *Aegypt*, dedicate to *Minerva*, that had these Pictures Painted in the Front of it, *viz.* An Infant, an Old Man, a Hawk, a Fish, and a Sea-Horse, which is thus interpreted, YOUNG, and OLD, GOD, (signified by the *Hawk*) HATES, (by the *Fish*, their Ordinary way of expressing *Hatred*;) IMPUDENCE (understood by the *Sea-Horse*.) *Young and Old know that God hates Impudence.*

Sch. Mag.
Crypt. c.
2. out of
Clem. A-
lexander.

Idanthura, King of the *Scythians*, in War with *Darius*, sent him a *Mouse*, a *Frog*, a *Bird*, a *Dart*, and a *Plough*; threatening, thereby that unless the *Persians* could hide themselves in the Earth, or Water as *Mice* and *Frogs*, or fly as *Birds*, they should not escape the *Scythian Arrows*, or *Slavery*, &c.

The Sign of *Secrecy* amongst the *Romans*, was by lifting up the Picture of a *Minotaur*, intimating thereby, that the thing communicate, was to be kept as *Secret* as the feigned Habitation of that Monster.

But there are *Historical Emblemes* or *Hieroglyphicks*, which likewise signify *ex Congruo*, *viz.* Such as relate to some common *History*

or *Fable*: As by the Picture of *Prometheus gnaw'd* by a *Vulture*, is understood the *Reward of too much Curiosity*, &c.

For SOLUTION of all such *Riddles*, little can be said: There is a *good Judgment*, a *knowledge of History*, and a *Natural Faculty* (which cannot admit of *Rules of Art*) required in him, that would thus *Secretly* express his mind, or *comprehend* this way of Information so *express*. I have mentioned it here partly, because much of the *Ancient Learning*, especially of the *Agyptians* was veiled under such *mysteries*, and that is no *frivolous subject* for the speculation of a *modern Philosopher*: And withal the *knowledge of Hieroglyphicks and Emblems*, as it *may* be useful to compleat a *Decypherer*, so it is no *great burthen*, but an *Ornament* to any *Gentleman*.

S E C T. 2.

*Of Signs and Gestures significant ad placitum,
or by Compact.*

This way of *Secret Information* by *Signs*, or *Gestures*, *ad libitum*, is capable of as great *Variety*, as the *fancies of Men* shall impose *significations* upon all such *Signs and Actions*, as are capable of *sufficient Differences*. I shall only take notice of what is most *remarkable*, but I hope clear *All*.

¶ 1. Of Characters Real, that have nothing of Emblem in them.

I have already observed, that the old Hieroglyphicks, always had something of *Similitude* to the *thing signified*, and were really a kind of *Emblemes*. But now it is certainly known, that in *China* there are certain *real*, (and not *nominal* Characters) that express *things* and *Notions*, abstracting from any *Natural Analogy*, between the thing *expressed* and *signify'd*. And tho' the several Countries, in those large Territories, be altogether ignorant one of anothers *Language*, yet they entertain an intelligible way of converse by Writing; and there wants not those who have attempted to introduce this Method of an *Universal Correspondence* nearer home, particularly Bishop *Wilkins*, *Schottus*, &c. I should be very unjust if I did not approve of the *design*, but I cannot conceive how this can be well accommodated to our new *Magia Cryptographica*; for it is evident, that there must needs be a vast number of these *dead and dumb Signs invented*, at least *so many as there are radical words*. And this new collection of Signs significant *ad Libitum*, requires too much time and trouble, to adapt it to **SECRET** Information.

And seeing it is not consonant to the Requisites and Design of *Private Intelligence*, I shall even leave it to be improved to better purposes.

Arthrologia, or the Art of *Discoursing* by the joynts or remarkable parts of a Mans Body, (from *ἄρθρον* and *Λέγω*) is observed by most Authors that treat upon *Secret Converse*, and particularly by *Schottus*, who inserts an *Arthrological Alphabet*, in Latin and High Dutch, I have hereunto subjoynd one in English, *viz.*

Steg. Class.
12. c. 10.
§. 1, 2.

A	The Ear.
B	The Chin.
C	The Hair.
D	The Teeth.
E	The right Eye.
F	The Fore-Head.
G	The Throat.
H	The Shoulder.
I	The Fore-Finger.
K	The Middle-Finger.
L	The Lip.
M	The left Hand.
N	The Nose.
O	The Knee.
P	The Breast.
Q	Any two Fingers stretched.
R	Three Fingers stretched.
S	Four Fingers stretched.
T	The Tongue.
V	The right Eye-Brow.
W	The left Eye-Brow.
X	The left Eye.
Y	For Y, the mark of I.
Z	For Z, the mark of C.

The

The Practice of this would appear to be as old as *Ovid*, who was not wanting in such Observations.

*Ovid de
Art. Ama.*

Verba supercilus sine voce loquentia dicam.

Verba leges digitis, verbaque vultus habet.

And again:

Sæpetacens vocem, verbaque vultus habet.

I have known Children at School use it, and I am sure they must be still Children, or else something indued with a less degree of Knowledge, that practise it in Company; and out of Company it is good for little, because so small an Object as a particular Joint, &c. is not perceptible at any considerable distance.

SOLUTION.

But however if you would *Solve* this, go aside, and mark every particular Action by a Distinct Character, and it is lyable (when so noted down) to the common Rules of Decyphering.

¶ 3. Of Dactylogy.

Dactylogia (ἀπὸ τῆς Δεκτυλῆς, or from Δεκτυλῆς, and Λέγω.) Is an Art of discoursing by the Fingers, and noted for its Antiquity; the An-

Ancients used to express any number under 100 by the Fingers of the left Hand, and those numbers above 100, and under 9000, by the Fingers of the right Hand. * *Pierius* gives us an account of their particular ways of Reckoning from 1, or *Unity* to 9000. And hence *Furvenal*.

Hierog. l.
37. c. 1.

* Sat. 10.
de *Pylio*.

*Rex Pylius, magno si quicquam credis Homero,
Exemplum vitæ fuit à cernice secundæ,
Felix nimirum, qui tot per sæcula vitam
Distulit, atque suos jam dextra computat annos.*

Now these Postures may serve to express Letters and Words, as well as Figures or Numbers. And *Schottus* is not wanting in an Alphabet this way too, e.g.

A	Express by	The little Finger of the left Hand.
B		The little and Ring-Finger.
C		The little, Ring, and middle Finger.
D		The little, Ring, middle, and fore-Finger.
E		All the five Fingers.
F		All the Fingers of the left Hand, and little Finger of the right.
G		All the Fingers of the left Hand, and the little and Ring-Finger of the right.
H		All the Fingers of the left, and the little, Ring and middle Finger of the right Hand.
I		All the Fingers of the left Hand, and

		and of the right except the Thumb.
L	Exprefst by	All the Fingers of both Hands.
M		The Thumb of the left, and little Finger of the right Hand.
N		The Thumb, the little and Ring Finger of the left Hand.
O		The Thumb and three laft Fingers of the left Hand.
P		The right Thumb.
Q		The right and left Thumbs.
R		The left Thumb, and the Thumb and fore-Finger of the right Hand.
S		The left Thumb, and two firft Fingers of the right Hand.
T		The left Thumb, and three firft Fingers of the right Hand.
V		The left Thumb, and all the Fingers of the right Hand.

The Letters wanting may be fupplied as before.

This falls under the former Obfervation for SOLUTION.

¶ 4. *Of feveral ways of Secret Information by the fpecies of Sight or Sound.*

Amongft the Secret Signs for Information *ad Placitum*, that by *Smoak* in the day time, and *Fire* in the night, is very remarkable, and fo Ancient, that a great many Authors affirm, that this was the Sign to unlock the Wooden Horfe

Horſe at the Siege of *Troy*; eſpecially *Diodorus Siculus*, I cannot now call to mind the particular Citations.

The *Turks* of *Chios* in the Iſland of *Lesbos* in *Aſia Minor*, give notice from their ſmall Watch Towers along the Coaſt, of ſuch Veſſels as they ſee approaching, &c.

There are latter Inventions of Secrecy by *Torches*, &c. much inſiſted on, *viz.*

The Letters of the Alphabet may be contrived in two Tables, each of the Confederates to have one. *e. g.*

	1	2	3	4	5
1	A	F	M	R	Y
2	B	G	N	S	Z.
3	C	H	O	T	
4	D	I	P	U	
5	E	L	Q	X	

When they communicate their Intentions by this Table, there muſt be ten Torches, five on the right Hand, and five on the left. The ſign of Advertiſement being given and returned, they firſt liſt up as many Torches, as is the number of Colums, wherein the Letter to be expreſt, ſtands; then ſo many to the left as is the number of the Line. *v. g.* Suppoſe the Confederates would expreſs the Word *VENIEMUS*: Firſt the Informer holds up 4 Torches to the right Hand, to ſignify, that the Letter

to

to be exprest, *viz.* (U) is in the 4th Column; then other 4 Torches to the left Hand, to show that it is in the 4th Line: Next he lifts up one to the right Hand, and 5 to the left, intimating the Letter exprest is in the 1st Column, and 5th in order, *viz.* E and so of the rest as *Wekerus* hath it.

Weck. de
Secret. l.
14. cap. 1.

Now this difficulty is easily SOLVED, for if at the first up-lifting of the Torches, you mark down 4, the number of Torches, and at the next motion 4, at the third 1, and at the fourth 5, &c. You shall have it in Cypher at last, thus:

4415322415314442.

Which may be RESOLVED by the Rules given in the first Chapter. Here you see that two motions go always to the composition of one Letter, thus,

44, 15, 22, 24, 15, 31, 44, 42,
V E N I E M U S.

Be sure to observe every different Sign by a particular mark, for if you lose one motion, you may render your labour useles, but if you take all, you shall not only have the *Secret*, in *Character*; but you will find out by the marks of Advertisement when any word ends.

Schottus proposes a way how this may be performed with one Torch only. *v. g.* One elevation to exprest A, 2, to signify B, 3, C, 4, D, &c.

But this contains no new Difficulty in its
SO.

SOLUTION, and therefore I pass it over.

There may be other Signs for Secret Information, *viz.* at Sea by *Flags* of different Colours, as *White, Red, Blēw, &c.*

By a *Trumpet, a Drum, a Bell, &c.* in reference to the Ear. As also by *Musical Notes, &c.*

The order of managing either may be understood by the *Tri-literary* or *Bi-literary* Alphabets. Chap. 1. Sect. 3.

Other Observations than what you have already for *DECYPHERING* are needless; only in marking the particular differences as to the species of *Sound* and sometimes of *Sight*, you may write down the first Letter of the thing used for Information, as *B.* for *Bell*, *T.* for *Trumpet*, *C.* for *Cannon*, *R.* for *Red*, *W.* for *White, &c.*

CH A P. III.

of *CRYPTOLOGY*, or that *SECRECY*
consisting in *SPEECH.*

I Have already observed, that the Method of Treating of things here, is only in order for the Readers ease; for if I had pursued this Design from the order of *Nature*, or *Time*, there must have been several
 re-

returns; but as things now stand, there is a clear Progress (I hope) without any thing of impediment in the way; and the further you go, you have the clearer prospect of what is before you.

Etymology.

This Art is termed *Cryptologia*, from *κρυπ-τω*, and *Λέγω*, *Secretly to communicate our Thoughts by SPEECH*. The way of *Communicating* our *Thoughts*, is reckoned threefold; or, there are three means of *Converse*, viz. By **SPEAKING**, by **WRITING**, or by **SIGNS** and **GESTURES**. *Words* are, or ought to be the *Picture* of *Conceptions*, as *Letters* are the *Images* of *Words*, the *Tongue speaks to the Ear*, but the *Gesture to the Eye*, &c. As King **JAMES** elegantly express it.

To each of those three ways of discourse, human Policy hath added, a deceit, viz. **CRYPTOLOGY**, **CRYPTOGRAPHY**, and **SÆMÆOLOGY** by *Compact*, the two last are already considered.

And to return to the *first*, the common use of Language is twofold.

1. That others may discover their Intentions to us.

And 2. That we may unfold ours to them, so that the Tongue was design'd for an Interpreter of the mind, but that it is often very unfaithful to its trust, is not to be doubted much less deny'd. It is storied concerning the *French*, that they neither *Write* as they *Speak*, nor *Speak* as they *Think*. And 'tis pity that they are not singular especially in the last part. But this

mo-

Moral Defect of Veracity lies at present out of my Road, for a Man may truly (tho *Cryptically*) express bad Conceptions, and 'tis the Discovery of that Art is now my Province; yet it borders so near upon the former, (while both have one general aim to DECEIVE) that I could not altogether pass it.

Cryptology or the *Secrecy in Speaking* may consist, 1. In the *Matter*: 2. In the *Words*.

S E C T. I.

Of Secrecy in Speech in respect of the matter.

C*Ryptology* is said to consist in the MATTER, when the thing we would utter is concealed under the expression of some other matter, that is not of obvious concept, so Bishop Wilkins hath it.

Now as to this particular kind of Secrecy, by which one thing is said and another understood, the Words in themselves, have some Relation to the thing signified by them, either *Natural* or by *Compact*.

¶ I. Of *Cryptology*, wherein there is some Analogy between the thing said, and the matter signified.

This differs little or nothing from *Permanent*, or *Transient Hieroglyphicks*, except only that by the last, the Secret Intention is communicate by some Actions; as in that of *Tarquinius Superbus*.

For if he had told his Son, those Higher Ears of Corn, (or as *Frontinus* relates it Poppy) that overtopped the rest must be Cropt, the Words were capable of the same Interpretation, as when he actually cut them off himself, &c.

Vid. Sec.
and Swift
Mef. p. 19.

Macrob. in
Som. Scip.
l. 1. c. 2.

To this Head are reducible, *Metaphors, Allegories, Parables, Fables*, and all that *Enigmatical Learning* the *Agyptians*, and others were so much addicted to; *Quia sciunt inimicam esse Naturæ apertam, nudamque expositionem sui, quæ sicut vulgaribus Hominum sensibus, intellectum sui vario rerum tegmine, operimentoque subtrahit, ita à Prudentibus Arcana sua voluit per fabulosa tractari.*

It is requisite in this Art to make choice of such a Subject, as may bear in it some proper Resemblance to the business in Hand, and to make the several parts of the Similitude fitly answer the several Passages of greatest moment. And this requiring a *Natural Faculty*, it is clear, that such ways of Secret Information cannot be accommodated to *all Persons*, and consequently not to *all Exigences*. Besides that it cannot be safely adventured on, before a Man of sense, who may trace the meaning through the several parts of the Similitude, &c.

But *Allegories, &c.* have in other things a more genuine use, being observed to excite the Fancy upon an Argument, and often to bring the Adversary over unawares to an acknowledgment, while plain Arguments and Moral precepts are more flat in their Operation. I remember *Knolls*, in his History of the *Turks*, Re-
lates,

lates, That *Bajazet*, one of their most fiery Tyrants, having resolved to destroy a great many of his Chief Officers, about the time when *Tamerlane* was on his March to invade him; (at least when *Tamerlane's* Designs were known at the *Ottoman Court*.) *Alis Bassa*, the Chief Minister at the *Port*, dared not open his Mouth for their Reprieve: And if he had, he had undergone their Sentence. And tho' thus forced to lay aside as weighty Arguments for their Lives as any Circumstances of *Reason* or *State* could afford: The Tyrant's unruly Passion was overcome by a kind of *Metaphor* out of his Jester's Mouth; who appearing before *Bajazet* with a great Drum, bid him, Cause hang those Villains presently that had offended him: For (says he) you shall have no Use for them: You and I will fright that Numerous Army of *Tartars* that are approaching: For I can beat a terrible March upon this Drum, and you may come up with a dreadful Countenance, and the day's your own.

When *Cyrus* had put the *Medes* to Flight, their Mothers and Wives upbraided them in their Flight by a homely *Metaphor*, related thus by *Justin*. *Matres & Uxores in Prælium contra* *Justin. 1. 1.*
Cyrum fugientes, occurrunt; sublata veste, obscæna corporis ostendant, rogantes num in uteros Matrum vel Uxorum velint refugere. But this being Foreign to my Design, I leave it.

§ 2. Of that Secrecy in SPEECH wherein the Relation between the Words Express and understood, is merely by Compact.

That there may be Contrivance of Secrecy, wherein the Relation betwixt the thing *express*, and the thing *signified*, is by Compact agreed upon, is beyond Controversie. Instances of this Nature have been but too frequent.

The Powers, or usual Signification of Words, may be altered as well as that of Letters: And by this Fallacy, the Sence of any Writing or Discourse as much confounded; yet you must suppose that this way can only cloak some Persons, or things, not a whole Design, if rendered practicable. He that reads *Argile's* long Letter decyphered (as in the *Discoveries in Scotland*) may easily perceive in the several Steps, the Lines of an intended Rebellion, tho' without all doubt, he at first, when he framed his Alphabet of Words, provided as much against a Discovery of the Sence of his Epistles, as could be, when adapted to a current Correspondence: But Humane Policy cannot foresee all future Contingencies: And tho' here we chiefly mention this in Reference to *Speech*, yet you see it hath been committed to *Writing*.

And having mentioned *Argile's* Long Letter, I shall insist on some of the *PARTICULARS*, contained therein. He is more than short-sighted, nay, more than half blind, that does
not

not see in it a Design of *raising Money*; and that this Money is to be employed upon *Men and Arms*, against the *Forces*; and consequently the *Established Government* of BRAND. What is to be understood by BRAND, *viz.* Scotland, the occurring Circumstances do sufficiently evince,

1. By the Number of *Standing Forces* there, *viz.* 1200 Horse and Dragoons, and 2000 Foot.

2. From the *Station*, these Standing Forces would probably take up, *viz.* *Stirling*.

3. From the *Aid* of the Standing Forces, *viz.* a *Militia* of 20000 Foot, and 2000 Horse, and the *Heretors*, &c. to the Number of 50000.

Thus having by the concurring *Circumstances* discovered BRAND, to signify SCOTLAND, That might help to understand some other of his Canting Terms, *E. g.* *And tho we had at first the greatest Success imaginable, yet it is impossible but some (of the Forces) will keep together, and get some Concurrence and Assistance, not only in Brand, but from Birch and Ireland, &c.* From this one Expression, it is easily conceivable, that by BIRCH, is understood ENGLAND.

Next, As to BROWNE, it must signify *True Dissenting Protestants*, from the following words. *How can BROWNE employ so much Money, and so many Horse better for THEIR own Interest, tho the Protestant Interest were not concerned, &c.*

And these, at present, shall be all the Animadversions I will make to discover the Fallacy

Note,
THEIR
denotes
the plural
Number.

cy of this Method, equally applicable in *Speech*, or an *Epistle*.

¶ 3. Of *Cryptology*, without any *Alteration* in the *Words*.

This is performed by using *Words* in *Speech*, that are *insignificant* as to the *Confederates*, yet have a natural *Cohesion* amongst themselves, and guard that which is really secret from *Suspicion*, the *Pane* of *Secret Speaking*; and that either in an *Oration*, or even in common *Discourse*, e. g.

Suppose the words immediately following any *animate Being* mentioned, should be only significant, and the *Words* that follow such *Pronouns*, &c. as relate to *Animate Beings*.

Steg. p.
320, 321.

Schottus proposes the Method, and does demonstrate it by the following Example.

Let the *Speaker's Secret Intention* be to admonish the *Confederates* to make their *Escape*, and the *Words* these;

Sumus in periculo; cavete.

The *Discourse* might run thus:

In manu DEI sumus ubicunque versamur. Hanc ob Causam NOS in rebus adversis nequaquam pusillanimus esse debemus; quoniam DEUS periculo omni eripere potest. Ergo AUDITORES cavete, peccata, & curam rerum vestrarum permittite DEO, &c.

Here the words which express *Animate Beings*, are *DEI*, *NOS*, *DEUS*, *AUDITORES*. And the words immediately following, *Sumus in periculo; cavete.*

I have

I have hereunto subjoyn'd an Example in English. Suppose the words to be communicated, were,

Fly, you are discovered.

The Discourse may be to this Effect, Let every MAN *fly* to his Duty. GENTLEMEN, *you* now see what PEOPLE *are*, and may do in their Madness: But WE *discovered* long since their Folly, &c.

The Words that direct to the Meaning, are, MAN, GENTLEMEN, PEOPLE, WE. And this, I hope, is sufficient for Explanation.

1. I know this Method is sufficiently capable of Variation; for *Terminations* of Words (instead of *Animate Beings*) may be the Index.

2. *Words* may (by private Agreement) be remarkable from their *place*, as the *first*, *fifth*, *tenth*, *fifteenth*, &c. to be only significant. But this (except in a premeditated Discourse, which requires time to frame it) is hardly practicable.

3. The Words that express the private Intimation, may be distinguished by some secret Sign, &c. But this, if observed, will give ground for Suspicion; and being once suspected, it is not safe; and needs no other Rule but Attention for to find out the hidden Meaning.

For RESOLVING the other ways mentioned in this *Paragraph*, the most sure way were to take the whole Discourse in Short hand; or if you can remember it *verbatim*, it will save

so much trouble: And afterwards having writ it out, first, joyn the Words together that go before or after *Animate Beings*, and Relatives that belong to *such*: And if that will not resolve the Riddle, joyn other Words that follow the particular Terminations, &c.

However, I believe, there might be as many found to unriddle all such politick Mysteries without any other Trouble than that of Attention, as they are that can handsomly frame them upon any occasion.

S E C T. 2.

Of Cryptology, Or that secrecy in Speech which consists in the WORDS.

¶ I. *Of Invented Words.*

That Secrecy in Speech, by inventing new Words, is mentioned in the *Secret and Swift Messenger*: And to this the Author refers the *Canting of Beggars, Charms of Witchés and Magicians, &c.* And I must acknowledge my Ignorance in both.

Secr. and
Swift Mes.
p. 21.

But if by *Inventing of new words* he understands a new Language, it would require too much Time and Trouble to invent and learn it (as is observed in another place:) And withal, the Confederates should to better purpose practise upon some of the *Eastern Languages, &c.* already invented to their Hand, and per-
haps

haps fully as intricate to the Company they intend to impose upon: Nay, why might they not whisper; or speak *apart* in their Mother Tongue? *Either* of which are as little off the road of common Civility, as the new Language, and *all* are alike lyable to Suspicion.

If by *Inventing new words*, he means some few that may be serviceable upon Occasion, its difficulties are consider'd in the *second Paragraph* of the *preceding Section*, &c.

¶ 2. *Of the Alteration of any known Language in Speech.*

The Author last mentioned, Proposes four ways for altering the Words of a known Language. Sec. and
swift Met.
p. 23, &c.

1. By *Inversion*, and that either of *Letters* as *Mitto tibi M E T U L A S*, &c. (*i. e.*) *S A L U T E M*; or of the *Syllables*, as *Tishos estad, veca biti*, (*i. e.*) *Hostis adest, cave tibi*, &c.

2. By *Transmutation* of *Letters* as in CHAPTER I.

3. By *contracting* some *Words* in *Pronunciation*, according to the Common Abbreviations used in Writing as *Aa* for *Anima*, *H.o* for *Homo*, *Raalis* for *Rationalis*, *Aal* for *Animal*, &c.

4. By *Augmenting Words*, as in doubling the *Vowels*, &c. *E. G. Ougour Plogot*, (*i. e.*) *Our Plot*, &c.

Most of which are so Childish that perhaps it is too much to have mentioned them; and I am sure no Body would thank me for my Pains to insist upon them.

¶ 3. Of Secret Conveyance of Words.

Steganograph.

P. 327,
328, &c.

Schottus, mentions several ways of Secret speaking to this purpose, and to be performed without Suspicion, even tho there be several People in Company; in most of which the Requisites are enough of themselves to create a Jealousie.

One is, *Si eligantur Ambulacra*, &c. There must be a long Gallery with Arches, &c. Where if one apply his Mouth, and the other his Ear, to the opposite sides of the Arch, he shall distinctly hear the least whisper, the other utters; and thus he would have them behave, for fear of Suspicion.

Another Requisite is a long Trunk or Pipe to convey the Words, &c.

In short, all he mentions have more of Ingenuity in the Contrivance, than use as to the Communicating any Secret concern in Agitation.

Walch-
Fab. 9.

There is an Experiment for Secret Conveyance of *Words*, insisted on by some, thus, Let there be a Trunk or Pipe contriv'd, and one of the ends of it closed up, so as no Air can have the least entrance or egress: At the other end which is to be the only Orifice; they are to convey in, what Words or Sentence they intend

to

to communicate : And these being instantly secur'd in the Pipe, from taking harm by Air, they Fanfy the Articulate Words by this means are entirely preserv'd in good Order, and may be carry'd hundreds of Miles ; until the Confederate open the end of the Trunk agreed on, and receive the Message. And this puts me in Mind of that very common and known Fable of a violent Frost in a cold Climate, that arrested Words in the Air, which were never heard of again until a Thaw came, that loos'd them very orderly from their *un-natural* or rather *supernatural* Captivity.

Bishop *Wilkins* himself condemns the folly of proposing, and credulity of believing such Propositions for Secret Information: Peing, the *Species of sound, are multiplyed in the Air, by a kind of Continuation, and Efflux from the first ORIGINAL, as the Species of Light from a Luminous Body : either of which once separated from their CAUSES do presently vanish, &c.*

But tho no Engine can be framed to *preserve* the Voice ; yet there are several Improvements in *directing* it, as by *speaking Trumpets*. The Emperor *Severus* fortin'd the North of *England*, against the Incurfions of the *Scots* and *Picts*, with a Wall extending from *Carlisle* to the River *Tine*, the Wall had Towers at every mile's-end, and betwixt every Tower, there were small Watch Houses at a convenient distance one from another, and between these Watch-Houses a Trunk or Pipe of Brass pass'd in the Curtains of the Wall, so that in a short time,
all

all those in the Towers had notice of any approaching Enemy, as *Cambden* relates ; but this was rather a Contrivance for *Swift* than *Secret Intelligence*.

I know there have been *speaking Statues*, and for a good token, *Albertus Magnus* having spent thirty years in framing one to express *Articulate* sounds, *Aquinas* designedly broke it, and in a Minute ruined the Labor of so much time. But I cannot see how this can contribute much to the Design of *Secret Information* : And sure it is nothing of kin to *Walchius's* Fable.

Weckerus de Secretis, Lib. 14. cap. 1. proposes several ways of *Secrecy in Speech*, but anticipates any other Man's Observations by condemning the Methods himself, except what we have considered in other places.

Upon the whole; *Cryptology* where it is liable to Suspicion (as it can hardly be otherways) is impertinent, and a publick abuse upon those present, if the Confederates be at *Liberty*: Nay, *Schottus* himself censures it, *Modus, quo aliqui utuntur, spectantibus alijs, insusurrando submissee in aures, quod audiri ab adstantibus nolunt, rusticus est, & indecorus, ideoque fugiendus*: and subjoins the following story, *Johannes Basiliades, Magnus Muscoviæ Dux, gladium stringi jubebat in ejusmodi Collocutores in præsentia sua.* And further adds, *Idem judicium esto, de modo, quo aliqui, nutibus, gestibus, &c. sibi quidpiam mutuo indicare nituntur.*

Steganog.
p. 328.

And when one or more of the Confidents are *confn'd*, and under the constant Eye of Keepers (who will not admit of ambiguous or unknown Language, &c.) it is *useless*. I proceed next to.

CHAP. IV.

Of Secret Means for conveying Written Messages.

THIS part of Secret Correspondence I call Cryptogrammatophoria from κρύπτω, γράμμα and φέρω. The Practice of it is of an old standing; and I believe it was from the Inconveniencies that *Secret Conveyances* alone were liable to, the other Methods of Secret Information in the particular ways of Discourse mentioned, were first invented.

In this Chapter, I shall not tye my self up to any Method, but only give you a mixed account of those Secret ways of *Conveying Messages*, I have met with in any Author of Note, and recommend *Circumspection*, as the only means of Discovery; for the Subject will admit of no other *SOLUTION*.

Justin. l. 1.
 49c. *Harpagus* the *Mede*, when he would exhort *Cyrus* to a Rebellion against *Astyages* the King, his Grandfather; conveyed, his Letters to that intent, in the Belly of a Hare, and sent them by a Servant in disguise of a Huntsman, who got an unsuspected passage to *Cyrus*: And by this Treason was the Empire translated to the *Persians*, till then an obscure People. This fell out about the year of the World 3400.

Cluv. Epi-
 tom p. 56.

The like Stratagem is related of *Demetrius*, Son of *Antigonus*, one of the Successors of *Alexander* the Great.

Lib. de Zi-
 ph. c. 6.
 Steg. p.
 299.

Epistles have been often delivered to Persons in their Food, thus *Polycretes* deceived *Diognetus* the *Phaenician* General, having given notice of their Confusion upon a Plate of Lead, and sent it in a Tart, and by this Stratagem *Diognetus's* Army was cut to pieces by a despised Enemy. This is related by *Baptista Porta*, & *Schottus*, &c.

Steg. p.
 297.

Epistles may be concealed into unbaked Leaven: And afterwards that part which contained the Message, cut off, and given to a trusty Servant in disguise of a Beggar to be conveyed to the Confederate: And to this purpose, *Schottus* relates, That in the late War betwixt the *Swedes* and *Poles*, a *Polish* Souldier employ'd on such a Message, having past most of the *Swedish* Troops, and Garrisons with private Instructions, which he had undertaken to carry for *Dantzick*, and concealed in a Loaf of Bread, was at last robb'd of his Provision by a hungry Souldier belonging to the *Swedes*: And
 by

by this means the Secret was accidentally disclosed.

The same Author has another late passage concerning a Person of Quality, Prisoner in the *Netherlands*. This Gentleman's Friend enclosed an Epistle into a very fair Pear, which he sent him with other Fruit, not doubting but he would chuse it first, and so receive therein the Message: But the event answered not the Expectation, for that Pear was left untouch'd, and with the private Epistle, fell into the Keeper's Hands, for whom it was least designed.

Steg. p.
298.

He likewise proposes two several ways of conveying an Epistle into an Egg.

As also, *Baptista Porta*, *Weckerus*, &c. have a great many Methods of Imprinting Secret Intentions upon an EGG, without any Suspicion. Such as,

1. How the Impression will not be visible until held between a Light and the Eye.

2. How the Letters shall only appear upon the White of the Egg when boil'd.

3. How Letters describ'd upon the Shell of an Egg, shall not be perceived, but in Water.

4. How nothing shall appear until the Egg be held by the Fire. And

5. How the Writing shall continue invisible until Dust be scattered upon the Egg.

Porta, *Schettus* and others likewise tell us, That if we Write with Gum-Arabick, or Tragacanth, dissolv'd in Fountain Water, upon

Lib. de Zi-
ph. c. 3.
&c.

Cry-

Crystal or Glas, the Writing will not appear until Dust be thrown upon it also, and *Porta* adds that this being a Transparent Body, cannot be lyable to Suspicion, tho they themselves render it suspected by publishing it.

Epistles have been sometimes concealed in Cloths, which practice is noted by *Ovid*, de *Art. Amandi*.

*Conscia cum possit scriptas portare tabellas,
Quas tegat in tepido fascia lata sinis,
Cum possit solea chartas celare ligatas,
Et vincto blandas sub pede ferre notas.*

Steganog. *Schottus* cites several Authors who give an account, of Secret Epistles hid betwixt the Soles of a Man's Shoes, and intercepted, the Writing is generally cut out upon Lead.

Epistles have been likewise concealed in a Woman's Hair.

Machiav. Some have Writ their Secret Intentions upon the inside of the Scabbard of a Sword ; as also upon Swords and other Armour.

We hear of an Epistle wrapt up in a Wax Candle; and sent to the Confederate with this verbal Message, *That it would light him to his Business.*

Swift Mes. *Baptista Porta*, *Lib. de Ziph.* Chap. 6. proposes a way to conceal an Epistle within an Artificial Stone.

There is likewise a way of Writing upon a *Stone*, with Goat's Fat, which Letters will not be visible till dipt in Vinegar.

Letters may be describ'd upon a Tablet of Wood, a Napkin, or Hankerchief; which will not be legible until Dust be first thrown upon them.

Schottus mentions an Ingenious way of concealing an Epistle in a Glass Bottle, or Viol, *viz.* by taking the Bladder of a Hog or Calf, and having blown it to the utmost extent, when it is thoroughly dryed, they Write on it their Secret Intentions; afterwards pressing out the Air, they convey it into a Viol or Bottle, leaving the Neck without, by which they extend it a second time, when in the Viol, with Air: And filling it with Oyl, they seal all up, and send it to the Confederate; the Oyl will appear in the Bottle, but not the Writing. *Note*, the Viol must be prepared with some Glutinous Moisture before hand, otherwise the Bladder should not continue extended to receive the Oyl into it.

Steg.
p. 289.

This Author proposes another way of concealing an *Epistle*, in the Wax that is used to Seal *One*, the Method is this; 1. They write an Epistle of any ordinary concern. 2. Having contrived their Secret Intention in as few words as is possible, they write it down upon a small piece of thin Paper. Then 3. having folded it up, they dip it in Oyl, that the Wax may not adhere to it. And lastly conceal it within the Wax of the other Letter.

L

Note

Note. *The Seal must be very large, otherways the Secret Writing cannot be contained within its impresson; or in case the Letter were intercepted, the Secrecy might be detected in breaking it open.*

Demaratus, King of Sparta, being dethroned upon suspicion of *Bastardy*, banished his Native Country, and received into the *Persian* Court, betrayed the Counsels of *Xerxes*, to his Country-men in this manner, *He cut out the Secret Information in a Tablet of Wood, and then covered the Letters with Wax, and sent it by one of his Servants unto the Magistrates of Lacedæmon, who knew not at first what to make of it; they could see nothing written, and yet could not imagine, but that it should import something of moment. But at last the Kings Sister having accidentally discovered the Writing under the Wax, and the Writing the Intentions of Xerxes, to make War upon Greece; the Grecians were so well provided for the War, That they gave a defeat to an Army of 3235220 Men, according to the Historian's Computation.*

Justin. l. 1
Cluv. p.
64. Flor.
Hist. Aro.
7, &c.

Justin. l.
21.

Hamilcar feigning himself to be banished by the *Carthaginians*, was kindly received by *Alexander the Great*, and in the same manner gave notice of his Intentions.

I meet with several Improvements of this Stratagem.

As 1. There may be a Tablet made of Poplar, or some other soft Timber, and the Confederates having provided a set of Iron Letters, they imprint upon it to a considerable depth,
what

what they intend to communicate; then they cut down the Timber until nothing of the former Impression appear, and having smoothed it, they may perhaps paint it over to prevent suspicion, and send it whither they will. The way taken by the Confident (to whom it is directed) to find out the *bidden* sense; is by steeping it for some time in Water, until those parts of the Tablet that were contracted by the pressure swell above the rest, and discover the former Impressions.

Bapt. Por
ta. Li. de
Ziph. c. 5.

Note. *The Timber may be contrived (after the Letters are imprinted) into Timber Vessels, &c.*

2. This Author teaches, not only how to write Secretly upon Timber, but also by what means a Man may conceal a Written Epistle within Timber, and instanceth that experiment of *Theophrastus*, by incision into a growing Tree, first carefully taking off the Bark, then putting the Epistle into the vacuity, and lastly by binding up the Bark again in its old place, until nature sufficiently conceal the Secret. But even against the *Possibility* of this there are considerable doubts, which I shall not stay to propose: Yet granting a *Possibility*, this way is inconsistent with dispatch, the life of Secret Designs.

3. *Porta* affirms, this might more commodiously be performed in dry Timber, e.g. in a *Fir* Tree, by cutting the Bark, and making a vacuity (as before;) for the Bark may be affixt to its former place by a kind of Glew, which resembles the natural *Rozin* of that kind of Timber:

Baker's
Chron. of
the Kings
of Eng-
land, p.
 492.
Schot.
Steganog.
Clafs. 12.
 c. 2.

4. In *Baker's Chronicle*, we have an account of one *Frost* who carried Letters in a hollow Staff, between the Rebels of both Kingdoms, in the beginning of the late troubles.

Schottus gives several Historical Instances to this effect; and particularly relates from his own knowledge, that very lately some Travelers had been apprehended in *Moravia*, and Treasonable Letters found in their Canes.

5. The Learned Author of the *Secret and Swift Messenger*, affirms, That some have used to write upon leaves of Trees, and with these to cover Ulcers, &c. Which is likewise observed by *Schottus*.

6. And this brings to my remembrance a Stratagem, which I had from a very good Hand. A Gentleman being employed to carry Letters of very great moment, with all privacy; he affixt them by a Plaister to some Fleishy part of his Body, which afterwards he caused to be Artificially painted over in the Natural colour of his Skin.

Letters have been sometimes inscribed upon the Messengers Fleish, a Device not unknown in *Ovid's* time.

Caverit hoc custos, pro chartâ consciâ tergum
Præbeat, inque suo corpore verba ferat.

And long before *Ovid's* time, *viz.* about the year of the World 3539, *Histiæus*, the Tyrant of *Miltus*, chusing one of his Servants that was troubled with sore Eyes, pretended that
 for

for his recovery, his Hair must be shaved and his Head scarify'd, in performing which, he took occasion to imprint upon his Servant's Head his Secret Intentions, viz. about revolting from the *Persian* Government; and keeping him at home until his Hair was grown; he afterwards sent him to *Aristagoras* the *Persian* General then in *Greece*, to whom his design was to be communicate, under pretence of his Servant's perfect recovery, and (says he)

“ When you come to *Aristagoras*, tell him,
 “ That I desire he may Shave you with his own
 “ Hands as I have done, for it is the only
 “ means to restore you, &c. The Message went safe, for the Messengers Head faithfully delivered the Secret that never troubled his Brain, but in the end *Histiæus* lost his own Head, the due reward of his Treachery. This is related by *Herodotus*, and out of him in *Aulus Gellius*. See also *Flosc. Histor. Areol. 7. &c.*

Aul. Gell.
 Noct. Att.
 lib. 17.c.9.

As in this, so in most of the other Contrivances mentioned, the Messenger may be altogether Ignorant of the Message he carries; as in a Bottle which he knows to contain nothing but Oyl; or Secret Intimations upon, or within a Stone or Timber, &c.

But as to this way of Writing upon the Messenger's Skin, *Porta* promises great Security, his Words are these: *Sed nos possumus Epistolas mittere, & scribere loco etiam, ut non possit ab aliis, nisi iis quibus Literæ destinantur, intelligi; & qui eas fert ad quamcumque distantiam; etiamsi in via comprehensus fuerit, & interrogatus per tormen-*

Mag. Nat.
 Lib. 16.
 Cap. 18.

ta, nil possit fateri, quia nil ei penitus constat, & Epistola semper manebit Occulta. Nec tempus aut itineris labor Characteres abolebit, quia nec à pluvius, nec ab ipso sudore aboleri possunt; unde nec refert si Lator per mare & flumina transeat, &c.

In short, *Porta* endeavours to prove by the best Arguments (which must necessarily in this Case proceed from Experience) that Letters may be imprinted upon the Messenger's Back, &c. which shall be indelible by Sweat, Water, or any Moisture; until Dust, or other things applicable to Paper, be made use of.

See the last Sect. of the first Chap.

He likewise proposes a way, how the Letters writ upon the Messenger's Skin, may in a few days vanish: And treats of several Soporiferous Medicaments, to throw him into a deep sleep, or insensibility, during the Operation: The whole may be lyable to several doubts, but it lies out of my road to examine them.

Messengers *Conscious* of their carrying Secret Messages have Metamorphos'd themselves in very differing shapes upon Occasion.

Front. de de stræg. l. 3. c. 13.

Lucullus the Roman Prætor coming to the Relief of the *Cyziceni* (besieged by the Famous, tho Unfortunate, *Mithridates*, King of *Pontus*) sent one of his Soldiers to give the Besieged notice of Relief; who, being to pass a River, did Swim over supported by two *Bladders*, in dif-

disguise of a Sea-Monster, and preserved the Letters he carryed in one of *them*.

The like Contrivance is related to have been practis'd by *Hircius*, to *Decius Brutus* (two Roman Consuls) the last being besieged by *Anthony*, only the Epistles were inscrib'd on Lead Plates. Front. ib.

Bishop *Wilkins* in his *Secret and Swift Messenger*, speaks of Inventions, whereby a Man may pass under the Water, if there were a long Trunk or Pipe likewise contriv'd to let down fresh Air to the Messenger: But withal he tells us that to prevent such Conveyances the Enemy used to cross the Rivers with strong Nets, and to fasten Stakes in several parts of the Channel; but 'tis a great question whether this Experiment be practicable. And the same Author in a Treatise he publish'd, a considerable time after his *Secret and Swift Messenger*, speaking of *sub-marine Navigation*, and the Requisites for performing it, does not mention any Contrivance for letting in fresh Air: The three things he reckons considerable in the Case are these; 1st. That the Vessel it self should be of a large Capacity, that as the Air in it is corrupted in one part, so it may be purified, and renewed in the other: Or if the mere Refrigeration of the Air would fit it for breathing, this might be somewhat helped with Bellows, &c. 2dly. That the Lamps or Fires in the middle of it, like the reflected Beams in the first Region, rarifying the Air, and the Circumambient Coldness towards the sides of the Vessel, like the second Region, cooling and

Mathemat.
Magick.
Lib. 2.
Chap. 5.

condensing it, would make such a vicissitude and change of Air, as might fit it for all its proper uses. 3dly. He cites *Mersennus*, and tells us, That there was in France one *Barrieus*, a Diver, who had lately found out another Art whereby a man might easily continue under Water for six hours together, and whereas ten Cubical feet of Air will not serve another Diver to Breathe in for half an Hour, he by the help of a Cavity, not above one or two foot at most, will have Breath enough for six Hours, and a Lanthorn scarce above the usual size to keep a Candle burning as long as a Man pleases. By what Means he arriv'd to this Art I hear not.

In the *Secret and Swift Messenger*, we hear of Messages conveyed by Persons in Coffins as dead, &c.

There are many Relations in History, of Brute Creatures, that have carried Intelligence betwixt Confederates: I shall mention a few.

Alianus, l. 6. cap. 7. relates that one *Menthes* a King of *Egypt*, kept a Crow he had made so very tractable, that having received from him the particulars of its Commission, it would carry a Message to any part of the World.

In *Tritheimii*. *Polygraph*. pag. 96. It is related that *Hircius* and *Decius Brutus* (already mentioned) kept a Correspondence by the help of Pigeons.

Saladine, the Sultan of *Agypt*, is said to have used this way of giving and receiving intelligence at the siege of *Ptolemais*, about the year 1194, &c.

There are other Modern Relations to this effect which I pass over.

Dogs have also been used for Messengers upon Urgent Occasions, having Epistles fixt to, or rather inclosed in their Collars, &c. See *Justus Lipsius Cent. 1. Epistolarum ad Belgas*, 44. and out of him in *Schöttus's Steganographia*, &c.

See Front. Lib 3. cap. 11. 13. de Stratag. As also Schot. Stegan. Clas. 12. c. 2.

Baptista Porta has a cruel kind of Device secretly to convey Letters, viz. to give a Written Message roll'd up in a piece of Bread to a Hungry Dog, whose Belly the Confederate is to rip up before he receive the Secret.

Mag. Natur. lib. de Ziph. c. 6.

Arrows, *Darts*, &c. have long since been used for greater Destruction, than the killing of single Enemies; for whole Cities have been attempted by means of one Shot out of a Bow, *Cleonimus* King of *Lacedæmon* at the Siege of *Træzen*, caused shoot Arrows into the Town with notes affixt to them containing these words, ἤκω, τὴν πόλιν ἐλευθερώσαν, *I come, that I may restore Liberty to this City.* And the Citizens were so *Credulous*, I dare not say *Good natur'd*, as to believe this common Topique, and opened their Gates to him and his Army.

Polyæ. 1.2.

But

But instead of tying Epistles to an *Arrow*, there are later Contrivances, whereby the Letter may be put conveniently enough within *one*, or in *Bullets*, &c.

Keckerman relates, and let him answer for the truth of it, that *Rhegiomontanus*, at the coming of the Emperor *Maximilian* to *Nuremburg*, made a *Wooden Eagle*, which flew a quarter of a Mile out of the *Town* to meet his Imperial Majesty, and returned back again to accompany him of its own accord : And if this obtain belief so may that of *Horace*, as to the *Artificial Dove*, contriv'd by *Archytas*, Citizen of *Tarentum*, the *Pythagorean* Philosopher.

Rhegiomontanus is likewise said to have contriv'd an *Iron Fly* of which *Dubartas*.

*Once as this Artist more with Mirth than meat,
Feasted some Friends whom he esteemed great,
From his Learn'd Hand, an Iron Fly flew out ;
And having flown a perfect round-about,
With wearied Wings return'd unto her Master,
And as Judicious on his Arm he plac'd her.*

Bishop Wilkins in his *World of the Moon*, proposes an Experiment of a flying Chariot, and in his *Secret and Swift Messenger* : He mentions it as an Excellent Contrivance, Secretly, Safely and Swiftly to convey any Message : He again insists upon it in his *Mathematical Magick*, and is at a great deal of pains to answer the Objections may be urged against it (says he) *We see a great difference betwixt the several Quantities*

Horac. Lib.
1. Od. 28.
6. Day
1. W.

Mat. Mag.
1. 2. 6. 8.

ties of such Bodies as are commonly upheld by the Air, not only Gnats and Flies, but also the Eagle and other Fowl of vaster Magnitude. Cardan and Scaliger do unanimously vfirm (and this is almost as wonderful as the flying Chariot) That there is a Bird amongst the Indians of so great a Bigness, that his Beak is often used to make a Sheath, or Scabboard for a Sword, &c. And a little after, adds, The main difficulty and Labor of it will be in the raising of it from the Ground ; near unto which the Earth's Attractive Vigor is of greatest Efficacy. But for the better effecting of this, it may be helped by the strength of Winds, and by taking its first rise from some Mountain, or other high place ; When once it is aloft in the Air, the Motion of it will be easie, &c.

But yet for all this, I do not hear, that any part of this Mechanical Learning, has been very guilty of the Cryptical Conveyances we speak of, however if they should attain to that Perfection (which I do very much question) they may be subservient to bad Designs, and therefore I mention them.

CHAP.

C H A P. V.

Of the several Proposals for Secret Informations, mention'd by Trithemius in his Epistle to Arnoldus Bostius, &c.

HA V I N G gone through the several ways for Secret Information in *Writing*, by *Signs and Gestures*, and in *Speech*; and having taken notice of the most remarkable ways for *Secret Conveyances*, that are recorded in *History*, I come now to enquire into the *wonderful Proposals* with which *Trithemius* has amaz'd the *World*; not only in that *Epistle* of his to *Arnoldus Bostius*: but in his other *Writings*.

There are some *Treatises* upon *Steganography* have come out under *Trithemius's* Name; but whether *Genuine*, or *Supposititious*, I shall not determine.

From the affected *Obscurities*, under which *Trithemius* veiled his *Methods* for *Secret Information*, he had the ill *Fortune* to lie under the *Suspicion* of dealing with bad *Messengers*: And *Frederick* the 2d. *Prince Palatine*, &c. caused Burn the *Original Manuscript* even of his six
Books

Books of *Polygraphy*, That in my thoughts contain just as much of *Witchcraft*, as that Opinion held by *Vigilius* Bishop of *Saltzburg* (concerning *Antipodes*) had of *Hereſie*, who was condemn'd for it in the beginning of the 8th. Century.

It is questioned by ſome, whether thoſe Books of *Polygraphy* *Trithemius* himſelf publiſhed were a part of the *Steganography* he propoſed, and there wants not Reaſons for the Affirmative. But here I wave this, and all other Debates of this nature.

And that we may proceed regularly, take his own Words concerning his *Steganography*.

The Epistle of *Johannes Trithemius* to *Arnoldus Bostius*.

In manibus jam habeo grande opus, quod si unquam fuerit publicatum, quod absit, totus Mundus mirabitur, cujus primi libri titulus est Steganographia. Erunt autem quatuor libri, quilibet ad minus centum capitulis distinguuntur. Incepi hoc opus ad instantiam unius magni principis, quem nominare non opus est. Quæris quid hoc opus docet? Maxima docet, omnibusque nescientibus stupenda & incredibilia, quæ à sæculo nunquam sunt audita.

Primus enim liber continet plusquam centum modos occultè scribendi, quicquid velis sine omni suspitione, sine literarum transpositione, sine omni timore, ita ut non sit homo in Mundo, qui naturali Industria scire, vel suspicari quidem possit, quid in meis literis contineatur, præter eum, qui artem no-
vit

vit ex me, vel ex eo quem ego docuero. Verba sunt plana & familiaria, omni suspitione carentia, sed intentionem meam nemo sine arte percipere poterit in æternum, quantumcunque sit doctus, & est res verè stupenda.

Secundus liber multa mirabiliora continebit, per ignem videlicet in hac arte possum mentis meæ conceptum notum facere artem meam scienti ad quantumcunque distantiam, ad centum milliaria vel plura securè, sine verbis, sine scriptis, sine signis per quemcunque nuncium, qui si comprehensus in via fuerit, si interrogatus etiam per tormenta durissima, nihil potest fateri de nuncio meo, quia nihil sibi penitus constat de illo, quicquid occurrat, nuncium meum semper manebit occultum, nec omnes totius Mundi homines si simul essent congregati possent illud vestigare virtute naturali.

Quod etiam facere sine nuncio, dum volo, possum, voluntatem quoque meam indicare possum sedenti in carcere artem scienti, etiam longè absens quantumcunque custodiatur, etiam si tribus milliariis sub terra sederat. Et hæc omnia latissimè & universaliter quando & quotiescunque voluero possum, naturaliter sine aliqua superstitione, vel adjutorio spirituum quorumcunque. Mira sunt fateor, sed audi mirabiliora.

Tertius liber docet artem, per quam possum hominem idiotam, scientem tantum linguam maternam, qui nunquam novit verbum Latini Sermonis in duabus horis docere, scribere, legere & intelligere Latinum satis ornatè & disertè, quantumcunque voluerit, ita ut quicumque viderint ejus literas, laudent verba, intelligant Latinè composita.

Quar.

Quartus liber continet multa stupenda experimēta, sed purè naturalia. Mentem videlicet meam indicare possum scienti artem meam inter edendum, vel sedendum cum aliis, sine verbis, sine nutibus quam latissime voluero, etiam inter loquendum, prædicandum, ludendum in organo, vel cantandum, sine impedimento actionis alterius cujuscunque, ita ut prædicando bona & sancta indicem, non verbis, non signis, non nutibus, cuicunque scienti latissimè quicquid voluero, etiam clausis oculis, & alia multa quartus liber continebit arcana, quæ non sunt in publicum proferenda.

Mirantur hæc omnes, qui audiunt, è quibus multi sunt viri nobiles atque doctissimi, existimantes ista aut esse impossibilia, aut penitus supernaturalia.

His ego tibi que respondeo, quod multis respondi: multa naturaliter esse possibilia, quæ nescientibus viris naturæ impossibilia, vel etiam supernaturalia videntur. Et ecce coram Deo meo loquor qui omnia novit, quod ea quæ prædixi miranda, multò sunt excellentiora, profundiora & majora, quàm ego scribere, aut tu credere possis, & tamen omnia sunt pure naturalia, sine deceptione aliqua, sine superstitione, sine magica arte, sine invocatione seu ministerio quorumcunque spirituum.

Hæc idè dixi, ut si forte aliquando rumor ad te pervenerit, me aut scire aut posse miranda, non me Magum dico existimares, sed Philosophum. Nam quod Alberto Magno profundissimo rerum naturalium scrutatori contigit, ut propter miranda quæ occulta virtute naturæ operatus est, Magus à vulgo sit habitus, mihi sum certus similiter contingere posse.

Si

Si quæris, unde mihi ista quæ nemo alius novit, audi. Non ab homine, neque per hominem ista didici, sed per revelationem nescio cuius; cum enim præsentis anno, quadam vice cogitarem quid novi possem invenire quod omnes lateret, cæpi cogitare si ea possem excogitare quæ dixi miranda. Cum post longam phantasiam tanquam de re impossibili penitus desperarem, dormitum eo, me nocte reposui, fatuitatem meam ipse mecum deridens, quod impossibilia quærere tentaverim. Eadem nocte mihi astitit quidam dicens, non sunt vana, ô Trithemi, quæ cogitasti, quanquam tibi sint impossibilia, quæ nec tu, nec alius tecum, poteris invenire; dixique ad eum; Si ergò possibile sunt, dic, obsecro, quomodo fiant. Et aperiens os suum, de singulis, per ordinem me docuit, ostendens quomodo fieri, quæ multis diebus frustra cogitaveram, de facili possent. Ecce coram Deo quia non mentior, sed veritatem dico, neminem ista adhuc docui, quamvis multi permittentes magna, sæpè rogarint, præter unum principem cui scribo, quem de possibilitate artis manifesto argumento feci certior, nec decet ista alios scire, quam principes; alioquin multa per ea fierent mala, traditiones, deceptiones, fornicationes & alia quæcumque vellent homines mali. Sed benè utentes arte multa per eam bona Reipublicæ facere possent; possum autem ista omnia docere in omni lingua totius mundi quam nunquam audiivi. Hæc tibi, Bosti, propterea significare volui, ne me crederes otiosum.

In this Epistle Trithemius speaks of four Books only; erunt autem quatuor Libri, &c. But in his Preface to the Emperor Maximilian, he
men-

mentions eight; and out of this Preface I have hereunto subjoynd his Apologetick account of his, Steganography in his own Words.

Ad memorati Principis & Domini Electri Philippi Comitis Palatini, Bavaricarque Ducis infantiam, ego Johannes Trithemius, nunc Abbas Monasterii S. Jacobi apud Wirceburg, tunc vero D. Martini, Præsulis in Spanheim, Moguntiaë diocesis, octo mysteriorum libros in Steganographia scribere cæpi. Me autem in tertio jam libro ejusdem operis lucubrationem continuante, res contigit, quam breviter, si poterò, sum dicturus. Anno Dominicæ natiuitatis millesimo quadringentesimo nonagesimo nono, indictione Romanorum secunda: sciscitanti per Epistolam Arnolde Bostio Carmelitæ Gandavensis oppidi, quid novi ederem, quibusve studiis occuparer, altera Palmarum die per mercatores ut amico rescripsi, me habere sub incude novum & mirandum Steganographiæ opus, & quid in singulis contineretur libris, per ordinem reseravi. Verum prius quàm epistola mea pervenisset Gandavum, Bostius in diebus Paschalibus è vita migravit ad Christum. Cujus loci Prior literas accepit, aperuit, egit, promissorumque novitate (ut reor) attonitus, multis aliis rogantibus legendas & rescribendas communicavit. Hinc est factum quod ipsa epistola mea, brevi tempore, per totam penè Germaniam & Galliam divulgata, sæpiusque à pluribus rescripta, multos etiam doctissimos viros convertit in stuporem & admirationem, usque adeo ut quid cum veritate sentire deberent, de me hæsitarent. Ex his viris nonnulli qui meas in dicta Epistola Pollicitationes

tiones constantè asseverarent frivolas, impossibiles, atque mendaces, & à me inanis gloriæ causa impudenter excogitatas.

Alij verò dicebant. Magna & miranda pollicetur iste Abbas Trithemius, quæ si potest, non aliter quàm Dæmonum ministerio potest, cum naturæ metas procul videantur excedere. Si verò non potest, quis eum dubitabit esse mendacem, & ab omnibus viris bonis & doctis meritò refutandum: Sed absit procul utrumque à me, quoniam naturalia promisi. Omnium verò incognita mea temerè judicantium, maxime temerarius, & iniquissimus rerum æstimator tandem prorupit in medium, Carolus Bovillus, natione Picardus, qui cum superioribus partibus Alsatia peragratis, ad me gratia hospitij venisset in Spanheim per Treviros rediturus in Galliam, quâ poteram humanitate ipsum tractavi, & omnia hospitalitatis beneficia, quamdiu mecum fuit, hilari vultu exhibui. Cumque ut fieri solet inter amicos maxime literarum studiosos, omnia mea gratissimo hospitij exhibuissem videnda, cum aliis se obtulit etiam memoratum opus Steganographiæ, nec dum eo tempore consummatum. Vidit Bovillus, & obiter legit mente aliunde occupatus se adinventum mirari dixit, laudavit, nec quo intelligeretur modo, curavit. Unde cum non peteret intelligentiæ clavem, nihil eorum, quæ continebantur ipsa lucrubatione nostra, meruit audire vel percipere. Reversus post hæc in Galliam, malum bonis pro bono reddidit, & Christianæ fædus amicitia turpiter violavit. Interrogatus enim per dominum Germanum de Ganay communem amicum, postea Episcopum Aurelianensem quid apud me reperisset, vidissetque in Spanheim,

falsa

falsa pro veris, mendacia pro beneficiis rescripsit, dam-
nans & temerè judicans ea, quæ comprehendere
intellectu minimè valebat. Nam cum doctrinæ sibi
palmam invidia & mendacio crederet fore cõse-
vendam, epistolam ad memoratum virum doctissi-
mum falsitate, mendaciis, injuriis & contumeliis
multis plenam rescripsit, in qua non intellectæ Ste-
ganographicæ mentionem faciens, me prævis artibus
læditum Magum & Nectromanticum falsè, manda-
citer, & nimis injuriosè temeraria præsumpti-
one proclamat. Cujus mendacissimis injuriis & Blasphe-
miis, Deo miserante, brevi taliter sum responsurus,
quo intelligat omnis posteritas & me innocentem, &
Bovillum impium, crudelem, & temerarium esse
in hac parte mendacem. Constantè affirmo, & raciter
juro, & confidenter in animam meam juro, cum Dæ-
monibus, prævis ac perniciosis, magicis vel necro-
manticis artibus me nullum unquam habuisse cõ-
mercium: sed omnia & singula, quæ vel scripsi vel
scripturum me sum pollicitus pura esse, sana, natu-
ralia, & Christianæ fidei in nullo penitus adversa.
Inde non vereor mea promissa coram viris bonis &
doctis, quando & quoties opus fuerit, dare exami-
ni quorum determinationi nullatenus intendo relu-
tari. Quod hanc Bovillanæ temeritatis historiam
quæ præfationi meæ interposui, causa rationabilis
fuit, ut intelligant omnes maturo factum consilio,
quod hætenus manet in tenebris opus Steganogra-
phiæ sepultum, non quod temeraria Bovilli judicia
vetuam: sed ne causam pluribus videar dare simili-
us de me similia suspicandi. Enimverò quantum
ad me attinet, malem æmulos meos placare silentio,
quàm literis irritare, vel scripturis ad insaniam pro-

vocare. Satius enim judicari, omnia mirabiliter inventa perpetuo damnare silentio, quàm Magicæ vel Necromanticæ perniciosæ superstitionis notam, falsa etiã hominum æstimatione incurrere. Lateat ergo Steganographia in tenebris, nec fiat Bovillanæ Societati mendaci communis, quæ de rebus judicare consuevit incognitis, & depravare famam boni viri sola libidine pravitatis. Veruntamen cohortantibus amicis, ut cum Bovillo intelligant æmuli nostri, quàm temeratam & e mentitam nobis injuriam fecerit (manente suis in terminis Steganographia) subjectum opus, quod Polygraphiam nuncupamus, per sex libros distinctum in lucem edere consentimus. Legant qui volunt, & sine stomacho legant hoc volumen amici, cujus cùm latentia mysteria intellexerint omnia, ipsi absque invidia sint iudicēs, naturalia sint an superstitiosa. Scio enim & certus sum omnia esse sincera, pura, naturalia, & ab omni studio superstitionis malæ remota.

Quoties autem sermo procedit obscurior, ea fit ratione, ne gladio defensionis vesanus abuteretur ad interitum, quem animo & mente sanus ad sui defert munimentum. Nihil tamen propterea in eo continetur mali, cùm bonis etiã rebus in malum abutantur perversi. Quisquis autem hanc editionem nostram condemnare præsumpserit, ipse sibi conscius est & testis, quod eam nunquam veraciter intellexit. Celantur sub ænigmatibus mysteria ne bacuceis fiant bubonum arcana quomodolibet manifesta. Si quem hæc scire delectat, remota procul invidia Lector accedat.

Sum enim Christianus, sum Presbyter, sub norma Divi patris Benedicti & Monachus, Christum dili-

diligo, & quâ possum sinceritate mentis, devotus semper adoro, nulla mihi sunt, nulla fuerunt, & protectore Deo nulla erunt cum dæmonibus commercia, nulla in Magicis, Necromanticis, seu profanis artibus studia, nullæ occupationes, nulla documenta. Qui de me aliter sentit, malè sentit, injuriam facit, & apertum Bovilli mendacium defendit.

And now having made Trithemius his own Advocate for the Lawfulness of his *Steganography, &c.* We may the more safely deal with his several Proposals therein contained; and to come to Particulars.

I. INQUIRY.

How Trithemius might have performed without any unlawful Compact, what he promises in his first Book?

Primus enim Liber continet plus quam centum modos, &c. “ The first Book (says he) contains
 “ more than a hundred ways of Secret Writing;
 “ without all Suspicion, without any Transpo-
 “ sition of the Letters, without any fear of dis-
 “ covery, for no Man by human Industry can
 “ know, nay or suspect the involved meaning
 “ of my Letters, except he who knows the
 “ Art from me, or from him to whom I shall
 “ teach it, &c.

SOLUTION.

Having already taken notice of several ways of Secret Writing, that would never have given ground for Suspicion, if such Methods had not been first made Publick, much of the wonder now ceases. The *Lacedæmonian Scytale*, *Julius* and *Augustus's* Inventions of Secrecy by *Transposition of Letters*: The *Invention of new Alphabets*, in short none of the old Inventions of Secret Writing had this Requisite, and before *Trithemius* imployed his time that way, very few or none ever thought of *Preventing Suspicion* in *Secret Writing*, or of the possibility of it; and besides, the Art of *Decyphering* was *then* altogether unknown; so that there might be some appearance of reason for his too confident Assertion; but That it was no way answerable even *then* to the stress he laid upon it, will I hope appear.

Those particular Methods that in great Probability he refers to, in the Words cited, have nothing but *hard Words* to guard them against discovery, the Invention hath little of extraordinary contrivance in it; for it is only by making the first Letters in the exterior Letter serve to express the inward meaning, as I have observed, *pag. 67. cap. 3.* Or by intermitting one Word, so that the first Letters, of the first, third, and fifth Words, &c. will be only significant.

Schottus has several Examples to this purpose, and that I may not seem, quite to neglect any thing so much insisted on, by so great Authors, I have insert one. v. g.

Steg Class.
7. Ero-
tem. 5.

Let the Secret Intimation be, *Hac nocte post XII. veniam ad te, circa januam, que ducit ad Ortum, ubi me expectabis; age ut omnia sint parata.*

Which by the former Artifice may be involv'd in the following Words.

Humanæ Salutis Amator, qui creavit, omnia nobis indixit Obedientiam Mundatorum, cui omnes tenemur obedire & obsequi. Præmium Sanctæ Obedientiæ erit Sempiterna fælicitas timentibus Deum. Christi Obedientiam in omnibus imitari Studeamus ut Vitam Æternam promissam nobis Mereamur Ingressi cum Angelis per Misericordiam Dei agamus Pænitentiam dum possumus; tempus vitæ est brevissimum; cito Mors imparatos offendet, repente Negligentes consumet, Judici Animas transmittet. In Pænitentiam agenda Fratres non tardetis: Velociter enim ad vos Mors veniet quam nemo vestrum diu evadere potest. Dies ergo vestros transeuntes conspice, Pænitentiam inchoate dum tempus habetis. Ad quid diutius Negligitis? O Mors rerum horribilium terribilissima, quam velociter nos miseros consumis! Vester incolatus Brevissimus est, Judicio abnoxius, Mors omnes examini submittit. Exaudi nos Christe piissimè Salvator. Nobisque pænitere cupientibus esto propitius. Concede nobis Timorem & Amorem tuum benignissimè Redemptor, Indulgentiam Peccatorum Supplicantibus

*bus tribue. Alme Creator Generis Humani exaudi nos, veniam nobis tribuens Scelerum. ô Pater misericordissime, esto nobis Misericors ! Infirmi-
 tem nostram adjuva clementissime ; succurre mise-
 ricorditer infirmis. Animabus nostris, quoniam tui
 sumus. Pater indulgentissime Animabus fidelium
 requiem concede, Angelis conjunge, timentibus te a-
 desse digneris.*

Schottus, takes notice of a great many ways of varying this Secret Contrivance, such as, by Beginning at the 2d. Word of the *Exterior* Letter, and from thence to the 4th. 6th. &c. or to begin at the 3d. word, and proceed to the 4th. &c. Or by interposing words betwixt some of the Letters in the *Secret* Writing, and the rest to follow one another immediately, Or otherways by intermitting sometimes two words in the *Epistle infolding*, and sometimes one, &c.

All which are very *Laberious to write*, and very *easily decyphered*, if suspected.

Now that this Method of Secret Writing, was the Subject of *Trithemius's* first Book of *Steganography*, there are good Arguments. For,

1. It is published in a Book entitl'd *Clavis Steganographiæ* that goes under *Trithemius* his Name.

2. Tho' *Schottus* seems to question whether this was really any part of *Trithemius's* Writings; yet he tacitly acknowledges it. (Says he) *Qui Clavem edidit, Artificium non intellexit, &c.*

He

He who published the *Clavis* has not understood the Artifice ; for the Old German Words in the Example are altered into the Modern Dutch, which change, confounds the Sense, &c. Now certainly if the Publisher had been Author, he must be supposed to have understood his own Example ; but it is acknowledged he did not.

2. On the other hand I see no improbability, but that this *Clavis Steganographiæ Trithemii* is Genuine ; for since others of his Writings were published long after his Death, which are acknowledged by all to be his own, why might not this Manuscript fall into the Hands of some Person, that particular and private Considerations might induce to send it abroad for Company ? And withal his peculiar Stile in obscuring plain Things, is a convincing Argument of the Truth of it.

3. And withal this way of Secret Writing, can easily admit of a hundred and odd Variations, and agrees with his Proposition in all Things, except the *Intricacy*, he attributes to it. But this is not, the only Hyperbole, he makes use of.

INQUIRY II.

Into the 2d. Book of his Steganography.

Secundus Liber multa Mirabilia continent,
 “ &c. (i. e.) The second Book contains ma-
 “ ny things more strange, viz. By this Art
 “ I can communicate my Intentions (by Fire)
 “ to any one instructed in it, at any distance, a
 “ hundred Miles or more, without Words,
 “ without Writing, and without Signs, by any
 “ Messenger, who, tho he be apprehended by
 “ the way, and examined by the most severe
 “ Tortures, he can reveal nothing of my Mes-
 “ sage, because he knows nothing of it. Nay
 “ whatever occurs it can never be discovered,
 “ and all the Men on Earth if assembled toge-
 “ ther, can never unmask it without more
 “ than natural help. This I can at pleasure
 “ perform without a Messenger: I can express
 “ my Mind at a great distance to a close Pri-
 “ soner, three Miles under ground: Let him
 “ be under the strictest Custody; all this I
 “ can do effectually, and at all times, when
 “ and how often I will, &c.

By what Methods *Tritemius* could perform all this, hath been enquired into, by *Schottus*, *Kircherus*, and many others; and it will be found a very hard task to give any satisfactory account of the means; for the whole Pro-
 po-

positions can most naturally be *RESOLVED* into Contradictions : For,

1. There is a way of *Converse* proposed, abstracting from all means of *Discourse* : Without WORDS, without WRITING, and without SIGNS.

2. He proposes to inform his Confident without a *Sign*, and yet by a *Sign*, viz. *Fire* ; for if *Fire* or *Smoak* when used for Secret Information, be not truly signficatory *Signs* both Reason and Grammar are at a great loss.

3. He pretends, that he could express his Mind to a close Prisoner at a great distance, and three *German* Miles under ground, *when-ever*, and *how often* he pleased ; And this I am *perswaded* he had omitted, if he had tryed the Experiment, upon one, in a Gulf, but half a *German* mile, below the surface of the Earth, &c.

As for the Conjectures for reconciling the last Propositions to Sense, they want not their own Difficulties : But since we must necessarily grant, that his Words are ænigmatically propos'd, there must be the greater allowance given.

His Propositions in the *second Book* are reducible to three.

1. *To Communicate his Secret Intentions by any Messenger to his Confederates at any distance, without any Writing, &c. And that by Fire.*

2. *To Communicate his Intentions (by Fire) without a Messenger. And*

3. *To*

3. To signifie his Mind to a close Prisoner, underground, &c.

By the first, *Schottus* is of Opinion, that *Trithemius* understood that way of Secret Writing mentioned, *Chap. 1. Sect. 6.* which will be only Visible when held by the Fire. He says the Messenger cannot reveal the Message, because he knows not the Contents of it: And if intercepted, nothing could be understood by it, because the Artifice was at that time known to few or none, except *Trithemius*: And when it comes to the Confederate's Hands, he may find out the meaning by Fire, without any word or sign, made by the Writer, upon the Paper, by Fire.

If you approve of this *Resolution*; by the words, *without Writing or Signs*, must be understood, *apparent and visible Letters or Signs*. And indeed this is the most natural Construction can be put upon them.

But there is another, wants not some kind of probability, *viz.* That these words may signifie, some Secret Conveyance by Writing upon the Messenger's Skin, such as that we observed, *Chap. 4.* concerning *Histiæus*: This conjecture is likewise mention'd by *Schottus*: For by (*FIRE*) *Trithemius* may understand a *Virtual Fire*, *viz.* *Aqua Fortis*, &c. And *WRITING* and *SIGNS* may be explained as before.

As

As to the *second* Proposition, it may be referred to that Secret way of Information by Torches, or by Fire and Smoak, &c. mentioned Chap. 2. Sect. 2.

The other Conjectures here are *Fabulous*, particularly that of *Cornelius Agrippa, Lib. 1. Philosoph. Occult. Cap. 6. viz.* By opposing a Glass with Letters writ upon it to the Full-Moon, which being magnified in the Air, and carried back to the Moon with her reflected Beams, are there perceptible.

And as for the *third*, it may respect the Species of *Sound*, because of the Supposition of being so strictly shut up, unless he had an Eye at some of those Secret ways of Conveyance mentioned Chap. 4. which last, I rather encline to believe, as being the more easie and safe Contrivance, considering the supposed Circumstances of a *close Prisoner*; nor does *Trithemius* propose the Performance of the last by *Fire*, or *without Writing*, &c.

And this Conjecture will appear the more probable, when we come to consider the barbarous and strange Terms, he wrapt up those known Experiments in.

I know there are likewise Fables here confidently related, of *means for entertaining a Correspondence at any distance*, by help of two Needles of an equal size, touched by the same Loadstone, moving in a circle, whereon the Letters of the Alphabet are described, &c. And that by the mutual *Insition* of Blood or
Flesh

Flesh, between two Confederates, &c. But the Performance of either is impossible in Nature; as *Kircherus Schottus*, and other great *Naturalists* have clearly demonstrated.

INQUIRY III.

Concerning the third Book of *Steganography*.

Tertius Liber docet Artem, per quam possum
 “ *Hominem, &c.* The third Book teaches an
 “ Art, by which I can instruct a Man Ignorant
 “ of Letters, only knowing his Mother-
 “ Tongue, tho he never understood one word
 “ of Latine, in the space of two Hours, to
 “ Write, Read, and Understand Latine, or-
 “ nately and eloquently, &c.

This Art agrees exactly with that he afterwards published in his *Polygraphy*, only in the last he explains some ambiguous Words in the former, *v. g.* These Words, *to write, Read and understand Latine, ornately and eloquently, &c.* Are rendered in the exposition of his first Book of *Polygraphy* to this purpose, *In paucis Diebus*
 “ *non dicam horis informare poteris, &c.* In a few
 “ days, not to say hours, you may teach one
 “ ignorant of the Latin Tongue; to read, write,
 “ speak and understand it; indeed not every
 “ thing in it, but to such a degree as any ex-
 “ gence in his affairs shall require.

Now

Now a part of the Fallacy in his Epistle to *Arnoldus Bostius* lurks in that expression, that he could make a Man, *read, write and understand Latin, ornately and eloquently*, without any exception. Whereas on the contrary, his Scholar shall only Read, or Communicate any Secret Message in his *Mother-Tongue*, concealed under certain Forms of Prayers or Exhortations in *Latin*; of which he neither understands the *natural meaning*, nor can he change the *Forms* given him, upon occasion: Now to explain this ingenious Art a little,

1. There must be a vast number of common Alphabets writ down.

2. And to each of the Letters of every particular Alphabet, must be joyned Words that are *Synonyma*, or of the like signification, and these Words servē to express the Letters unto which they are opposite.

3. If all the Words expressing *A*, in the several Alphabets, do make up an *Oration*; and all *the Words* in each rank be of like signification. And if *A* in Writing by this Method, begin orderly at the first Alphabet, taking one Word thence, and another from the second, and the next from the third, &c. as they shall express the Letters of the Secret Intention: 'Tis easie to conceive, how a Man that is *Ignorant of Latin* must yet ornately write Latin. But that this may be further Evident, I have hereunto added a few of *Tritheimius's* Alphabets.

ALPHABET.

1.

A Deus
 B Creator
 C Conditor
 D Opifex
 E Dominus
 F Dominator
 G Consolator
 H Arbiter
 I Judex
 K Illuminator
 L Illustrator
 M Rector
 N Rex
 O Imperator
 P Gubernator
 Q Factor
 R Fabricator
 S Conservator
 T Redemptor
 V Auctor
 W Princeps
 X Pastor
 Y Moderator
 Z Salvator

2.

A Clemens
 B Clementissimus
 C Pius
 D Plissimus
 E Magnus
 F Excelsus
 G Maximus
 H Optimus
 I Sapientissimus
 K Invisibilis
 L Immortalis
 M Æternus
 N Sempiternus
 O Gloriosus
 P Fortissimus
 Q Sanctissimus
 R Incomprehensibilis
 S Omnipotens
 T Pacificus
 V Misericors
 W Misericordissimus
 X Cunctipotens
 Y Magnificus
 Z Excellentissimus.

ALPHABET.

3.

A Creans
 B Regens
 C Confervans
 D Moderans
 E Gubernans
 F Ordinans
 G Ornans
 H Exornans
 I Constituens
 K Dirigens
 L Producens
 M Decorans
 N Stabiliens
 O Illustrans
 P Intuens
 Q Movens
 R Confirmans
 S Custodiens
 T Cernens
 V Discernens
 W Illuminans
 X Fabricans
 Y Salvificans
 Z Faciens

4.

A Cœlos
 B Cœlestia
 C Supercœlestia
 D Mundum
 E Mundana
 F Homines
 G Humana
 H Angelos
 I Angelica
 K Terram
 L Terrena
 M Tempus
 N Temporalia
 O Ævum
 P Æviterna
 Q Omnia
 R Cuncta
 S Univerſa
 T Orbem
 V Aftra
 W Solem
 X Steilas
 Y Vitam
 Z Viventia

N

ALPHA.

ALPHABET.

5.

A Impendat
 B Conferat
 C Donet
 D Largiatur
 E Concedet
 F Condonet
 G Tribuat
 H Distribuatur
 I Retribuat
 K Contribuat
 L Indulgeat
 M Exhibeat
 N Præstet
 O Offerat
 P Deferat
 Q Ostendat
 R Revelet
 S Manifestet
 T Insinuet
 V Aspiret
 W Restituat
 X Reddat
 Y Administret
 Z Faveat

6.

A Omnibus
 B Cunctis
 C Universis
 D Credentibus
 E Nobis
 F Christianis
 G Fidelibus
 H Petentibus
 I Expetentibus
 K Orantibus
 L Exorantibus
 M Postulantibus
 N Expostulantibus
 O Quærentibus
 P Christicolis
 Q Inquirentibus
 R Requirentibus
 S Exquirentibus
 T Optantibus
 V Exoptantibus
 W Præoptantibus
 X Exspectantibus
 Y Sperantibus
 Z Desiderantibus

ALPHABET.

7.

A Vitam
 B Amœnitatem
 C Jucunditatem
 D Consolationem
 E Lætitiã
 F Gloriam
 G Fœlicitatem
 H Beatitudinem
 I Visionem
 K Jubilationem
 L Quietem
 M Requiem
 N Mansionem
 O Habitationem
 P Recreationem
 Q Fruitionem
 R Lucem
 S Exultationem
 T Claritatem
 V Pacem
 W Tranquillitatem
 X Glorificationem
 Y contemplationem
 Z Securitatem

8.

A Permansuram
 B Æternam
 C Sempiternam
 D Cœlestem
 E Supercœlestem
 F Perpetuam
 G Beatissimam
 H Angelicam
 I Seraphicam
 K Immortalem
 L Immarcessibilem
 M Ineffabilem
 N incomprehensibilem
 O Inæstimabilem
 P Luminosam
 Q Splendidam
 R Lucidissimam
 S Amœnissimam
 T Perrennem
 V Sanctissimam
 W Interminabilem
 X Dulcissimam
 Y Perfectam
 Z Futuram.

[cum Omnibus]

[cum Univerſis]

ALPHABET.

9.

10.

- A Sanctis
- B Electis
- C Prædilectis
- D Sanctissimis
- E Justis
- F Justificatis
- G Prædestinatis
- H Angelis
- I Arch-Angelis
- K Amatoribus
- L Cultoribus
- M Amicis
- N Apostolis
- O Prophetis
- P Discipulis
- Q Martyribus
- R Sanctificatis
- S Dominationibus
- T Dilectis
- V Civibus
- W Servis
- X Famulis
- Y Ministris
- Z Confessoribus

[uis in]

- A Cœlis
- B Cœlestibus
- C Supercœlestibus
- D Æternum
- E Perpetuum
- F Sempiternum.
- G Sæcula Sæculorum
- H Ævum Sanctum
- I Sæculum
- K Regno Cœlorum
- L Altissimis
- M Excelsis
- N Paradiso
- O Olympo
- P Paradisiacis
- Q Olympicis
- R Fulgoribus
- S Fœlicitate
- T Fœlicitatibus
- V Gloria
- W Honore
- X Magnificentia
- Y Luce perpetua
- Z Patria Cœlesti.

[Amen.]

The first four Books of *Trithemius's* Polygraphy, contain nothing but a Continuation of such Alphabets, only in the third and fourth, they are conceived in Barbarous Words: I have insert these few only, and given no Example, because the manner of Writing by them is by this time obvious.

Note the Words writ in a different Character at the side of the rest, signifie nothing to the Confederates; but are added in the outward Writing to make up the seeming Sense, and when there are two of them, one is only used.

Remarks upon the foregoing Method of Secret Writing.

I have not hitherto insisted upon this Method of Secret Writing: Nor do I here pretend to SOLVE the Difficulties in Decyphering it: But I have made some occasional Remarks as to the practice of it. And

1. According to *Trithemius*, there must be a new Alphabet for every Letter in the private Epistle.

2. These Alphabets require a more than ordinary Ingenuity in their Contrivance.

3. When the Alphabets are exactly fram'd; the least mistake in the Writer, turns the Secret Intimation into a *Chaos*.

4. But suppose there were nothing amiss in the whole Design, (which is enough in all Conscience freely to grant) yet there is more Time, and Pains required in Writing and Reading, by this Artifice, than a Man in Business, can dispense with: For (as we have observed) according to, *Trithemius*, the Key must contain as many Alphabets, as the Secret Epistle has Letters in it: Now in *Argile's* long Letter insert in the *Discoveries made in Scotland*, there are upwards of a thousand Words; and if he had taken *Trithemius's* way of concealing it, there had been five or six thousand Alphabets used in the Key: And I leave it to *ARITHMETICK* to RESOLVE. How much Time a particular Search into each of those Alphabets will amount to. And to *STOCISM* (for none, but of that Sect will try) how much Patience.

Athanasius Kircherus in his *Steganography* Endeavours to improve *Trithemius's* Method. The alterations I observe are these.

1. *Kircherus* contrives his Key in form of an Ordinary Epistle: Whereas *Trithemius* conceives his, in forms of Prayer, which is more Liable to Suspicion, especially in an age, when the greatest Villainies are committed under a Form of Godliness.

2. *Kircherus* has Alphabets of several Languages; whereby a man may chuse what speech he pleases for his Exterior Letter, tho he understand not the Genuine meaning of one Word of it. But this was proposed by *Trithemius*.

3. *Kircherus's* Key consists not of many Words

so that if the Secret or *Interior* Epistle be not conceived in a few, it gives Ground of *Suspicion* and of *Resolution* too.

For the Words that express every particular Alphabet (as before) being of *like Signification*, (that the outward Writing may have a seeming Sense,) at every return you shall have the same sense, tho not in the same words, which gives ground to suspect, and if the Writing be long, and many returns, to *Solve* it.

Again, suppose that several Letters, writ by the same Key were seized, (which is no great improbability) the Sense of all shall be to the same purpose, and that gives cause enough of *Jealousie*, and facilitates the *Discovery*.

And having considered *Trithemius's* tedious Method, and *Kircherus's* way of abbreviating it, both are lyable to so many Inconveniencies, that it is evident, many of the Proposals for Secret Information considered in the first Chapter, and particularly that of the Lord *Bacon's* by Writing *omnia per omnia* is preferable to it.

INQUIRY III.

Into the Contents of the 4th. Book of Steganography.

Quartus Liber continet multa stupenda Experimenta, &c. “ The fourth Book contains many wonderful Experiments, but simply Natural, *viz.* I can fully communicate my Conceptions to my confident, when we are

“ eating or sitting with others, without *Words*,
 “ without *Gestures*: As also in Discourse, in
 “ Preaching, Playing upon the Organ, or
 “ Singing, and that without any Impediment
 “ of either Action, so that in Preaching things
 “ good and holy, I can reveal my mind Secret-
 “ ly without *Words*, *Signs* or *Gestures*, &c.

These Words to my thinking may be reduced to three *Propositions*.

1. A Secret way of *Converse* in Company is proposed (*inter edendum vel sedendum*) without *Words* or *Gestures*,

2. By a premediated *Oration*, or any *Discourse*; to reveal an *Intention*; without *Words*, *Signs*, or *Gestures*. And

3. By *Musical Notes*, to inform a *Confederate*.

And I suppose they are all so jumbled together of *Design*, that these Words, *without Words Signs or Gestures*, might be attributed by the unwary, to every one of the particular *Proposals*. And certainly by *SIGNS*, &c. must be understood *Signs PERCEPTIBLE*, or else his Words fall under the first *Contradiction*, that was observed in the *Preceding Inquiry*. And having noted this, I proceed.

As to the first, In eating or sitting in Company, every *Action* may be *significant* by *Compact*, that is necessary or usual, as calling for Drink, wiping of the Mouth, or Hands, &c. And he does not Exclude *Signs* in the first *Proposition*.

As

As to the second Proposition, it is very naturally reducible to that kind of Secrecy in *Speech*, we have considered Chap. 3. Sect. 1. Paragraph 3. So that in Preaching *Bona & Sancta*, one may couch any Intimations, *WITHOUT* any *Sign* or *Gesture*; or *Words* (*i. e.*) *Words extrinsick* to the outward *Sense* of the Discourse; but this favors too much of *Impiety*.

As to the *Third*, That the Differences of Sound, and particularly of Musical Notes, either in Musick, Instrumental or Vocal, may be applyed to the Letters of the Alphabet, is already observed.

And now having Inquired into the *Mysterious* Difficulties, that relate to Secret Information contain'd in the Epistle to *Arnoldus Bostius*, I shall examin a few other of the Obscurities mentioned by *Trithemius*.

INQUIRY V.

Into the several Mystical Expressions, Trithemius hath left upon Record in his Polygraphy.

Trithemius in the Preface of his Polygraphy, hath these hard Words. *Magnus Romanorum Cæsar Augustus, tenebroso cupiens in arduis uti nunciorum ministerio, spiramina vocis conceptæ mutavit ex lucidis in Opaca, quorum barbariem vocis renitentem, Metatheseos Orchemate pulchra inventione, ad nutum convenientem effecit, & iste receptivus & quasi perpetuus ordo thelemati nihilominus*

Polyg.
pag. 17.

ominus & temporis rationi subjectus, quanquam nuncios ab incurfione Bacuceorum confervet in via fecuros : fui tamen regulatas non custodiens metas, intuentes faciet omnes de fuffpicione rei follicitos.

Polyg.
pag. 45.

All the Myftery is no more, than that *Augustus* by *Transpofition* of the Letters of the Alphabet, changed their Powers, as we have it from his own Authority in his Exposition to *Maximilian*.

P. 17, 18.

Again in his Preface, he tells us, *Archimides ille Syracufianus Mathematicorum facile Princeps, albam fuis convenientem institutis Volucrem, nudam per Caput & Pedes, haetro in formam Tetragoni recifo circumferenter affixit, ordinatifque debita proportione Ministris, opus volatili commendavit instrumento, donec in picam Imago Volucris albæ mutata comparuit. Quo rite peracto, refolvit affixam fua manu, quam ut avolare permiffiffet, facta eft subito inter familiares penetralium facies difjunctio magna, surrexitque mox tortuofæ imaginis monafticæ prius monftrum nimis vagabundum, cujus in afpectu nemo quod erat potuit cogitare. Nec prius conquievit bubonum diffenfio, donec Imago Magiftri, picam fcite religaffet Tetragono confimili.*

This Wonderful Monster, at laft by his own *Metamorphofis* is turned into that *Invention* of Secret Writing by the *Lacedæmonian Scytale*, mentioned page 91.

Page 50.

Alii enim Familiæres ministerio Artis præpositæ, Bubones habebant Philophotos alij Misophotos, &c.

By

By *Bubones*, he all along expresth *Secret Writing*, and what *Philophoti* and *Misophoti* do denote, is clear from the words themselves, viz. *Philophoti*, *Apparent Characters* from φίλος and φῶς; *Misophoti*, *Occult or Invisible Characters* from Μίσις.

The Hieroglyphick he takes to Express *Secret Writing*, in General, by the *Owl*, is very *Natural*: But when he says *habebant Bubones Philophotos*, the Expression is not so very agreeable; for *Owls* have no great kindness for the *Light*; as also *Light* and *Secret Information* were ever at variance.

A Little after Speaking of *Visible* and *Invisible* Characters, he says, *Modi v. no Characterum Visibilium, pro scriptura occulta nimis sunt multi, ac pæne innumerabiles, &c. Invisibilium autem tria sunt genera inter Mortales hodie magis usitata. Primum nuncupatur Dromaticum, quod fit in Derso Nuncicrum, Scriptura quedam Artificialis per Loturam cujusdam humeris duntaxat visibilis, quam penetrare nemo sufficit; qui artis nescierit arcanum. Secundum vero Hyphaticum dicitur, quo rebus certis in Panno scribitur, quod exsiccatum, videri potest minime; donec Madefactum in aqua frigida cernatur. Tertium genus nominatur Aleoticum, quod est multiplex & varium, tam in forma, quam in Materia, habetque modos occulti scribendi pæne Innumerabiles; ejus autem Scriptura fit in Charta, vel sine Charta, cum Nemilna, & Cala cum Raphocam, Lapolce, alijsque rebus diversis. Scribuntur item Lit. ræ, ac varijs modis abscon-*

Trick, ibid.

ſconduntur & Locis, ut ſub Rãce Tabulata, ſub Roſirila cubior, in Leopi, in Necoflas, in Ceocali, Locubat, in Ratera, in Liſpilia, & aliis ſimilibus pãne inſinitis, &c. Of all which in Order.

And Firſt, he himſelf explains the meaning of *Dermaticum*, to be an Artificial kind of Writing on the Meſſengers back, not viſible until waſhed with a *Certain Liquor*. The word is derived from *Δέρμα*, which ſignifies the ſkin: By what means this may be performed *Baptiſta Porta, Kircherus, Schottus*, and many more give an account; but for Antiquities ſake, I ſhall only Repeat *Pliny's* words in his * *Natural Hiſtory*, to the like purpoſe. *Tythemalum, Noſtri herbam lactariam vocant, alii Lactucam caprinam: Narrantque lacte ejus inſcripto Corpore cum inaruerit, ſi cinis inſpergatur apparere Literas. Et ita quidem Adulteros alloqui malũere quam codicillis.*

Plin. lib.
26. cap. 8.

See the
preced-
ing Chap-
ter.

2. *Trithemius* likewise explains *Hypbaſmaticum* to be an Experiment, whereby a man may write upon Cloth, and the Letters to be indifcernible, until the Cloth be wet in cold Water. *Hypbaſma* is a Greek word, ſignifying Cloth, or Weaving.

3. The third kind of Writing ſecretly by Latent Characters mentioned, he calls *Aleoticum*, I know none that have given any Account what it is, but it may be derived from *Ἀλέομαι* to avoid. *Trithemius* only tells us that it is Ma-
ni

nifold and various, both as to the *Form* and *Matter*, and has almost Infinite ways of Secret Writing, and that either with or without Paper, &c. That a man may write secretly without Paper, we have already given several practicable Instances in the 4th Chap. We shall now proceed to those adduced by *Trithemius* in this place. And,

1. Aman says he may write *cum Nemilua*, which in all probability is put instead of these words *cum Alumne* (i. e.) with Alum, for the one is only a transposition of the Letters of the other; an Obscurity *Trithemius* did very much affect.

Schot. Steg.
Class. 7.

2. By *Cala* may be understood *Lac*, (i. e.) Milk, and the Redundant Letter perhaps has been added *Euphoniae gratia*.

Schot.
ibid.

I have already considered secret Writing with *Alum* and *Milk*, Chap. 1. Chap. 6.

3. *Cum Raphocam* (i. e.) *Cum Camphora*, *Camphire*, a kind of Gum.

Schot.
ibid.

4. *Cum Lapolce*, is interpreted *cum Cepolla*, (i. e.) an *Onyon*.

Now after these Instances *Trithemius* comes next to treat of another part of his *Aleotical* kind of Secret Information. for (says he) as Epistles may be secretly written, so they may be several ways, and in several places Concealed.

1. *Sub Race Tabulata* (i. e.) *Sub Tabula cerata*, viz. The Letters inscribed may be covered over with Wax, as in that Instance we Mentioned of *Demaratus*, &c.

Schot.
ibid.

2. *Sub*

Schot.
ibid.

2. *Sub Roftrila cubior*, some interpret this *sub floribus Rubi*; but *Schottus* is not pleased with that Interpretation, but thinks it may perhaps be read, *Sub Roftrila Mubios, sub foliis Arborum*, a Concealing of Letters under the Leaves of Trees.

3. *In Leopi*, (i. e.) *in Pileo*, or to hide Letters in a Hat, Helmet, or Cap.

4. *In Necoflas* (i. e.) *in Flafcone*, to conceal Epiftles in a Bottle or Viol.

5. *In Ceocali* (i. e.) *in Calceo*, only the laft Letter is *redundant*.

6. *In Locubat* (i. e.) *in Baculo*, the laft Letter being again *redundant*.

7. *In Ratera* (i. e.) *in Terra*, under ground.

8. *In Lifpilia* (i. e.) *in Palliis*, in Cloths.

And now having in the laft place *Inquired* into the Wonderful Propofals for Secret Information mentioned by *Tritbemius* firft in an *Epiftle* to *Arnoldus Bofcius*; and afterwards in his *Polygraphy* to the Emperor *Maximilian*, I fhall not infift further at this time.

F I N I S.









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