



TREATISE

Of an Universal Medicine;

OR,

A True Aurum Potabile.

Being an accurate Description of a True Universal Medicine, and of its admirable Virtue and Efficacy which it sheweth upon the *Vegetables, Animals, and Minerals*. A Gift presented unto all such Noblemen as are desirous to preserve their Health, and to attain to a Long Life; it being an *Universal Medicine, or A True Aurum Potabile*.

After that I had by GOD'S assistance described three excellent Processes in the Continuation of the *Miraculum Mundi*, and had bestowed the same on men of several orders, that thereby they might the easier, and with a sifter Conscience, provide themselves with Food and Raiment: I was also desirous of tendering some small Present to Noblemen too, and such who are of eminent power and authority, and whom I had not forgotten to present with some Gift, which may serve for the preservation of their good health for a long time, and for the restoration of it when lost.

For it is a thing of the greatest Concernment for the Nobles, and such men as are placed in the degree of Power and Authority, to have the fruition of bodily health, whereby they may wisely rule over the subjects committed unto them by God, and may use a sound mind about the defence of the Gods, and the punishment of the Ungodly. Now a sound mind inhabiting in a sound body, doth proceed (next after the Divine Grace) out of a sound Heart and Brain. And it cannot be, that a publick Government can be rightly and well administered without a good Health; and this is as clear and evident as the noon-day light is. Forasmuch therefore as the safety and preservation of all Kingdoms and Republicks is placed in the Wisdom of their Rulers and Magistrates, and that impudence and ignorance of the Rulers is wont to ruin their Subjects, it is a thing of the highest consequence to save the Head of the whole Kingdom or Country sound, whole, cheerful, prudent and vigorous, and that he be not made unfit or incapable for the Government, by diseases, sickness, contumelies, and stupidity. Therefore the love of

my Neighbour constrains me to publish this *Universal Medicine* for the sake of the Great ones of the World, seeing it is so much conducive to the perpetual felicity and happiness of a sound and good Government; for no man can be said to be a sound man, if he be not of a sound constitution of Body. What benefit, I pray, can a sick man bring to himself, or to other men? Verily none at all, but is rather an hindrance and detriment both to himself, and unto others likewise: For when the Head is ill, there are a great many Members must serve it; but if the Head be sound and well, it exerciseth the governance of the whole Body very happily.

What profit has a man that is tormented with Sicknesses and Dolours, of all his vast Wealth and Riches, since he can neither use them nor enjoy them, looking upon them with a kind of nausea, and at last leaving them with grief behind. Certainly a sound body is to be preferred far before all the Treasures of this World, and no body will gainsay this. He is to be judged the Happiest man, that possesseth those two the greatest Gifts of God, viz. good Health and Riches. Sicknesses and Poverty are to be esteemed worse than even Death it self.

We sometimes see, that pious Magistrates and Governours are snatched away, and killed with small Diseases, which otherwise might have yet Ruled very many years over their subjects, had they had but good Medicaments, by help whereof they might have been succoured.

As for the way of Conserveing good Health, and recovering it when lost, this little Book doth most exactly shew the same, which I commend unto all those who are desirous of its preservation.

Of

Of a Universal Medicine,

OR,

AURUM POTABILE.

THE Medicine that is honoured with the Title of *Universal* must be of this property, viz. to operate universally upon the three Kingdoms, viz. the Vegetable, Animal, and the Mineral, and to be able to succour each of them, as a most high Medicine should do. Whatsoever now does not abound with such an excellent property, the Title of *Universal* is falsely attributed unto it; nor is it worthy such a Noble Name.

Therefore it doth, in the first place, behove me really, and in very deed, to demonstrate in this Book which treats of such a *Universal* medicine, that this famous medicine which is so intitled, doth also possess those very same virtues and properties which a *Universal* medicine ought to have. And farther, Such a *Universal* medicine ought not only to be a most friendly Auxiliary and Helper, universally, to those three Kingdoms, viz. the Vegetable, Animal, and Mineral, but it is likewise necessary that it be also preparable out of all those three Kingdoms, Vegetable, Animal, and Mineral, and that too out of each apart, without the addition of any peregrine thing, and without any great labour, for the benefit and profit as well of the Poor as of the Rich.

They therefore do extremely erre who are of such a foolish opinion, as to Dream that the matter of the universal medicine is only produced in such or such a place, and is to be fetch'd out of this or that Country with a great deal of Labour and Charges.

This opinion is Diametrically opposite to the common Vogue and Saying of all true Philosphers, who do unanimously confess, that their matter is every where to be found, and every one has it, and it is in the possession both of the Poor and of the Rich: And this verily is so open and evident a Saying, that nothing can be spoken more apparently.

For my part, I do affirm, that this Art is Vegetable, Animal, and Mineral, and that there is not a man to be found in the whole World, that has not the knowledge of this universal matter, and that does not use the same. Yea more, I do also affirm, that even a new-born Infant cannot live without it.

I have already accurately demonstrated in many places of the Writings I have hitherto published, that Nitre is found in all the things of the whole World; and is not only in all Vegetables, Animals, and Minerals, but also in the very Elements themselves, viz. in the Earth, in the Water, in the Air, in the Fire: And for this reason it both may, and deservedly ought to be called a *Universal* matter; for without any one believes this which I here mention, or does not credit it, 'tis all a case to me, what I have said I have said, nor need I say more. And thus much let suffice concerning the universal matter:

The Preparation I have openly enough treated of in many places of my Writings, but especially in my *Miraculum Mundi*, and in the other Writings thereunto appertaining; and therefore I forbear to make any more prolix declaration, and to multiply any more words about it.

But yet notwithstanding, I do here adjoin thus much, and confess, that although I have several times prepared that universal medicine, yet the Preparation thereof has not at all times answered my desires; nor most perfection and fixation, because I have wanted both time and opportunity of accomplishing it, and many other Impediments have hindered me from compassing the same according to my mind. But as concerning what Progress I have therein made, and that I can as yet perform or finish the same in three daies time; this, I say, I will consecrate to eternal memory, and in no case hold my peace, but speak out, for the instructions sake of Posterity.

And this I do to this end, that the omnipotence and bounty of God may be the more manifest, and that His Divine Name may be honoured the more, and that many Thousands of Sick people may be succoured with a most present and speedy Remedy.

This is the only cause that stirred me up to make this Discourse of the universal medicine; for I neither would, nor indeed ought I to burthen my Conscience by the concealment thereof, nor to hide and bury with mein my Grave, such a noble Gift of God, and the Talent which of His Gracious Benignity He hath been pleased to bestow upon me.

But yet I would not that any one should persuade himself that he shall (by his soothing words and large promises of golden mountains) squeeze out from me the Preparation of the same, whereby he may make use thereof to lead his Life in Pleasures, Pride, and Impiety, and so hurt poor mankind. No, let such an one be assured, that I will never do so, for it is not in my power to reveal to every one such a great Gift, and which is of God, and not of Man, but 'tis in the power of God alone so to do: And as for my self, I would much rather die, than to reveal and prostitute it to a wicked man. Besides, I would not have any one to suppose, that whereas I call this medicine of mine *Universal*, it is therefore able to transmute the Imperfect metals into Gold, so as to furnish one with such vast Treasures as the Philosphers attribute unto their universal medicine: No, for I am as yet ignorant of such a transmutation, nor indeed do I covet it, or gape thereafter, but give unto God only most great Thanks for that medicine, by which (being vouchsafed me of His mercer bounty) I am able to succour the miserable, sick, tormented, and diseased ones, and celebrate the glory and benignity of the Lord. I do withal readily confess, that I have not as hitherto received any benefit at all therefrom about the bettering

tering of the Metals thereby; nor do I at all seek after any benefits in that kind of way, being contented with that Medicine, advanced to such a pass, as to where by it may be able to suffice me to get Food and Raiment by God's help. I covet not after abundance of Riches, and do only beg of God, that He would neither afflict me with Poverty and Want, nor bestow on me too much Satiety and Fulness, lest I should be lifted up with Pride, and say, *Who is the Lord?* Nay verily, if I could with this Medicine get my self great benefit, as to the metallick affairs, yet would I not do it, nor would I lay out such a great Gift of God, upon temporary things, thereby to rob the poor, miserable, sick people of the same, for whose sake God was pleased to bestow it.

Perhaps it may so come to pass, that this my Medicine may, by the labour of diligent searchers, be brought to such a pass, as to be capable of exercising its power upon the lesser and imperfect metals, and that by a fruitful or profitable amending and correcting them: But this is a thing that God reserves to Himself, as posited in His alone good pleasure, whose Grace and Favour we must with a patient expectation wait for: Mean while we may lawfully enjoy this most excellent medicine, which being a most certain Argument of the verity and power, arising from such a notable Art, doth abundantly serve to stop the shameless mouths, and break the mischievous Teeth of all *Farmers' Asses*. But yet notwithstanding some or other of them may haply spue out some poisonous stuff out of his shameless mouth, and say, With what right can I impose the name of *Universal Medicine* upon this Medicine of mine, seeing that I do not in the least deny, that it is not available to bring me any benefit out of the metals, but can only heal the Diseases of the Sick: Whereas the Philosophers do on the contrary attest, that their Universal medicine hath such virtues as are wont to transmute the lesser or meaner metals into Gold, and that which most exceeding profit.

For answer to such as these, I say, that although this medicine of mine which is here treated of, hath not hitherto brought me any profit by the melioration of the metals, yet it demonstrates it self to be universal, and to be worthy that same Title; for I have been hindered through want of time and other lets (as I said afore) from hitherto bringing it unto perfection and fixation. And I pray who can tell what God will be pleased to vouchsafe in process of time. A new-born Infant cannot well be upbraided (if wanting wit and judgment it does not attempt and effect some great matters) and be on this wise twitted. Ho! it is not a man, 'tis beardless, it understands nothing, it lies along and cannot help it self, it has nothing but what they reach out unto it. Well, well, let the Infant but arrive unto its due age, and let its due meat and drink be administered unto it, and then in length of time it will attain to a requisite stature and strength, and will propagate and multiply its own kind. For if there be once the humane form, there will not proceed ought else thencefrom, but a perfect man. Just so stands the case with my medicine, which is exceeding like to a new-born Infant, whereto regard being had, according to a Philosophical manner, there will be no doubt, but that it will arrive unto a due perfection.

And now, the things which it doth even already perform, do all of them sufficiently argue and testify, that process of time both can & indeed must produce

thereout of some better thing; even as a good Parent wisheth for nothing more, than that (whilst himself is living) his Children may grow up to man's estate, and be happily married, and by a new Offspring preserve his Name and Stock, and yield their help towards the multiplication of mankind, and he himself is wondrously joyed in his Grandchildren: But yet in the mean while he cannot be at all certain that his Life shall be so long prorogued, as to have a fruition of so much happiness, and therefore must commit the whole affair to God's pleasure, and patiently wait upon him; and see what that Omnipotent Creator (who indeed shewed unto *Moses* the Promised Land, but granted him not so long Life as to enter thereinto) will do with him and his; even so hath the Lord shewed unto me the Promised Land, but whether or no I am worthy to arrive so far as to enjoy the pleasant Fruits thereof, GOD only knows; His merciful bounty hath bestowed upon me in my old Age a Philosophical Infant, which doth exceedingly rejoice me: But yet verily am I utterly ignorant whether or no He will vouchsafe unto me so long a Life, as to see the virile or man-like age thereout.

Therefore, like as a Father, unto whom in his old Age the Divine Bounty hath vouchsafed an Heir, tho' (haply) he well knows that the said Heir cannot possibly arrive unto man's estate, during his (viz. the Father's) life, yet nevertheless he is exceedingly joyed, in that he hath an Heir to keep up his Name, and which will in time trace his Father's footsteps (viz. though haply I know that my Life will not last so long, as to be a Possessor of the same, in the state of its being advanced unto perfection. However, I doubt not but that God will stir up other nursing Fathers to this tender Infant, that being educated and nourished by them, it may arrive unto a Man-like strength, and unto virile powers and virtues, and may become serviceable to the advancement of the Honour of God, and to the succouring of many Thousands of sick People. The way of attaining this, I have, according to my simple judgment, too and agen, and peice-meal as it were, opened and revealed in divers places of my Work, viz. how it may be most commodiously effected, and therefore I judge it needless to treat thereof any farther in this place.

Of the Nature, Form, Properties, and admirable Virtue and Efficacy of my True Aurum Potabile.

AS touching the form of this same new-born Infant, I would have the well-minded Reader know, that it is like unto a poor, naked, tender Babe, of no splendour, of a simple aspect, but yet carries within it self all the colours of the whole World, which by how much the older it grows, so much the fairer colours doth it yield. The Fire affords it nutriment, and clothes it with Garments of various colours, and makes it strong, fair, noble, and potent, inso much that it may not undeservedly be termed its Father. Being born out of the Earth its Mother, it

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loves it, and useth it for its nutriment, until that arriving unto full years, it becomes like its Father the Fire, and leaves its Mother the Earth, and like a Lord of full age, bears rule over its Hereditary Possessions. But during its Minority and Infancy, all its actions are look'd on as childish, but yet so that presently (or even now) appears what kind of notable man he will be, making good that Proverb; *Virtus matris quod vult vitia manere.*

*That which will a Nettle be,
Stings betimes, trust you me.*

For seeing that a new-born Infant doth abound with so much virtue, as to be able to do so much good, What would not he be capable of effecting, should he attain to a ripeness of years? It will be therefore worth while to hear and see what virtues it is able to exercise upon Vegetables, Animals, and Minerals; and first, we will treat about the Vegetables.

By what way a Trial is to be made, whether or no this Aurum Potabile, or Aqua-vitæ of the Philosphers, be a most high Medicine for the Vegetables.

EVERY body knows, that the Vegetables which are to grow up, and be multiplied, must be also nourished. This nourishment now is nothing else but a sulphureous Salt, whether it hath its Rise from the Vegetables, or from the Animals, or from the Minerals; for 'tis all a case to the Vegetables, from whatsoever it proceeds, so that they have but their nutriment, by which they may grow, be encreased, and be multiplied. The Husband-man useth the Dung of any Cattel or Sheep, to dung his Lands withal, that the Seed sown in the dunged Earth, may thence extract the Salt, and convert it into its own nutriment, and so grow up, and be encreased; and besides this kind of Dunging he knows none.

But the true Naturalist makes use of the Excrements of other Animals, yea, and the Minerals themselves too, for the dunging of the Ground; concerning which thing, I have written at large in my other Writings, and especially in my *Miraculum Mundi*; and therefore there's no need at all of making any farther repetition of the same here. Forasmuch therefore as my *Aurum Potabile* is also a sulphureous Salt, but yet far stronger, and more efficacious than that which lies in the common Dung of Beasts and Cattel, and so consequently promotes the accretion or growth, and multiplication of all the Vegetables in a wonderful manner. I have judged it a thing worth while to set down in this place the use thereof in the melioration of the Vegetables, that so it may be evidently demonstrated, that this my Potable Gold is the most excellent Medicine for all the Vegetables, and that their Particular Medicine which doth first proceed from the Dung of Sheep and Cattel, doth afterwards display its virtues by an *Universal* operation. For if the *Dung* of Horses, Cows, and Sheep (as 'tis barely *Dung*) could but succour Men and Metals, like as it brings a medical or helping succour unto the Vegetables, then might it by the same reason be likewise called *Universal*.

But whereas it is an helper to the Vegetables only, and hath no conjoining familiarity with the Minerals and Animals, therefore is it rightly and deservedly to be referred to the order of particular Medicines, which are helpful to the Vegetables only. But yet notwithstanding, the Salt being extracted out of those sorts of *Dung*, and converted into Saltpetre, (which is a thing easily done) doth then admit of being transmuted into a *Universal Medicine*: But now, afore such a Transmutation be made, it does not exceed the order or bounds of Particular Medicaments. But this *Aurum Potabile* of mine merits the name of a true Universal Medicine, as being not only a most high Medicine for the Vegetables, but also for the Animals and Minerals too, and this shall be perfectly demonstrated as follows.

You must get some Vessels made of the best Earth, and strong, and such as being well burnt in the Fire, become like a Stone. And amongst such Earths, the *Coler, Siburg, Waldenberg*, and other such-like natured Earths, are the fittest for this Work; let them be made very thick, and such as will not imbibe any Water. If you want such as these, cause then your Vessels to be made of Glass; for every porous kind of Earth, though it be glazed over with Lead-glass, yet it is not so fit for this kind of operation; therefore you must of necessity provide your self with fit and convenient Vessels, and have a most especial regard to this admonition. Let such a Vessel be a span long, or high, or deep, and let it have the same breadth or largeness, and let its bottom be perforated with some small holes, like as those Pots which are made for the keeping of Flowers in are wont to be: The Pots being thus prepared and filled up top-full, with clear and lean Sand, you may put or plant therein three or four Seeds of such Herbs that you have a mind to plant, that so if haply one of them comes not to good, the second, third, or fourth may. When the seeds are on this wise put in the said Sand, and shall have been moistened with our Universal Water, the Pots must then be set abroad to the Sun and Air, that so the Seeds may spring up and grow; which seeds, if good, and not too old, will in a few daies time, grow up out of the Sand, as if they had been in any other fat Earth. Now, when they shall have sprouted up so high as a fingers length, you must leave in your said Pots two of the biggest and strongest stalks or sprouts, and pluck up the others, lest they should impede each others growth; and you must let them have room enough in the Pot to grow.

This Vessel thus filled with sand, and planted with seeds, is to be set upon another strong Dish or Platter, and which is made of the like sort of Stone-like Earth, that so if that medicinal water should happen to penetrate and desfil through the sand, it may not be lost, but being saved, may be again poured into the pot-full of sand. Moreover, you must diligently take heed that no Rain-water fall therein and wash away that medicinal water, and so take from the Herbs their nutriment. The sand must not be too much wetted, but lie always somewhat moist, lest by being quite dry, or too wet, the whole Work be corrupted by either the excess or defect of the due temperament: All things here prescribed being duly observed, the Herb springs up in a short time, and bears Flowers and Fruits sooner and better, than if it had grown in other dunged Earth. The Colours become fairer, the Odours will be stronger, the Virtues also will be greater, and these Herbs do likewise long

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ger keep their virtues, and are not so corruptible as others are. After that all the humidity which you poured first on, shall have been consumed by the Sun and the Air, so as that it is plainly vanished, there must some other Rain-water (wherein a little of that potable Gold shall have been dissolved) be again poured on upon the Sand, that so the Herb may have its due supply of nourishment, so long as it shall be a-growing, for the whole World knows, that there does not grow ought at all out of sand, which is only wetted with bare Rain-water.

Likewise by the help of this Universal Medicine all kinds of Herbs and Plants may be made apt to germinate and grow even in mid-Winter, and may be at any time amended, if so be that dissolved Liquor be but poured on upon the Roots. So will they be sooner ripe, and yield their Flowers and Fruits much speedier than those that are dunged after the common way; yea, and more too. I say, that as to their virtues and efficacy, they are to be preferred far before the common ones. The bare simple Universal Medicine is wont to shew so much efficacy, as is here mentioned: But now some metallick Ferment being added thereunto, makes it far more efficacious; for by means thereof, the Herbs acquire greater and better virtues.

If there be adjoined therunto an aureous ferment, the Herbs will not only get the virtues of the Gold, but will also appear spotted here and there, in their Leaves and Flowers, with golden spots like little Stars, and will wonderfully please the sight by their delicate aspect.

If a Silver Ferment be thereto added, the Herbs will be impregnated with Silvery virtues, and be painted with silver spots as they grow. The Herbs being by this means bettered with a golden Ferment for the Hearts, and with a Silver Ferment for the Brain, do with a more admirable efficacy succour those Members. And if the great ones of the World did for their Health's sake take care for the nourishing such Herbs as these in their Gardens, there's no doubt at all to be made, but that they would thenceforth obtain most great benefits. For, besides their wonderfully delighting the sight with their beauteous and delicate, and besides their admirable virtues, in which they far excel the common Herbs, they do likewise bring this exceeding great profit, viz. they may be made use of instead of my *Aurum Potabile*, which perhaps some great men may be averse from taking, through the persuasions of their ignorant Physicians, who most an-end do, by reason of their foolish stupidity and ignorance, shew and bite at such kind of eminent Medicines, and divert their Lords and Masters from the using of them, as if they were so many Poisons.

If therefore (to free themselves from that needless care) they did but make use of these Herbs instead of my Potable Gold, they would however, by the help of such Vegetables, enjoy so much of the efficacy of my Potable Gold, as to keep themselves in good Health, or to recover it, being lost.

Besides too, the said Potable Gold may be most commodiously and fitly applied to the use of Mankind, not only by the help of the Vegetables, but also of the Animals too, and that on this wise.

Hens (or Pullets, &c.) are to be a while nourished with Oats, Barley, Wheat, or other kind of Grain, macerated with the Liquor of that Universal Medicine; and being nourished therewithal, they will by concoction or digestion transmute those Medicinal

Virtues into their Flesh, and so be far more efficacious and nobler than the flesh of other Hens or Poultry. The Dung likewise of such Fowls may be saved, and mixt with Sand, and Herbs be therein planted, which by this means will be rendered better than the common Herbs, because they assimilate to themselves the Reliques of that Liquor which the Fowls did not consume, and by digestion transmute into their Flesh, and so do convert it into their proper juice, so that there is not any thing at all of that Liquor lost, but the whole of it passeth into most notable profit.

Verily this is an excellent and admirable Transplantation of an Universal Medicine, into the Vegetables and Animals, the which the tender great ones of the World may make use of with the greatest security.

Such now as these (viz. the great ones) seeing that this Universal Medicine of mine doth not at all hurt the tender seeds of Herbs, or the young Pullen, but rather bestows on them a greater efficacy and strength, will doubtless be induced to believe and understand thus much, viz. that this same Medicine will in no case prove hurtful unto Men, who as to tenderness, cannot be like the seeds of Herbs, or like tender Pullen.

If this Medicine be of so great an efficacy as to be capable of transmuting some venenate Mineral, such as Mercury is, into true Gold, and that in a few hours space, as we shall see and hear by and by, it must necessarily follow, that it is not infected with any malignity or venom, for the malignity of one thing does not amend or correct the malignity of another thing, but rather makes it worse.

From hence it is apparently manifest, that that Potable Gold does not at all partake of any malignity, but is a most wholesome Medicine for both Vegetables, Animals, and Minerals: Which thing, if any one will not give credit unto, or shall not be capable to understand the same, I know not what other help to afford him; for minding my own affairs, I have propounded and set down all things out of a good and sincere mind; if so be that any one hath ought that is better, let him produce it out-right, and not despise those things which he does not understand, lest haply he hazardeth his good name, as that convicted Lyar *Farmer* hath done, and be derided, and made a laughing-stock to the common People.

But *Farmer's* setting upon me with his calumnies and slanders, hath ministred unto me an occasion of answering, and of defending myself: Upon this occasion of my replying, there have sprung up, and come forth to the Light most excellent Secrets and *Arcana's* of Nature. Surely I should never have so openly published my knowledge in natural things, but should have lain hidden in quiet, had not that Blood-sucker and secret Murderer thrown me out of my tranquility by his venomous biting.

But that it may not seem a thing strange and absurd, that I write, that this *Aurum Potabile* of mine doth induce into the growing Herbs a golden Nature, it seems a thing expedient unto me, to confirm the business by some true Histories.

In the *Hungarian* and *Transylvanian* Chronicles, it is mentioned, That in those Countries, in which the soil or ground hath every where about in the Mountains, an aureous or golden nature, and from whence, for this Thousand years, even to this very day, much Gold hath been, and yearly is digged out by the Gold-Miners,

Miners, and been molten, and coined into Moneys, there have been oft-times found such Vines, as have not only had their Leaves, but also the Grapes too gilded over, as it were, with Gold, just as if they had been artificially gilt. Nor is this an old Wife's Fable, but a thing most certainly true, and which many have affirmed unto me for a most undoubted Truth, some of which Persons have had their Habitations in those places, and other some of them do even live there at this day. About some six years since, when I lived in *Franconia*, it chanced, that a Vine to whose Roots I laid Gold opened, and reduced into its first Ens, produced Bunches of Grapes, whose Stones were gilded: Which Story I have mentioned more at large in the Consolation of Navigators. And but very lately a certain Nobleman of *Hungary*, told me for a most certain Truth, that not far from *Cremnitz*, being one of the Mountain Cities of *Hungary*, a certain Husbandman found in his Vineyard a piece of corporeal Gold, above an Ell long, grown out of a Stone, and twined round about the said Stone, a little piece of which was given me by the said Nobleman, because of the Novelty and Wonders thereof.

But put case that this were not true, which notwithstanding is very true and indubitable, as being a thing known to the whole World, that such gilded Grapes are often found in *Hungary* and *Transylvania*; yet however, those things that I have mentioned, and attributed unto my Potable Gold, are most assuredly true.

Nor can I alledge any other cause for these gilded Grapes and Leaves in *Hungary*, but this, that the Earth there is impregnated with golden vapours, or with the not yet hardened and coagulated first Ens of Gold, and that aureous water being mixt with the Rain-water, insinuates it self into the Roots and from thence ascends up into the Boughs and Grapes, and in them manifests it self, and becomes visible.

Even thus also is it with my *Aurum Potabile*, (which is like to a spiritual Gold) if it be dissolved with common Rain-water, and be therewithal commixt, and the sand (in which the seeds of the Vegetables were sown) be moistened with that Liquor, the nutriment is attracted out of the sand by the Vegetable Herbs, and being attracted, renders them partakers of an aureous nature: And this experience testifies to be a thing most true; nor can it be otherwise.

By these few things here spoken, every body (as I suppose) will sufficiently enough perceive, that my *Aurum Potabile* is a most high Medicine for the Vegetables. Now we will likewise prove by some few but yet clear and convincing Arguments, that it is a most high Medicine for the Minerals too.

Of the Use of my Aurum Potabile in the melioration of the Minerals.

AS concerning the bettering of the Minerals by my Potable Gold, thus stands the case: It is capable of exhibiting to those that are inquisitive after the transmutation of the Metals, and would make trial of the same, some most exact proofs of

the possibility thereof, both in the moist and in the dry way.

In the first place, it is behovelful for every one to know, that the said *Aurum Potabile*, when brought to its due perfection, and such as my self know, hath the resemblance of a bright and clear water, is of a burning, hot, and fiery taste upon the tongue, and gives out a sulphureous, but yet pleasant odour.

But some may say, What can any such virtues be in a clear Water? What reason have you to call it Potable Gold, for that ought to be yellow or red? To such an one I answer, That in the whiteness is a redness hidden, which is not discernable in its tender Infancy; but when by the help of the Fire it arrives to a greater age, then it discovers it self, and shews forth its comeliness and excellency together with most eminent strength and efficacy: For thus say the Philosophers, *Unless you make our Gold white, you cannot make it red.* And in another place, *If any one knows how to destroy Gold, so as it shall be Gold no more, he hath arrived to a most great Secret.* And again, in another place, *Our Gold is not common Gold, but Gold potential, not formal (or Gold in power, not in shape).* Such Sayings and Sentences the whole Troop of the Philosophers is full of; by which it is exactly demonstrated, that the true *Aurum Potabile* ought not to be presently red, as to the outward view, but that it merits this Title, if there be but only that golden and red virtue and efficacy lying hidden in its internal principle. For if this whiteness did not cover over an hidden redness, it could never possibly become red. Now my *Aurum Potabile* being coagulated by the means of fire, and reduced to a stability in the fire, is turned into a stone of a blood-red colour, and yields not in the melting any corporeal Gold, unless a metallick body be adjoined unto it, into which the Spiritual and Philosophical Gold, betakes it self, that so cloathing it self with a body, it may become Corporeal.

This potable Gold of mine is, *Lac Virginis*, or the *Virgins Milk*, which is coagulated with a small heat. This *Coagulum* passeth into (or becomes) the *Dragon's blood*, which being coagulated, must necessarily yield the constant or durable *Salamander*. I confess, that hitherto I have not prepared it; nor had I any opportunity to prepare it, but remain contented with my *Lac Virginis*, as with a most excellent Universal Medicine, patiently expecting what the Divine Grace will in time to come bestow upon me.

But that I may proceed on to shew that my *Aurum Potabile* doth likewise heal the Minerals, amend them, and make them golden, I will here set down some waies of doing the same both in the dry, and in the moist way.

The manner of trying (by the moist way) whether or no my Aurum Potabile be a true Philosophical Volatile Gold.

TAke of my potable Gold ʒj. and ʒj. or ʒss. of common Quick-silver, put them into a strong Glass, and so finally, as that it may be half full with this matter. (NB. The glass must have a round

bottom, whether it be a piece of some small Bolt-head, or of some small Pewee; that so the Mercury may gather it self into one Ball in the bottom) and place your glass, with the potable Gold and Quick-silver, in Sand, to the height of the Liquor, then heat it, and leave it for about one hour in a sufficient heat, that the Phlegm being exhaled, the potable gold may stay behind in the form of a white Salt: This done, pour again upon that Salt so much Rain-water as it evaporated in the boiling, or fill the glass so full with Rain-water, as it was before full of the *Aurum Potabile*, that so lying a while upon the said Salt, it may dissolve it, which is hereby again turned into the same potable Gold, having the same colour, the same taste, and the same virtues as it had before. The Mercury being freed from the said potable Gold, which is to be poured off, is found to be hard, and fix in the bottom like the best gold, and of the same bigness or quantity, as when it was put into the glass. NB. If by some error committed the *Argent-vive* be not enough tinged and brought to a due degree, but hath gotten some blackness, it is to be taken out of the glass, and put into some little Crucible, and to be heated red-hot with live Coals, that so it may receive the due golden colour; which said colour it will get, and will be like the best Duckat Gold, and will abide good and firm in all trials. But that *Aurum Potabile* which was used about the coagulation of the Quick-silver, may be often made use of about the same labour; but yet you are to note, that you always take each time less and less Quick-silver to this operation, because the potable Gold doth in each of those succellive labours lose by little and little its virtues.

This way of coagulating of Mercury may be likewise used about the coagulation of other Minerals and Metals, provided that the said metals be reduced into thin Plates or Leaves, and so put in; for being put in too thick, they cannot be totally digested in so short a time by the *Aurum Potabile*, into the due degree of Perfection, but remain (as their inside part) crude, and therefore an accurate regard is hereunto to be had. If this Labour be rightly done, the Metals will be thoroughly transmuted into pure and good Gold, and that of the same magnitude, figure, and form they were of when you put them in; but yet one metal is sooner transmuted, and more commodiously than another, according as it shall be of a nearer affinity unto gold. NB. If the Metal be not in a due manner proceeded withal, but be as yet black when it is taken out of the potable Gold, it is then to be well heated red-hot, that so it may get its golden colour. And if there be even yet any doubt left, let him put it in $\frac{1}{2}$, and purge it by the Cineritium, or the Cupel, that so he may be assured of having true gold, and may be freed from all kind of scruple and doubt; for neither $\frac{1}{2}$ nor $\frac{3}{4}$ will take away ought therefrom; which thing the proof it self will most clearly demonstrate.

The manner of making a Trial, by the dry way, concerning the Transmutation of the Imperfect Metals, by my Potable Gold.

TAKE of my potable gold, or *Lac Virginis*, $\frac{3}{4}$; and put it in a glass dish; which done, and the dish placed in sand, evaporate all the humidity, until there remain about almost half an ounce of white Salt; put this Salt in a Crucible, with $\frac{1}{2}$ lb. or 5 fs. of the Plates of Silver, or Copper, or Iron, for Tin & Lead need not be laminated: Place your Crucible, together with the Salt and the Metal, amongst Wood-Coals, and the Salt will presently melt like Wax, and penetrate all the whole Metal, and transmute it into gold; and this operation is done in one quarter of an hour, or half an hour at the utmost. The molten Salt being poured forth out of the Crucible, you will find in the same Crucible the Plate of the Metal, of the same quantity and shape it was of when put in, and thoroughly transmuted into pure good gold. The Tin and the Lead will be molten into Granes, as being of easie fusion, which Granes will have the nature of pure good gold. If the Crucible should be too much heated with too intense a Fire, it may also happen, that even the $\frac{1}{2}$, Copper, and Iron too may melt into granes. And this I thought good to inform the Studiosus of.

These (O thou Lover of Arts) are the too Examinations and Proofs of my potable gold, and of trying it both by the dry and the moist way, which if thou shalt rightly perform, thou shalt not erre from the mark. But now I must needs confess, that this Transmutation is not gainful, and I have already said before, that my divulging of all these things is only to this end, *viz.* visibly to shew the possibility of the Art. For although that the gold gotten by these proofs be true, and purely good, and passing all the usual Trials, yet nevertheless it brings no profit, because this *Aurum Potabile* requires so much expences, (as for it arrives unto this degree of power) as that the gold gotten by the benefit thereof, cannot countervail the same. Nay, if it should be somewhat profitable in this way, yet would that man do much amiss, that should waste away and employ so kingly a Medicine for the getting of a little Gold, seeing there are other waies to get Gold by. And verily, it would be a great sin and shame for a man to consume such a most excellent and eminent Medicine for a little mony's sake. Neither is it for this end, that I have thus mentioned what I have here said, *viz.* to use it about the making of Gold; for my aim is only this, that all the world may see that there are men to be found, even at this very day, upon whom the Divine Grace hath bestowed the Art of preparing and making most excellent Medicaments. I do not envy, that other men should learn something out of my Writings, and take the opportunity of advancing this Work to a farther perfection: But I would not have the impious ones at all to persuade themselves that they shall obtain this Instrument to do evilly, and to exercise their wickedness by; God, who knows what He has to do, will not do those things which are (perhaps) liking and pleasing to our fancies. I can every hour demonstrate the truth of what I have written, with which demonstration I self satisfied.

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I can easily conjecture that various men will pass various censures upon my Writings, but this is what I am not able to prevent; nor indeed do I much care, but I do herein comfort my self, in that I have written an undoubted Truth, and can defend it even before the whole World. I can withal readily guess, that some or other may object against me, and say as followeth, *viz.* That my Potable Gold is a bare solution of common Gold, which being adjoined unto the other Metals, is by them precipitated, and so reduced into its former body; and this cannot be said to be a true transmutation of the Gold. To refel this objection therefore, I demand, Whether or no the common corporeal Gold can be dissolved without some corrosive Liquor? For this *Aurum Potabile* of mine is void of all corrosion, and is a fiery water, most extremely contrary unto all corrosives: Seeing it is nothing else but fixed Nitre, or a sulphurous Salt, betwixt which Salts verily, and common Gold, there is no familiarity at all; nor are there any such virtues therein, as to dissolve the Gold: But put case it could so be, that the body of common Gold should be dissolved with those fixed Salts, and that by such a Solution it should dissolve (or make) my *Aurum Potabile*, verily it would necessarily follow, that such a solution of Gold would be of a yellow or red colour. But now 'tis not so with mine, for my *Aurum Potabile* is so clear and bright, as that it far exceeds the bright transparency of even Fountain-water it self: Besides too, the solution of corporeal Gold tingeth the hair, hands, and nails with a black colour; but on the contrary, my Potable Gold does not so at all, and therefore justly and deservedly, it both may and ought to bear the Title of *Philosophical Gold*; for all the Philosophers that have been true Possessors of an Universal Medicine, do confess in express words, *That their Gold, or the solution thereof, doth not at all colour the hands, by which Character and Sign they distinguish betwixt the vulgar and philosophical Gold.*

From hence it necessarily follows, that my *Aurum Potabile* is prepared of the true Philosophical Gold, seeing it does not tinge the hands with any colour.

But put case that a Solution of common Gold should be made by the help of some *menstruum* that is not corrosive, (but such is not my solution) yet notwithstanding, it would not thoroughly tinge the Imperfect Metals and common Quick-silver in digestion with them, and transmute them, but would cover over (as it were) their Superficies only with the colour of the precipitated Gold, like as is wont to be with all other solutions of Gold, and such a powder performing the same effect, may be prepared of common gold; the way of the Preparation thereof I have delivered in my Writings. Silver being therewithal laid over, is as well gilt, as if it had been done with Gold and Quick-silver: The Superficies therefore is only gilded over, but the body of the Silver it self is not at all transmuted, but abides in its former state. So Gold dissolved in Spirit of Salt, doth, by the help of the Vitriol of Venus, gild over the Superficies of any Iron, but the Iron retains its Irony property and nature: If to such a solution plenty of Water be poured, and *Argent-vive*, Tin, Lead, Iron, or *Bismuth*, be put thereto, the gold is wont to precipitate out of the corrosive water, in the form of a porous Sponge, and to adhere to the metal therein to put. Now, as soon as ever the water is shook about, the precipitated gold dispereth it self abroad

in the water, like a troubled muddiness, and the Metal is the same as it was before putting in, without any transmutation at all.

Moreover, if any Solution of common gold could tinge the whole body of the imperfect metals (but yet this can never be) it would necessarily gild over the external Superficies of the Metals, and especially the external Superficies of pure Luna, when rubbed or smeared over with the same; and even this now my *Aurum Potabile* does not do; but if it be smeared upon Silver, it colours and paints it with all kinds of colours, and as infinite as appear in the Peacock's Tail, and in such wise too, as that they cannot be easily rubbed out; and these Colours are an undoubted Argument, that this my *Aurum Potabile* is not the vulgar Gold, but the secret Gold of the Philosophers.

All these, and other the like Objections, I could most easily prevent by due and sitting Answers, if they should be objected against me; but I think no body will be so audacious, as (without producing any better things) to oppose himself against those things which in the judgment of the whole World are accounted for good.

Of the Use of my True Aurum Potabile in Medicine.

TO what purpose should I make many words of the most great Efficacy and Virtues of my Potable Gold in Medicine? I do not deem it a thing necessary to write a large Book concerning them, for such kind of Writings do many times more hurt than good: For there is such an odd custom of Writing so prevalent, as that some men blush not oft-times to ascribe such great virtues to some coloured Brandy-wine, as can hardly be attributed even to *Aurum Potabile* it self. I confess, that many times there lies more Virtue in some very vile mean thing, than in precious and sumptuous Pearls.

But seeing that every one cannot discern the true from the false, and is constrained (on the contrary) to give credit unto those things which he draws in by his Ears, it cannot possibly be, but that he erre from the Truth, and often chuse the evil instead of the good; which defect is easily helped by making trial, and proving them, for this way is wont to try the Truth of things.

Should I but describe in an accurate manner the Virtues of my Potable Gold, it would fill a large Volume: And this is not my intent in this place, but (God permitting) it shall shortly be effected in a little Book, wherein shall be comprized many other of my best Medicaments, and shall shortly come abroad under the Title of *Glauber's Pharmacopoeia*: And in this place I will in few words hint out the Use of my *Aurum Potabile*.

Therefore, forasmuch as my Potable Gold is (as I have already frequently repeated) a concentrated Fire, and reduced into a liquid form, and all its whole Essence may be said to resemble nothing else but some tender penetrating Fire, yet void of flame, every one may readily conjecture what it is helpful for, and what use it is of in Medicine.

Amongst all the Elements, the purest, subtlest, most penetrative, and most efficacious, is Fire, and this is granted by every body; for the force of the Fire, viz. its heat penetrates even the most compact bodies, as Metals, and Glafs; nor is there any thing that can stop its way; the Water, Earth, and Air are easily shut out. The Omnipotent God Himself is compared with Fire, from whom all things receive Spirit and Life, and without whom nothing can live or move it self, for without him, all things are dead, hard, and cold; as appears in the bodies of men and other Animals, which being alive, are alwaies hot, but being dead, become more cold than any Ice.

Therefore, as long as that small spark of Life in Man, and other Animals, is fed and nourished with its due Food and Drink, so long also doth it attract its nutriment, and continues in its vigorfulness.

But as soon as it is destitute of its nutrition, and that it be taken thencefrom, the Life doth presently begin to be debilitated, and to fade, like as a kindled Lamp, if Oil be not poured thereunto, doth at last go out, and extinguisheth.

Seeing now that the Life of a Man is a meer fire, and is fed and sustained by a suitable Food and Drink only, like to a Lamp, which (without the pouring on of Oil, and without Air, without which no fire can burn, nor any Life live) cannot conserve its light. Some or other may demand, What the reason is, that such men are so easily seized on by Diseases, who have no want of the best Food and Drink, and which too is most fit for the sustaining of Life? Hereto I answer, That in such kind of men, the grofs, crude, tenacious, and cold humours do shut up the passage to the point and spark of Life, whereby it is deprived of the nutriment, being hereby kept back. For an Example of which, Take a kindled Lamp, in which the Wick or Cotton is furred and clogg'd up with the Dreggs of impure Oil, whereby the Oil can have no farther access to the burning Flame; and hence it comes to pass, that it goes out, and vanisheth, and dies, though there be store enough of Oil. So likewise is it with an old Tree, though there be store of Dung thereunto applied, yet the vegetation is not alwaies, and for ever, but all things die at last. Now, the crude, grofs, and clammy humours insinuating themselves into the Roots, do hasten on this death, and the Roots being stop't or clogg'd, the due nutriment is withdrawn or withheld from the Tree, like as is wont to happen in Men, and in burning Lamps, as we said but now.

All things have their natural Causes, the which thing God Himself hath doubtlesly so ordained and implanted in Nature, that all things in their order halting on to their destruction, nothing may be found wholly constant and stable in natural things; but be all subject to decay and death, and that Eternity alone, and Divine stability, (or the durability of celestial things only) might be laid open.

Bright clear Waters, having its course through Channels and Wooden Pipes, doth, after many years time, at length fill them with Dirt, stops them up, and bars up its own way and current. This is the Operation of the clear and cold Water of Fountains; the hot Baths do it far sooner, as appears in the *Aqueducts* Baths, and others, in which the *Aqueducts* and conveyances for the Water are to be frequently opened and cleansed, whereby the Water may have the freer passage. But those Waters, which being hot, do (when cool) presently let fall their faces in the

Vessels, and stop or furr them up, do most speedily of all shew this same operation. The same is also done in open Vessels; if, viz. the clear and transparent Water of Fountains be several times heated in a Copper; and be again so often cooled, there doth then at length stick on to the inside of the Copper a tenacious sliminess, which at last is turned into an hard Stone.

If now the pure and bright Water of a Fountain effecteth such an operation. What, think you, would that Water do, which in its own nature is troubled or muddy, thick, saltish, and slimy. Hence it is that not only new-press'd Wines, or that thickish, muddyish Muff, do let fall their faces to the bottom, and falten their Tartar to the sides of the Barrel, but even the old Wines do likewise do the same, but not so much as the new ones do.

Now then, seeing that such kind of troubled drinks are used by men for nutriment, it is clearly necessary, that (the internal Bowels of the body being stop't by their dregginess) their nourishing property of the Life must withdraw, like as the feculent Oil withdraws from the light of the Lamp: For all those things which a man feeds upon, and daily drinks, do in process of time stop up the passages of the internal bowels and conveyances in the body of man, and so despoil the vital Fire of its nutriment. Therefore by how much the more this nutriment of the Life is withdrawn, so much the sooner is the light or vital Fire extinguish'd, and the cold and darkness death approacheth the nearer, and becomes superiour. From hence arose that old Proverb, *Eat such things as are well cook'd or baked; Drink such drinks as are clear; Speak such things as are true, that so you may be long-lived.*

But now some may say, I will therefore shun troubled drinks, and feed upon well-drest and well-prepared Meats, that so by shunning the way for Death's entrance, I may enjoy a long-life. I confess, 'tis well said, for sobriety in meat and drink, and the shunning of grofs and crude meats, and troubled drinks, do much help to conserve health: But yet it does not follow, that he shall not be at length subject to Diseases, nor die; for there is no meat that is so well cook'd, and no drink that is so clear, but it carries with it its hidden faces, with which the internal Vessels may in a longer process of time, be stop't up, and Diseases introduced, even as we shewed but now, by an example drawn from Fountain-water, which in process of time stops up its own passages: And by the same reason too must those Trees that are in the highest tops of the Mountains at length die, when (though they are nourished with most clear Rain-water) their nutrition is withheld from them by the stopping up the pores of the Roots.

But yet I do not say that an Oak, or some other wild Tree, in wild places, which is nourished only with the Rain-water, and the Leaves which yearly fall off, dures no longer than some Fruit-bearing Tree does, which is dunged and nourished in the Gardens with singular care and labour: No, for it is known, that an Oak doth many times endure and live a Thousand years; whereas on the contrary, such a rilled or tenderly-kept Tree scarce attains to the Hundredth year, and this is to be imputed to the diversity of nutriments. The Stag in the Woods, and the Crow in the Air, live above an Hundred years, but being caught and finely fed, they scarce live Fifty years. A man that lives barely upon Bread and Water, will doubtlesly prolong his life to far more years than if he

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used delicate food and drink; and this is a most manifest thing, and yet men lay it not to heart, but by enjoying too great a plenty of delicacies, they burthen Nature with too great a load, from whence obstructions of the bowels do arise, and a way laid for Diseases to enter in. A Tree that is dunged with too much Dung, gets to it self, together and at once, too much fatness, and this choaks up the Roots and hinders nutrition, whereby the body and boughs thereof cannot be supplied, and so consequently Death must enter in, and put out the Life of that Tree. What Counsel now? You will haply say, If that obstructions be the principal causes of Diseases and Death, are there no Remedies, by whose help such-like obstructions may be prevented; or (if they already are made) be wholly removed and taken away? Yes, I say, that both may be done, viz. a timely prevention, and also a thorough abolition of them, when they have gotten head; and this to be done by such kind of Medicaments which are friendly to Nature, and contrary unto the things from which those obstructions and contempitions have their rise; for cold, tenacious, impure, and watery humours must necessarily be attenuated, mollified, cut, and opened by heating, attenuating, inciding, or cutting, penetrating, and fiery Medicaments; for daily Experience teacheth, that it is a thing clearly impossible for obstructions to be taken away, what kind soever they be of, without the help of warming and penetrative Medicaments. And amongst all those Medicines, these are found to be the most certain and most efficacious, viz. the volatile Spirit of common Salt, or of Vitriol, void of corroliveness; the volatile spirit of crude Tartar; the spirit of Urine, and of Salt-Armoniac, and other the like fiery Spirits, which do exercise their Virtues with most excellent success in the taking away of those kind of obstructions. But forasmuch as those volatile spirits do for the most part set upon and resolve such obstructions as are but beginning, and not as yet confirmed, but do not seize upon the more fixt and inveterate ones, as having not so much strength as to subdue and cast out them, for they are to be cast forth by their like, that is, by the more fixt Medicaments; which thing no skilful Physician will gain-say. The whole drift therefore of the business lies in this, viz. by what means such kind of Medicaments may be gotten, as by whose help not only the newly-risen obstructions, but also the inveterate and confirmed ones too, may be driven out of the body of man. Now, this cannot be effected by Herbs, and such-like natured things, as is sufficiently witnessed by this present Age, for no body that is subject to those kind of obstructions, is cured by the help of the Herbs, and such-like things. For after that the sick Patient hath a long time used the palliative Cure in vain, Death at length comes forcing in, and snatcheth him away after his licking in many Pots full of such stuff, which notwithstanding, by some good Medicine might have been easily prevented: For, I pray, how can it possibly be, that a cold, grofs, crude, and not well-prepared Medicine should draw forth cold and grofs humours, which should be heated, cut, and mollified? 'Tis just as if a man would melt one piece of Ice with another piece of Ice, and so reduce it into Water; but yet it will never bedone without fire or heat. And therefore a penetrating, fiery, living, and good Medicament, is to be applied unto those cold and tenacious obstructions,

to heat, extemate, and scowre them out; and the Syrrups, Conferences, and the cold, dead, and mucous or slimy Juleps should be removed.

Verily, I cannot sufficiently enough wonder, when I think upon the small regard that is had to the Life of Man, and how rashly and wantonly it is neglected, out of meer pure ignorance.

The present World is so blind and perverse, as that it neither will nor can believe this, though it be shewn it even with ones fingers: But yet this stubborn perverseness does not hurt any so much as it does the Innocent, who understand not these things, and are even constrained to credit those things only which they hear of; all other things they commit to Chance and Time, together with the rest of those errors, unto which, as likewise unto other abuses, this endeavour of mine, will (if God so please) some time hereafter administer some Redress.

We do therefore conclude and determine, that the principal and chiefest occasion and cause of Diseases and Death, are these slimy, grofs, tenacious humours, which by little and little seize on and stop up the internal bowels of the body, and withdraw (or withhold) from the radical humidity its nutriment, and so debilitates the vital fire more and more, and at length quite extinguish it.

Now, to remove and throw off these Furrings, there is no other Remedy, but that the passages of the internal bowels be kept open and clear, or that they be opened and unlocked, as 'twere, if already stop't up.

Now this thing my *Aurum Potabile* can perfectly effect; a better Medicine than which, and one more apt and fit to open all the obstructions of the body of man, 'twill not be so easie a matter to find; for it is in its nature a subtle, fiery, penetrating essence, warming all cold affects, attenuating the grofs, inciding or cutting the tenacious, and consuming, and drying up all humours and Wateriness; inasmuch that (being made use of) it doth inhibit and impede the generation (or growth) of all kind of obstructions, and by mollifying and inciding them when they are already generated, doth wholly take them away: Upon this account, by its corroborating the radical moisture and vital spirit, and preserving it safe and sound, it gets the prebeminence over all other such Medicaments as perform the same effect: Most worthy is it therefore to be called and esteemed the concentrated center of all Medicaments. For all those virtues which are found simple and divers or distinct in any of the Vegetables, Animals, and Minerals, and which do, by a Particular Efficacy, set upon Diseases; are concentrated in my *Aurum Potabile*, and being collected into one, do display all the virtues of those particulars universally, and therefore do these virtues discover it to be well worthy the name of an Universal Medicine: For this Medicament does not only exceed all other Medicaments in the most speedy operation of its virtues in the curing of the bodies of men, but also it plainly abounds with the same admirable virtues in the bettering of the Vegetables and Minerals; and therefore it is to be preferred beyond all others, and to be extolled with the highest Praises.

But now, if in case it should abound with far more noble and more efficacious virtues, (as to the taming and subduing the Diseases of men) then it already hath; and yet, on the contrary, should effect nothing

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by those its virtues in the melioration or amending of the Vegetables and Minerals, it could not possibly claim to it self the Title of an Universal Medicine, but would be rank'd amongst the number of *Particular Medicaments*, as tending only to the curing of the Diseases of Animals. But now, seeing that (as we said before) my *Aurum Potabile* doth most powerfully help not only men, in the Animal Kingdom, but likewise in all the Vegetables and Minerals, (out of the Dominion of which three Kingdoms, viz. Animal, Vegetable, and Mineral, there is nothing in all Nature to be found) and is a most high Medicine unto them all; therefore also the Name and Title of a *Universal Medicine* doth rightly and properly appertain thereunto.

The Philosophers do indeed ascribe thus much unto their Universal Medicine, viz. that it is able to heal all the Diseases of Mankind, and of the imperfect Metals; and their defects, and transmute the said Metals into perfect Gold. But concerning its being the supreme medicine for Vegetables too, that they are silent in: Why they silently pass this over, for my part, I cannot certainly tell, nor do I deem it necessary to expound the same: 'Tis sufficient that myself have proceeded farther, and do manifestly declare, that it will perform the same in the Vegetables too.

But yet I would that every one should understand me aright, and not count me so simple, as if I did liken or compare my *Aurum Potabile* with that great Stone of the Philosophers, which transmutes vast quantities of imperfect metals into most pure Gold by projection: No, no, I do not ascribe such great Virtues unto my Medicine, which it has not in it, but yet what I cannot tell, whether or no in process of time some better thing may not arise therefrom.

Farther too, the Philosophers say of their Medicine, that it can make variously-coloured precious Stones agreeable in any colour to the natural ones, out of all kinds of Flints. And now, perhaps some or other will require this of my *Aurum Potabile*; to whom I reply, as afore, so again now at present, that my *Aurum Potabile* is as yet imperfect, and is but in its infancy, which haply (being brought by the benefit of the fire unto perfection) will effect the self-same thing: But in the state which at present it is in, and whereunto myself have brought it, and 'tis at present constituted in, it is turned in three hours space in a covered Crucible, into a transparent Stone, red like blood, and resembling a Ruby: Of which, if a little bit be cast into molten glass, it makes it green, yellow, sky-colour'd, or even black too; according to the moreness or lessness of the quantity thrown in, or according as it is longer or lesser while kept in Flux. If now it operates these things, whilst unfixt and immature, any one may easily conjecture what it would effect, were it brought to a perfect constancy in the fire.

But it tingeth some sorts of the white Flints, kept for some hours in the Fire, with various colours, and transmutes Sulphur it self into most excellent Gold; which effect makes me more admire, than all the things that I ever heard of; and how this berided me, it will be worth the while, at present, to make mention of. I did once put some ounces of my said *Aurum Potabile* in a porcelain dish, as they call it, and placed it in Sand, that by the evaporation of the Phlegm, I might reduce it into a Salt: But whilst I was

absent, the heat of the Fire being too much created, a good part of the Liquor boil'd over the Dish, and I pit it self into the Sand; Now when I came to look to it, I perceived that the Liquor which boil'd over the dish had hidden it self in the hot sand, I took out the said sand, which with the *Aurum Potabile* was gathered into one body or mass, and I put it in a glass, and poured Rainwater thereupon, and placed the Glass in hot Sand; then I put the Water with which I extracted the Salt, into a Tunnel, together with the sand which was to have the salt separated from it, and so I separated by a Filter the Liquor thus impregnated with the salt, from the sand, which said Liquor pass through transparent, and unchanged in colour and taste: But now this sand, which was white at first, was clad now with a red colour, which fir'd in me an exceeding admiration, that this Potable Gold of mine should tinge the sand. This sand I put in a Cupel, and brought it to the Test, and it yielded me pure good gold; and this made me wonder the more; for verily it is a wondrous transmutation, and such as I never heard of.

Upon this account do I persuade myself, that a piece of Crystal may by a bare digestion in this potable Gold, be digested into a precious Stone, but I have never as yet tried it, but yet I will try it, if God prolong my Life.

Having made this trial with the sand, I presently conjectured, that the sand which I planted my Herbs in, and which I moistened with my *Aurum Potabile*, did not impart the full virtues, and all the qualities of the gold to the Herbs, implanted therein, but did retain the better part to it self, for its own melioration, and afforded but the smallest portion thereof to the Herbs: Nor did this conjecture deceive me, for upon this occasion I searcht farther into this business, and found it even so. And therefore, for the future, I used no more sand, for the communicating the golden virtues and faculties unto the Herbs, but instead thereof, I used Sawdust, in which I began to sow or implant the Herbs, for Wood is not endowed with such powerful or strong virtues, as to be capable of extracting the aereous Essence out of the Potable Gold, like as the sand doth.

Upon this account therefore any rotten Wood or even the Sawdust of Wood will be more fit for this Work of planting, than sand it self is, for the sand attracts to it self the most principal virtues of the *Aurum Potabile*, and thereby doth better it self, and bestows upon the Vegetables some small Reliques only. Had I not accidentally found this effect, the sand would have robb'd me of much benefit.

Moreover, this thing likewise, which is well worth the knowing, must not be passed over in this place, viz. that what herbs soever are (by the help of my *Aurum Potabile*) grown up, they are all of them greater and stronger than the common sort are, and do far exceed them in colour, taste, smell, and in all virtuous qualities. The reason is this, because the said *Universal Medicine* is a meer fire, and bestows its fiery vigour upon the Vegetables and Herbs: For it is a thing sufficiently known, that by how much hotter the Countries be, so much the more efficacious Herbs do they produce.

The Herbs that grow in the lower *Holland Countries*, are not comparable to those which the upper *Germany* (which is of a drier and hotter soil and that

air) doth produce, neither in odour, flavour, nor virtues. Nor doth High-Germany produce Herbs of that efficacy and bigness as *France* doth, which is of a hotter and drier air than *Germany* is; for in *Germany* Rosemary will hardly preserve it self safe from being injured by the Winter season; whereas in the French Defarts it grows so exceedingly well, as that it runs up like Trees, capable of defending one against the Rain, the which thing is not usual in the more cold Countries. Verily most excellent Honey is brought from *Marsilles*, (where the Bees suck it out of the Rosemary Flowers) into *Germany*, *Holland*, and other Countries, wherewith excellent Metheglin is made, and other Fruits and Flowers confer'd therewithal. But that Honey which the Bees are wont to gather in *Holland* and *Friezland*, about in the moist Meadows and moorish Fields, from the Flowers there growing, hath scarce any odour at all, but yet it is in goodness beyond that which the Bees gather from the strong-smelling Flowers of wild Trees, or from the Blossoms found in the barren Broom Thickets. By this therefore it appears, that there is a vast difference between the Virtues of the Herbs in this or that Country, and that such men are not a little deceived, who without any regard had, esteeming of all the *European* Herbs alike, do attribute to the Herbs of the Northern Countries, as *Denmark*, *Swedeland*, *Norway*, *Poland*, the self-same Virtues as the ancient Physicians ascribed to theirs, in the more Southern Countries. And thus do our modern Galenists, affirming that their moist Herbs in these cold Countries are of equivalent Virtues to those Herbs which the ancient Physicians have made mention of; but Experience sufficiently testifies what effects they shew, and what errors the said Galenists commit.

Avicenn, *Averroes*, *Agineta*, and the pillager *Galen*, were not *German*, *Swedish*, *Danes*, or *Polonians*, but dwelt in those hot Countries, wherein the soil or earth was day and night heated with the Solar rays, and impregnated with an aereous property, and so communicated to the Herbs wonderful Virtues and admirable Efficacy. Extremely therefore do they erre, that dare attribute the very self-same Virtues to the Herbs of our colder Countries. But I confess, that by the benefit of Art, the self-same virtues may be bestowed on the Herbs, even in our most cold Lands, which those Authors attribute to their *Arabian* Vegetables; Where Nature ends, thence the *Artist* must begin, say all the Philosophers, but especially *Hermes*, who is, as it were, the Father of all the Philosophers, doth clearly and openly testify the same in his *Smaragdine Table*, saying, *That which is beneath, is like that which is above; and that which is above, is like that which is below, for the accomplishment of the Miracles of one thing, &c.*

And albeit that these words are expounded with divers Explications, yet notwithstanding, the general sense and meaning of them points at nothing else but the superiour and inferiour \odot , which generates all things, and brings them to perfection: We cannot by any force draw unto us the upper \odot , much less enjoin him to make our Lands partakers of his more hot beams, and to fill the Herbs that grow therein with the self-same virtues that the *Arabian* Vegetables were endowed with: Alas, the Sun neither hears nor knows us, but proceeds on in its accustomed course, and dischargeth that Office which was imposed on it by the Divine Power. If we are desirous of

bettering those gifts of Nature that are vouchsafed unto us, then must we set about the Work of Art, and see whether or no it (being an imitator of Nature) can afford us any help. And this it will do very easily, inasmuch that our *European* Earth may bring forth as efficacious Herbs as the *Arabian* soil doth, and that with small Costs and Labours; so that there is no need of my more chargeable *Aurum Potabile* for the accomplishment of that business; for a sulphureous and fluid salt Water will perfectly effect the same, seeing that in salt and sulphur the Solar beams are abundantly concentrated and coagulated. This is our Terrestrial \odot , by the virtue whereof all things do grow, which if we do but know how rightly to fit and order, we should verily effect the very self-same thing by the help of Art, that the superiour and natural Sun operates in the Herbs, after its natural kind of way.

He now that neither understands nor apprehends these things, is not at all worthy to be accounted a Philosopher, but follows after blind Leaders, and hurries others as well as himself into darkness. The Sun performs its course in the Firmament, according to its accustomed manner, and cannot be rendered either greater or lesser: But we have the inferiour Sun in our power, and can accommodate it to our Herbs according as we list our selves, and in what quantity we please.

Upon this account *Art* doth far outstrip Nature; and 'tis in our power, by the help thereof, (viz. of Art) to outstrip it, if so we have it and know how to use it. But this Discourse of mine hath been more large than I intended, and minds me of desisting therefrom. I suppose I have spoken enough for a wife man's instruction; and thus much I thought it was expedient for me to hint by way of a Parenthesis.

But yet however, that I may the more clearly and more perspicuously set down all matters, that so every one may see and apprehend, that I have set before them the meer pure naked Truth; I judge it expedient to insert here yet more Examples and Instructions, that so whoever has a mind to make trial, may in very deed experiment the Truth of this thing.

Coagulate my Potable Gold into a red Salt, and put in 3, 4, 5, 6, 7, 8, 12 grains, more or less, into half an ounce of Crystal glass melted in a Crucible, that lying in the superficies thereof, the said grains of *Aurum Potabile* Salt may be molten. This done, the glass will presently attract into it self the Tincture, and become of a Jacynth colour, and so delicate, that it is not a whit inferiour in colour to the natural Jacynth. NB. If the melting be continued yet longer, the glass will be tinged with a golden, green, sky-coloured colour, and at last with a black-colour too, if it be too long left in the fire.

He that desires to make a Ruby, let him put the bare coagulated Potable Gold (without the addition of any peregrine thing) into a pure and covered Crucible, and there leave it in fusion for some hours, and he will get such a delicate blood-like coloured glass, as is capable of refreshing a man's nature, when debilitated with the multiplicity of cares, troubles, and labours, and this by a bare looking thereupon. And any one may easily conjecture what a refreshment it will be to a man's mind, when (after abundance of vain spent labours, and exceeding earnest expectations of the Blessing of God upon them, he doth at last see with his own eyes, that that thing is possible to be effected, which with such an incredible, ardent a desire

he hath so long a time sought after. Without doubt the seeing of the promised Land did affect *Moses* with an unexpressible joy, though he never entered there-into.

What man knows by looking upon the seed of any thing, what colours and what figure the Plant is of, that will proceed therefrom? but in its growing up by a due nutrition, it doth at length become manifest, which afore lay therein hidden: Even so the true first Ens of Gold lies hidden in my *Aurum Potabile*, and is not visible to the sight, much less doth that appear which shall or may by Art be made thereof, before it shall have arrived unto its constant fixity or fixation, (as the Chymists phrase it) by the help of the fire. And therefore must there be a patient expectation until this Infant wax ripe, and attaining unto a man-like estate, it performs man-like actions.

Who would ever have believed that there lies hidden in an Egg the whole essence of a Bird, with all its Members, Feathers, and whatever else appertains thereunto, but that it is a thing so thoroughly common? The Must of Wine, if drank in too great a quantity, hurts the stomach, weakens it, and causeth Colick pains; and the same Liquor, after it is become a strong and clear Wine, corroborates the stomach and the whole body, and so at length lays off those virtues or properties which it held hidden in it self whilst it was Must. He that knows a Vegetable Seed, an Animal Egg, or a Mineral *primæ* Ens, doth at least also come to know, that from a Seed there must proceed an Herb, from an Egg a Bird, and from the first Ens of Minerals an Universal Medicine: But he whose understanding cannot comprehend these things, but contemns them, as an object or contemptible Seed, Egg, and first Ens of Minerals, *viz.* a sulphureous Salt, such a one doth even ignorantly despise the Herb, the Bird, and the Universal Medicine hidden therein. Therefore no body should contemn those things that he has no knowledge of. And seeing it is clearly perceptible, that the first Ens of Gold hides within it the true Universal Medicine, and which Time, Art, and Nature will really produce unto the Light: Therefore there is no reason why any one should undervalue my Potable Gold, or despise it, because it is as yet in its infancy, and is like some common salt water; but he should rather think thus with himself, that it is like the white of an Egg, which hides within its inward bowels, as I may so say, its yolk, which in process of time will bring forth a most delicate Bird.

But these things which I have already spoken of the nature and properties of my *Aurum Potabile* may suffice; its Medicinal use shall shortly be clearly described amongst my chiefest Medicaments, and so be published, together with them. But he that is minded to make use of the same in the mean while, may safely do it, and without any kind of hazard at all, for it operates nothing else, but what is conducive to the good health of man's body, corroborating the debilitated radical humidity or vital spirit, and confirming it, by which the life of man is nourished, increased, and conserved many years in a with'd-for, healthful estate, just as a Lamp is kept alive by the pouring on of Oil, or the vigour of the Fire by the apposition of Wood thereunto, by which it is preserved from extinguishing and dying: But yet the use thereof must be warily and judiciously admitted, because being a meer pure fire, it must be moderately abridged. At the beginning of administering it, one or two drops may be given in Wine, Ale, or other Drink, unto the Sick,

but best of all in the spirit of Wine: Then the next following day one little drop more may be added, and so the Dose may each day be augmented by the apposition of one small drop, until it work by Sweat and Urine, and sometimes also gently by Stool.

This Operation being made (and on this wife active) then the Doses are to be in like manner daily lessened by the omission of one drop at a time, until the Sickness be happily removed, and so the Sick need no farther use of the same.

All things being thus rightly instituted, it will manifestly appear, that all Sicknesses, yea, the hidden ones too, are expelled by this Medicament, and even as it were consumed, like as Wood is consumed by a burning fire, in such wise, as that nothing at all of it remains, save the fixed Salt, but is all reduced into a Nothing: For all Diseases, as we shewed afore, have their rise from moist humours, which nothing can heal and remedy more commodiously and safely than this *Aurum Potabile* of mine, which is such a vehement restorer of all over-abounding humidities, opening, inciding, consuming, and dispelling them, just as the ☉ consumes Water in a Vessel, and waits it away by evaporation. Hence it is, that it both cures, and by way of a preservative, prevents the *Leprosie, French-Pox, Quartane*, and all other *Fevers, the Scurvy, Epilepsie, Apoplexy, Hypochondriack Melancholy, the Stone in the Kidney and Bladder, the Gout*, and all the *Diseases of the Matrix*, both known and unknown, and the various Sicknesses of Women, as also the dreadful *Plague*, with all the evil effects arising therefrom. For it is found, that nothing is subject to Corruption and Death, but an abounding Phlegm, or an immature humidity which is wont most speedily to pass into a putrefaction.

From hence it is clearly manifest, that the sanguine man, which is endowed with a drier temperature, has a far better fruition of his health than the phlegmatick man hath, who abounds with moisture.

Dry Sugar dures many years, but being moistened, it turns flowe, and becomes ropy and ill-favour'd, tho' it be a Salt, and is mixt with other corruptible Vegetables to preserve them.

From hence may it be seen, that a superfluous humidity opens the Gate for Death to enter in by, and seize upon the Life: But on the contrary, a temperate fixity preserves all things in an healthful state, and bars up the passage against any corruption. The Roof of a curious and stately-built House being full of chinks and holes, lets the Rain in, which moistens all the whole structure, and causeth it to rot and spoil: But if the holes in the Roof be stoppt, and the windows by which the Rain bears in be shut, and the windows on the other side of the house, where the wet beats not in, be on the contrary opened, that the warm Air passing in, thereby may thoroughly dry up all the moisture, and so inhibit or put a stop to the Progress of Putrefaction, then the whole frame and building will be kept sound and good, which otherwise would be rotted and quite spoiled. Such men as live in the moorish fenny Countries, and feed upon a waterish Meat and phlegmy Drink, are for the most part of an unseasoned temperature, and troubled with Catarrhs and the Scurvy. But on the other hand, those that inhabit high and lofty places, and have the fruition of a drier and purer Air, and that feed upon such meats as are more conducive unto health; these men know nothing of those watery sicknesses, but have flourishing and strong bodies, and have firm, compact, and excellently well

well tempered flesh. And this difference is not found only to be in Men, but also in all other things. For not only Bread, Flesh, Fruit, and such other things as are used for daily food, do grow mouldy much sooner in the moist places, and so corrupt, but also even Metals themselves; too, as Iron, Copper, Tin, and the like, even these cannot shun the corruption of the Air, but are laid over with Rust, which (in a drier air) they do not so easily contract.

By all these circumstances it is so clearly evidenced, that superfluous moisture is to all things always hurtful, and gives an inlet unto Corruption, that I think there is no body that will dare to say any thing to the contrary.

And therefore seeing that this *Aurum Potabile* of mine doth (amongst all other Medicaments, what Title soever dignified with) most notably excel in the taking away of Corruptions, and may be most safely made use of both for preservation from, and curing of Diseases, it ought to be accounted and esteemed of as an *Universal Medicine*, and that very deservedly, and which gives place to none.

These few things I was willing to describe here in this place, concerning the use, efficacy, and virtues of my Potable Gold, in the curing of the Vegetables, Animals, and Minerals. There shall suddenly follow more concerning the same, in *The Description of the use of my Principal Medicaments*.

It now remains, that I make some brief mention of the preparation of my aforesaid Potable Gold, although I have already often done the same in many places of my Writings, and have very clearly shown the same, but yet after a Philosophical manner, and without setting down any Receipt, but here and there by piecemeal; as for example, in my *Miraculum Mundi*, in its *Exposition and Continuation*, where it is briefly described, so as that it therefore needs not any farther illustration.

But yet, that I may abundantly satisfy all men, I do (by way of over-plus) admonish every one, that he do not think that this subject is to be sought after from foreign and far remote places, with a great deal of costs and charges; for the matter out of which my *Aurum Potabile* is made, is in every place, and offers it self even in a manner *gratis*, to the most poor as well as the richest, and without Costs, and is brought to its perfection in three daies space: To that perfection, I say, (that you may rightly understand my mind) as its infancy requires, *viz.* so as to become a *Lac Virginis*, or a clear Universal Medicinal Water, which I call *Aurum Potabile*, and in which the most precious Dragon's-blood, lies hidden, which is to be transmuted in a certain limited time, by fixation, into a constant Salamander; the which I have not as yet ever effected, and therefore forbear to use more words, resting satisfied with this my *Aurum Potabile*, which I have many a time prepared by my labour, and here treat of, and forbear to multiply any more words about things of greater moment. In the mean time I doubt not, but that (if time and labour be bestowed hereabouts) this *Aurum Potabile* would arrive unto the utmost fixity and constancy, both in the moist and in the dry way.

Furthermore, I deny not, but that this same *Aurum Potabile* may be made of all the things of the whole World, but yet easier and sooner out of one subject than another. *There is no Infant that is born so poor, but that he necessarily enjoys that subject, and cannot live without it:* Therefore some of the ancient Philosophers have written, *That Adam and Eve had*

the same matter in Paradise; when as yet they had no clothing.

Mary the Prophetess and Sister of *Moses*, calls it, *The Philosophical Work of seven daies:* I *Glaucos*, being a new Disciple of *Hermes*, do most truly affirm, that this my *Aurum Potabile*, which I here treat of, may be perfected not only in three daies, but even in three hours space, and that out of such subjects as are every where to be found, and which all men know and make use of, and cannot be without.

I speak the pure naked Truth, without hiding it under any Coverings of similitudes or enigmatical expressions. And that no body may think that these my Writings are not to be understood according to the Letter, but that they conceal all things under an hidden meaning, I do again affirm this third time, that the *Aurum Potabile* which I write of, may be made of any Vegetable, Animal, and Mineral, but yet sooner out of one than another. For although any one may prepare it out of a piece of Wood, Bread, or Flesh, and out of a handful of Straw, Leaves, or Grass, yet notwithstanding, it may be easier made out of a handful of the salt of any Vegetables and Animals, as being their concentrated center; and this I bequeath to the whole World as an infallible Truth. But I would have every one rightly to understand me, what Salt I here point at, *viz.* I mean no other, but that which is to be found in all things.

But that the true meaning of my words may be yet the clearer and openlier disclosed, I will adjoin a short but fundamental Discourse. It is not sufficient for a lover of Art, that is inflamed with a desire of obtaining some good thing, barely to read over such or such a Philosopher, and presently to persuade himself, that by the meer reading, he shall forthwith understand clearly and perfectly the Art treated of. No, but he must accurately meditate, and consider what that is which he seeks for, whence it hath its original, and by what means or what way he may obtain it. For if we will make our search from the utmost and extremeest Coasts (or Bounds as it were) even to the inmost bowels or center, we shall find, that God was One and alone from Eternity, even till the time wherein it pleased him to create visible things for His own glory and delight. And when He went about doing this, He said, *Let it be:* As soon as this *Fiat*, or *Let be*, was pronounced by God, it began to move it self, and to change (or turn) into four Elements, out of which Elements there afterwards arose all those Creatures, which can be discerned with our Eyes, and without the four Elements they could neither be nor consist, and without them even Nature her self can bring forth nothing.

Now, if any one would endeavour after what is purer and better than those things which are generated from the Elements, he must make his attempts by *ART*, the which, by overcoming or outstripping *NATURE*, hath its tendency to that Butt whereunto Nature cannot attain; and he must there begin his operation where Nature ended hers, as not knowing how to make any farther progress: For then is a *Quintessence* obtained, which exceeds Nature one degree, and cannot be promoted by Art any farther.

But if any one has a desire of obtaining any better and greater thing than this same *Quintessence*, he must then proceed some other way; for (as we said but now) Art cannot make any farther progress beyond

a Quintessence: And therefore necessity requires, that there be made a regress or retrogradation unto the Center from which the very Elements themselves have their original. This Center is that Divine *Fiat* or *Universal Hermaphroditick Salt*, participating of both natures, which being the true *Primum Mobile*, comprehends hidden in it self two contraries, which acting one upon another, do bring forth the three Principles of the three Kingdoms, *Vegetable, Animal* and *Mineral*, and do nourish them by the four Elements, and multiply them, and this is the common course of nature.

But now Art makes a much farther progress, and reduceth the *Circumference* to the *Center*, and doth not permit unto that *Center* or *Primum Mobile*, that the *Patient* be overcome or subdued by the *Agent*, by the operating of those two contraries upon each other, nor does it suffer it to pass into those three kingdoms, *viz. Vegetable, Animal, and Mineral*, as into its *Circumference*, but doth so subdue, and keep, and bridle in that *Primum Mobile*, that it does not divide or dilate its Virtues by a large circumferential walk, as it were, but doth in a manner swallow them down into its own self, or concenter them; just as if a Dragon should bite off his own venomous Tail, and therewithal nourish himself, when he cannot light upon any other Food, and so by this means becomes a most high Medicine. And therefore most wisely said *Hermes, Our Dragon doth not die, but by its Brother and Sister*. It is a thing necessary, that one Fire should overcome the other, and transmute it into a more noble essence. Such a fire as this, is my *Alkabeistical Arcanum*, or true *Aurum Potabile*, with which wonderful things may be effected. It is a transparent clear Water, wherein the colour and form of Fire lieth hidden and introverted; but yet that internal Fire is easily and speedily manifestable, and educible unto view, by either the dry or moist Fire. The dry way is done by the heat and fire of common Wood-Coals; and as for the moist way, a well-rectified Spirit of Wine is to be used, and such as is void of all its Phlegm. Take therefore of the dry and concentrated Fire ζj . put it into ζiij . of the moist Fire or Spirit of Wine, which moist fire will presently swallow up the dry one. These being both of them digested by a due heat of Fire for some hours, in a long-neck'd Phial or Bolt-head, will put on a blood-red colour, and will manifest and expose to view its concentrated Virtues, with curious colours, and with a pleasant taste and smell, by which heart-corroborating qualities it far excels all other Aromatical Essences,

that serve for the strengthening of the heart; for those properties which afore lay turned inwards, and were shut up in its inmost bowels, are all of them drawn forth and made visible, and become subject to the external distinguishing senses. By this means the abject and little Infant which was clad in a white colour, becomes a speaking, strong, and prudent man, and this very *Lac Virginis* it self is changed into the most efficacious *Dragons-blood*. This now is the most true *Aqua-vitæ*, and the most true *Wine of Health*, some few drops of which being daily taken, do conserve good health, and bestow long Life.

Many honest men have with their own eyes seen at my House the admirable and most speedy effects of my often-mentioned true Potable Gold, and especially its operative efficacy in the transmutation of the Imperfect Metals.

If therefore such a one as is troubled with grievous Diseases, and who finds no help in those vulgar, commonly-known Galenical Medicaments, shall need the help of this my *Aurum Potabile*, I will out of Christian Charity willingly bestow upon him so much thereof, as may be requisite for the recovery of his former health; and this I will the rather do, that the wonderful miraculous deeds of the Divine Power may be made known in these last times.

No body shall fish out from me more Directions than those which I have too and agen hidden in my Writings, concerning this *Aurum Potabile*; let it suffice every one, that he can find this Medicine ready prepared in my hands, the which scarce one of an hundred would be able to make, were he a Possessor of the Secret.

This Medicine shall lie ready prepared by me as long as I live; I will not deny it to any body; nay more, I will openly shew the use thereof too, unto some of my friends, in the melioration of both the Vegetables, Animals and Minerals themselves, that so the Wonders of GOD, and the possibility of Art may be manifested, and come to light.

And now, may it please the Omnipotent GOD, who is the beginning and the end of all things, to inspire us, out of His meer Grace and Mercy, and implant in our cold hearts, which are stopt up with darkness, the warming heating spark of His Holy, Eternal, Infinite, and all-correcting Light, that it may therein, as in some saltish and sulphureous Earth, be nourished, and grow up like a little Seed, and bring forth Fruit a Thousand fold, to the Salvation of all our Souls. *Amen.*

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THE
SECOND PART
 OF
Miraculum Mundi.

In which is described the Magnificent Coming of
ELIAS THE ARTIST;

And that the wonderful *Salt of Philosophers* is the most Excellent Medicine
 of *Vegetables, Animals, and Minerals.*

By the help of which, not only *Vegetables* do grow, and are multiplied; Diseases of Men and Animals, whether internal or external, are miraculously Cured, and Imperfect Metals really changed into *Sol* and *Luna*; yea, pure *Sol* rendered able to sustain the Force of Fire beyond the natural 24th. to the 28th. degree; but also from every Plant natural *Sol* is extracted, and disposed to *fixedness*, for multiplication of it self.

THE PREFACE.

Candid Reader;

Among ancient Philosophers of the Heathen, as Chaldees, Egyptians, Persians, Greeks, and Romans, yea, and the Hebrews themselves, it was a long-received Custom, enigmatically to propose what they esteemed most worthy of consideration, lest such Secrets should either be divulged or lost; to the end, that unworthy persons having regard to the Letter only, and not respecting the Sense expressed in those words, might know nothing at all of them: But contrarily, the Worthy, enlightened with the Light of GOD and Nature, well understanding what is signified by those Words, might thence reap most profitable Fruit. The Truth of this is sufficiently proved by the Writings of ancient Philosophers; also by the Books of Moses, and the Histories of the Prophets. For all these, or the greatest part of them, do indeed need another explication, than the Letter it self seems to infer, because some occult matter is in that contained.

In like manner our Christian Philosophers, both ancient and modern, discovered their Arcanum's enigmatically; as, among many other, Basilius and Paracelsus did: For, al-

though these men delivered all things true, yet they are understood by very few: Which hath been the occasion of Contempt and Reproaches, with which ignorant men, and the evilly-disposed, asperse all Philosophers (among whom Kings themselves, and divers Princes, in times past have been, and are yet found) and say, There is no such thing in Nature, as the Transmutation of Metals into a better state; and that The Universal Tincture or Stone of Philosophers was never found by any Man. Truly it is a matter worthy of sharp Reproof, and not to be suffered, that the Chymical Writings of many excellent pious men, should (although most consonant to Verity) be so maliciously rejected, and proclaimed false. This is rather due to Chymical Mountebanks, (understanding nothing less than Chymistry) because they expose to sale the Philosophers Stone unto others: This sort of men have rendered Chymistry so vile and abject at this day, as many men judge it a Reproach to be called Chymists.

That we might, as far as is possible, prevent this evil, and demonstrate those things to be true, which the above-named Writers have left to us, under the Title of The Salt of Ancient Philosophers, which by Paracelsus is called *Elias the Artist*; we resolved to effect the same thing.

Paracelsus treating of the Transmutation of Metals, because he was not willing to insinuate The Salt of Philosophers with its true name, refers the Reader to Elias the Artift, who, he saith, when he comes, will teach the way by which the Transmutation of Metals may be effected. Here Men imagine Wonders, and generally regarding the words themselves, expect the coming of a certain Man sent from GOD, whom they believe shall in the later Ages of the World, discover occult Arts, and make known the Secrets of Nature. Whereas, if the Name Elias the Artift be rightly considered, or a transposition of the Letters be made, we read Artis Salia, and these Salts indicate Elias the Artift of Paracelsus. These perform Wonders, so as a man possessing the Salt of Art, or knowing the nature thereof, may effect Wonders. Elias the Artift to such a man appears to be the cause of effecting marvellous things.

Basilus, in his Testament, did very obscurely describe this Salt, where he sheweth the way of making The Stone of Philosophers of common Vitriol, yet no man is able from those Writings to gather which way he should prepare the same.

Also he that considers the words of Paracelsus, where he foretells the coming of Elias the Artift, will find, that in that he describes Vitriol, both obscurely and openly; obscurely indeed in his Treatise entitled, The Tincture of Naturalists; openly, in that which he left, touching Vitriol in Species. He would not expressly say, that Elias the Artift, or The Salt of Art, was expressly contained in Vitriol; only this he was willing to shew to Posterity, viz. That the Art of changing vile Metals into better, was descended from the Ancients unto him, and with him should perish, until the coming of Elias the Artift, who should shew the true Transmutation of Metals, viz. in the 58th. year of the following Age. This time many have expected with grief and trouble, but in vain hitherto.

Many Philosophers, besides Paracelsus, have predicted the Coming of Elias the Artift, who coming from the North, attended with a strong Lion, shall teach Arts, and dispose the various mutations of mundane things for the benefit of Mankind. These have many men in vain believed to be spoken touching some one man; for if we consult the Writings of those men, who have set down this Prediction, we shall find them not to have intended a Man, but Salt-petre only, and his Brother the Salt of Art: Hence it is that they cry out, O our Salt! O our Salt-petre! O our Radical Salt! Hence also it is, that they write, If GOD had not created this Salt, it had been impossible to make our Medicine; and various expressions like to this, in many places of their Writings they use, as I have declared in several of my Treats, especially in the Third Part of The Prosperity of Germany, where (among other things) I said, I hoped that in time to come, by me should be unto all men exhibited Salt-petre, or The Salt of Art, sitting (like some Monarch) in a Triumphal Chariot.

I doing this, take Paracelsus out of his Sepulchre, and (as himself predicted) turn him towards the Orient, that is, I expose him to the Light, by which the verity of that Prediction may be discerned by All.

Perhaps my Disciples may do the same; and they seeing the verity of the Transmutation of Metals, or restoring the Sick to health in a way unheard of, draw me after I am dead, or whilst I live, out of the Sepulchre into which my evil-minded Enemies have cast me. And when they do these things, they will effect so notable a mutation in Medicine and Alchymy, as indeed for the future there will be even no Artift, who will not see and understand the frauds, ignorance, or hatred of the proud and high-flown Adversaries

of Art and Truth, and justly oppose themselves against such malicious Enemies of true Verity. Thus may those who have long before been blind, receive sight, profess themselves to have been Opposers of Truth, and strenuously labour to suppress and amend what's amiss. In such a time not only true Medicine, and the most noble Art of Chymistry would begin to flourish, but also all Arts would ascend to a greater degree of perfection; and so one Age will exhibit it self much more excellent than others. Wherefore my Prayer is, that the Gates may be opened to divine and natural Arcanums, that Elias the Artift, and the Salt of Art would discover the predicted Golden Age, and that the most Wise GOD would unto pious men grant an entrance into the Land of Promise, that they may thence bring Fruits, and present them to their Neighbours, for the Honour of GOD most high, and the solace and comfort of the Needy. Amen.

Indeed Paracelsus makes some mention of this Salt in his Works, calling it Sal Enixum; but in our Treatise (published in the year 1638.) of the nature of Salts, have somewhat more largely expounded the matter, calling that Sal Mirabile. In the present Treatise of the Salts of Art it is expressly called Elias the Artift; the verity of which Appellation, we shall by the help of GOD clearly demonstrate, viz. that Elias the Artift of Paracelsus signifies no other than the Salt of Philosophers, prepared of Salt-petre, common Salt, or Vitriol. Indeed it is in taste like Salt-petre, yet it is not inflammable, although it may be procured by Art. Paracelsus and Basilus made it of Vitriol, as several parts of their Writings shew, which for better knowledge sake I shall here insert.

Elias and Elitha, what men they were, and what miracles they wrought, Sacred Letters shew. The Miracles they wrought were Divine; the same almost is our Salt able to perform in a natural way. Therefore not without reason have we called it The Monarch of the World, or Elias the Artift; for there is no subject found in the nature of things, by help of which we are able to do the same, as may be effected by the benefit of this. The truth of this all Animals, Vegetables, and Minerals do witness, as we shall demonstrate variously anon.

But some One may say, Since Chymistry is treated of in so various Tongues, and there are found almost infinite numbers of Chymical Books, How comes it to pass, that this Salt hath so long remained unknown, even until this day, and it was never so clearly described by any Writer, as we thence could understand what it is, or which way it should be made? I answer, Writers and Readers also are found of a twofold condition. They, who writ by the guidance of Experience, did all acknowledge, and distinctly describe this Salt: Otherwise they, who compiled their Books from the Writings of others, being ignorant of the thing it self, proposed nothing but Fictions, leading the Reader into a Labyrinth and various By-paths.

Writers are diligently to be considered; regard is not so much to be had of their Words as of their Sense; if this be minded by you, you will find none of the true Writers, who did not make mention of this Salt, which, as it is manifest to those that understand, so it is hid from those who are yet ignorant of these things. You may find very many, who in Writings seek the Stone of Philosophers, and yet are ignorant what they seek, or what the Stone is, whether it be something black or white, hot or cold. And if such a thing should be presented to these men, they would neglect it, and after their fashion knowing the most precious Jewel, proceed to please themselves in Dung. Many men handle this Salt with their hands, yet what they have in their hands they know not, because they are blind, and their arrogant mind insinuates them to betake themselves to things more vile. But on the contrary,

ry, not a few may be found, who will divulge none of those excellent things which they know. Oh, how happy is he that studies Taciturnity! he is permitted to lead a quiet life. I indeed do seriously bewail my so liberal Communication of Secrets; but I did that to discover the Wonders of GGD, to serve my Neighbour, and to preserve our Art. Egregious things would often be exhibited to the World, did not the high Ingratitude of mortals deter the Writer, and prevent his good intention. When they find a man endowed with the Knowledge of some things beyond others, they flock about him, entreating him to impart his Secrets to them: there are found divers of this sort. The Wealthy come, the Needy come, and men of a middle condition also come. The first sort of men being, for the most part, very covetous, will return nothing in exchange; the second sort have not any thing to give; but the third only we have sometimes found grateful. What we have acquired with very great labour, we cannot easily impart to Enemies. Yet it often happens, that those who are judged good, are afterwards found evil, and in a Fannering manner, for Benefits received, return Calumnies and Reproaches. Therefore, in such cases there is need of great circumspection, and we must not discover all we know, lest afterward we repent. But as for my self, I have not changed my mind, I have begun to make known the Wonders of the Omnipotent, and will go on (GOD willing) and kindle an unextinguishable Light to this blind World. In this Treatise I shall only describe the wonderful Virtues of the Salt of Art, reserving the way of preparing or use to my Friends; for what are our Arts, we must not cast them away, lest our Enemies take them up, and wound us with them, after the example of Fatmer.

I speak of the Salt of Art, the Virtues of which I know, I will not communicate its Preparation or Use; all

(shall be open to my Friends, (yet with respect of persons) more than is fit, is already discovered to Enemies. Is there any reason we should cast Pearls before Swine? If what others obscurely treated of, I should here openly communicate to Enemies, would they, think you, cease to do evil, and begin to do well? Although I purpose not at all to discover the Preparation and Use of this Sal Mirabile, yet I doubt not, but that I shall prepare and make easy the way for finding it out; so as in a few years space all Europe will see Alchymy flourish, and not so much any other way, as from the discovery of this Salt.

Of other Arts, which we shall perceive to arrive to a more excellent state, the reason is the same. It is sufficient that I have shewed such an incomparable Salt is found in the nature of things; yea, I demonstrate the place where it may be found. If Columbus had not told us, That the Occidental part of the Earth did abound with Gold and Silver, who could have found the same, to bring such Treasures thence to us? If some One had not revealed, that gold, silver, and precious stones were contained in Caverns of the Earth, and Pearls to be found in the Sea, who (doubting the event) would ever have been at those vast charges of Diggings and Fishings? But now we all know such Treasures are to be found there, none refuseth to search for them. And although they are not obvious to all, yet that they are in being no man doubts; even so I judge it to be with our Sal Mirabile. The virtues of it I deliver, which are great, and with most ease labour, and a very little direction; other things may be thereby obtained. The only moving cause why I propose these things, is the most Wise GOD, whose wonderful Works I neither would nor could hide or keep to my self any longer.

THE SECOND PART

OF

Miraculum Mundi, &c.

I. Of the Original of this Salt.

Touching the Original of this Salt, I have before shewed which way it should be made of F. and common Salt. Yet I would not have these words be so taken, as if the same could be prepared no other way than this. The methods of preparing it are various; for it may be prepared of G. only, without the mixture of common salt, yea, of allume, sulphur, or common salt, without the addition of H. or without the benefit of the Fire of any other salt. No salt can be found, which is not a commodious matter for this salt of Art; yet it may be collected from one more easily, and more copiously than from another. But because we exhibited one only way of preparing that before, as

well for other reasons, as because of want of time, and lest we should be too tedious to the Reader; therefore we now think it convenient to signify, that these wonderful salts may be prepared, and that they are endowed with special virtues denied to others, which they exercise, as well universally as particularly, in Vegetables, Animals, and Minerals. For, Who can deny that salt to be of another nature, which remains after the Deffillation of spirit of common salt, and that which is left in the Deffillation of Aqua-fortis or R. although they be salts of a most diverse nature, of which these are prepared?

Yet every one of these is endowed with power of dissolving and fixing. But that which is made of *Sal Armoniac* volatilizeth all bodies so, as the souls of them pass over by Alembick; in like manner a spirit separated from *Sal Armoniac*, by the help of C. manifests other virtues and properties, than those which are found in the Spirit of common Salt. To one more accurately considering these, *Arcanums* of great note will exhibit themselves: But more of these elsewhere.

Of the Name of this Universal Salt.

ON this Salt we impose the name of, *The Universal Salt of Philosophers*, respecting those excellent Powers and Virtues, with which it is endowed above any other Salt. We deservedly call it Universal, because it is the highest of those Medicaments which proceed from Minerals, Animals, or Vegetables; as in the following Treatise shall be demonstrated: Of Philosophers is added, because the demonstration of this matter is necessarily grounded on Philosophick foundations.

Of the Virtues of this Universal Salt.

Touching its virtues, they are innumerable, and we judge it impossible to discover them all; for if I should undertake only to write what I know of the virtues thereof, a whole years time, day and night labouring, would scarcely suffice. Perhaps GOD will discover more to others; perhaps they, who are younger than I, may find what is to me unknown. By me the first, by me the Guide is opened to the Searcher an entrance to things more excellent.

My purpose is to communicate to others those things, which the most Bountiful GOD hath largely conferred on me, for His Honour, and the profit of my Neighbour: I intend, I say, to divulge the wonderful Works of GOD, but at this time (by reason of various busineses and hindrances) I shall only make mention of some of the virtues, which I find to be in my *Sal Mirabile*, or Salt of Art, reserving the more special explanation of all things to a more commodious time.

This Salt is rightly called Universal, because it is the principal Medicament of the three Kingdoms, viz. of Animals, Vegetables, and Minerals, and hath power to perfect and augment the same. I remember that heretofore I have attributed to Nitre the Dignity of this, and not without reason; yet in many things it is inferior to this *Sal Mirabile*, so as it deserves not to be compared with the same. Therefore in no wise correspondent to Verity are those Writings, which teach, That by the help of a certain Corrosive, a transparent Salt may be extracted from a Metal, and that salt, dissolvable in water, is the true Salt of the Wife. Such Writings are of no other use, than to seduce the Ignorant by Lies.

For the salt in which a Metal is dissolved, deserves no more to be called or esteemed a simple salt, but receives the condition of a metallick Vitriol, whether that Vitriol is green or yellow, of *Sol* and *Luna*; or white, of *Mercury*, *Jupiter*, and *Sesum*; or blewish-green, of *Mars* and *Venus*; for what is to be an Universal Medicine, extending it self to all Kingdoms, must necessarily have no extraneous thing mixed with it. This is contentaneous even to the Judgment of Rufficks.

The true Universal Salt should be partaker of no metallick matter; but altogether pure, and most easily able to put on the nature of all things contained in the kingdoms of Vegetables, Minerals, and Animals, and so exhibit it self a most excellent Medicine. And since these Properties are most fully found in our Universal salt, there is no reason we should ascribe to it less Honour, or not prefer it before all salts.

Intending to expose the Verity of these sayings to all, we begin first with Vegetables.

Of the wonderful power of the Universal Salt in the kingdom of Vegetables.

I said in my *Miracle of the World*, and the Continuation thereof, that a sulphureous sweet salt is the most excellent Medicament of all Vegetables: The Truth of which no man hath cause to doubt; for I have shewed in various places, that barren grounds are made fruitful by the addition of that. Of this salt, which we may use instead of Dung, there is great diversity, for it is prepared of Wood-shales, of Stones burnt to Lime, and of other bodies putrefied by length of time. But the Chief of all these is Salt-petre, being the salt of Vegetables, Animals, and Minerals putrefied, especially because it is endowed with a certain occult and sweet Fire. Also the signature proper to it, clearly exposeth to our sight its augmentative virtue; for it exhibits not it self in a Cubical form, as is observed in corrosive salts, (altogether adverse to the augmentation of Bodies) but Dart-like or acuminate. By this signature Nature intended to shew of what condition and virtue salt-petre is. And indeed, if Experience be consulted, the things we have proposed will be found true, viz. that in Nitre is a principal Virtue, augmenting Bodies. As for example: R. what Corn you will, steep it for a night and day in Rain-water, wherein Nitre is dissolved, commit it to the earth, and you will find, that it not only shoots up more copious stalks and ears, and hath a more swift germination and ripening, but also is endowed with a much more acceptable taste, than other Corn in the vulgar manner produced by the help of the Dungs of Animals. But of this matter, more at large elsewhere.

Pure Nitre is a salt genit in old Stables, from the Dung and Urine of Animals. Urine and Dung are no other than Vegetables themselves, putrefied by digestion in the stomachs of Animals; which concoction is wont to be perfected in 24 hours space: But Vegetables and Animals, out of the stomachs of Animals, cannot be putrefied without long time, especially when they have acquired some undue hardness.

Thus

Thus we see Putrefaction differs in respect of time, yet it acknowledgeth no diversity; for whether it be made in the stomach of an Animal, or out of it, it is all one, and never different in virtues. By this medium the Vegetable kind hath its propagation and encrease, but altogether in a rustical manner, because a better way is not yet known.

Indeed, unto Philosophers is known a more easie and more compendious way of reducing Vegetables, Animals, and Minerals to their first matter, or into a sulphureous sweet Salt; yet they reserved the same among their *Arcanum*, lest such a most noble Art should be made too common.

As it is altogether impossible that the seed of any Vegetable set in dry Herbs should grow, or Man himself, or any other Animal, should be able to sustain Life, encrease, or be multiplied, with the only use of Sand or Flints; but earth moistened with a saline liquor, is required, unto which the seed must be committed; and in Man such Aliment must be digested in the stomach, as will easily be changed into nutriment of the Parts: so it is impossible to augment Metals, unless they have been before reduced to their first matter, and so spiritually conjoined each to other, as one may give nourishment and encrease to the other. All these things are far more easily and more readily performed by Art than by Nature.

By Art that all Vegetable, Animal, and Mineral subjects may most easily and swiftly be reduced to their first matter, which is a sulphureous sweet Salt; and by that means be multiplied, the true Universal Salt clearly demonstrates; which salt, if we observe its signature (or long figure) is not only more excellent than Salt-petre, but is also generated easily in the air. We have discerned sand or a stone to imbibe this salt: if exposed to the air, and from an ingenerated virtue thence to grow, yea, and that which first grew being taken away, in a few daies space another hath shewed it self, and so to Infinity. Indeed these things seem impossible, but they are not so to him who rightly knows Nature; for that augmentation is effected in a Magetical manner, of which we do more fully treat in another place.

Hence, not without good cause, do we ascribe to this Universal salt the title of HERO, and a most rich and liberal Monarch.

THE PROCESS.

A most easie Way of acquiring Spirit of Salt together with the Sal Mirabile.

R. of common salt two parts, dissolve it in a sufficient quantity of common water; pour A. upon the solution; put the mixture into a glass Body, or a glass Retort well coated, or else into an earthen Body or Retort. If a Body, set on an Head, and begin to distill with Fire of sand, encreasing your Fire gradually; with the first heat comes off the unfavoury Phlegm, which gather apart; when the Liquor comes forth fowrth, change your Receiver, and receive the fowrth spirit: Continue the operation till no more spirits will arise, then let out the Fire, and permit the Vessel to stand in sand till all is cooled, when cold, take it out, and if it be unbroke, fill it again with the aforesaid matter, and proceed as we taught: The Phlegm is not to be cast away, but must be kept, that in it may be dissolved Salt (because it is better than

common Water) for another distillation. Thus from every pound of salt you will have lbj. of the best and most pure spirit. Dissolve the salt remaining in the Body or Retort (if neither be broke) in Water, filter and evaporate the Water, let it crystallize, the Crystals will be white, endowed with wonderful Virtues, to be declared here following.

Note, If the Glafs be broke, there will be no necessity of dissolving the Salt, it will be enough to take out the dried *Sal Mirabile*, and reserve it for Use.

Note, This distillation may be performed in a silver Body, for so doing, we shall be free from all danger of breaking; yet the Vessel must be made of very pure Silver, void of all Copper, lest those most sharp spirits do attract the Copper from the Silver, and so the Body become altogether porous and soft. Although in the salt is no property agreeing with silver, yet every distillation it raceth off some of the silver, which that you may save, gather the white Powder left in the Filter, after filtration of the dissolved salt. Dry this Powder, moistened with a strong *Lixivium*, and melt it in a Crucible into silver; yet you must not interrupt this melting of the silver *per se*, because it hath acquired such volatility from the spirit of salt, as it will fume all away.

And although every distillation some quantity of the silver be raced off, yet you may distill the same matter some hundreds of times in the same Body, before you shall need a new one. Thus we shall have the less need of Glasses, and sooner perform the distillations, because a strong Fire may be given at first, without fear of breaking the Vessel.

A yet more compendious way is, when we set the Body alone upon a Trivet, and by putting Fire under it, extract the spirit; for so we shall need no Furnace, unless we will, for better confining the heat: Nor will any great quantity of Coals be spent in such extraction, because lbj. of salt may be distilled with two or three lb of Coals.

This spirit being of it self sufficiently clear, and of a grateful taste, needs no rectification.

Yea, it is able to effect more than we ascribe to it in our Writings. Also the remaining salt effects other incredible things, besides those we ascribed to it in our Treatise of the nature of salts.

Plainly, after the very same manner as we have taught spirit of salt to be prepared, so may also be made *Aqua fortis* and *Aqua regis*. Instead of salt, take Nitre, and you will have *Aqua fortis*; and if to a solution of Salt and Nitre, equal parts, you add a sufficient quantity of B. you will, by help of Distillation, acquire *Aqua regis*.

Therefore since the infallible Basis and Foundation of Medicine and Alchymy is C. or esse D. it is now known to us, which way, and for little Charge, we may produce large quantities of this Medicine; whereas in the vulgar way great Coits and Labour is required; and the more easily we can obtain it, the more abundantly profitable will it be to us, especially when we intend to bestow time in the transmutation of the more vile Metals. Wherefore its principal Use is directed to the Preparation of F. as is said most easily. Hence also the spirit of salt and *Sal Mirabile* may duly be used in true Medicine and fruitful Alchymy.

Of a Lyon and Panther is produced a most sharp-sighted Lynx; yea, of a Lyon and Eagle is genit a most potent Dragon, vomiting Fire, flying on high, and carrying up in the air an Horse, with a most

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ting upon him. Although these can do very much, yet they could not preserve the most noble Art of Alchemy from being accounted unprofitable and neglected by evil-minded and ignorant men. Yet at length an unfatiable Gulo consuming all things, being genited of a Dog and a Wolf, restored the same to a due splendour. This dares to demonstrate the species of Metals to be mutable, contrary to the opinion of *Aristotle*, and by this means plainly shew and confirm, that *Alchemy* is most profitable, and condemned without cause. *Alchemy* stands obliged to this, because by the same it hath recovered its pristine and truly royal honours; to this, because it both acquires favour and praise.

Of the Utility which our Salt of Art contributes unto all Men, of what state or condition soever they be.

THE Utility of this is very great, for if seeds, before they be sowed, be steeped in it, they will yield an incredible increase; which is a thing of very great concern to all men dwelling on the Earth, because they shall never sustain the want of Bread.

And will not the Husband-man, gathering in his Fruits for less labour and charge than in the vulgar manner, be able the more certainly to pay his Dues to the Magistrate?

Of Artificers also the Reason is the same; because they being hereby better able to exercise their Crafts, may also return the benefits thereof to their superiors.

Unto Physicians, by the help of this, are known more excellent Medicaments, and they being present, more speedy and certain relief is procured to the sick.

So is it with Apothecaries, Chirurgeons, and their Medicines, Plasters, and Unguents, which by this are more perfectly prepared, and therefore the Cure is sooner, and more happily absolved, than by Medicines vulgarly known.

And I believe every Artificer and Trading Man, when he can perform his Work with less labour and charge, and acquire his Wares for less trouble and cost, will sell his Commodities to his Neighbours, at a cheaper rate than he could before he found the benefit of this salt.

Husbandmen and Gardeners, and other such labouring men, when they can more easily, sooner, and more abundantly reap their Fruits than before, cannot chuse but sell to the buyers for less price than they could afford them at when they had no benefit of this.

Thus we generally see, of how great Utility our Salt of Art is, or what benefits may thence redound to men of every condition. What man, considering these things, will not employ all his faculties that he may become the Master of such a salt, whence he may not only benefit himself, but his Neighbour also?

Of the Use of this Sal Mirabile in Medicine.

1. THIS salt ought to be numbred among Universal Purgers, for by a Magnetick Virtue it extracts all sorts of noxious humours out of the Body.

2. This purging Property is augmented by Metallick or Mineral Bodies dissolved in it.

3. For expelling all depraved humours, the most profitable to be dissolved in it, is Antimony; when the Medicine is to be appropriated to the Heart, Gold; when to the Brain, Silver; to the Liver, Spleen, and Reins, Iron; to the Lungs, Tin and Sulphur; to the Habit of the Body, Copper and Mercury.

4. If purging Vegetables, Minerals, and Animals be boiled in the Water in which this salt is dissolved, and that decoction be used in a Clyster, we know all corrupt humours will be evacuated thereby.

5. In all those Persons, young or old, which cannot or will not take purging Medicaments, either by the mouth, or otherwise, it will be very profitable to free their bodies from corrupt humours, to make suppositories of Honey and this salt mixed.

6. In *Head-achs*, all *Fevers*, and the *Epilepsie*, it will deserve the praises of a suitable Purger.

7. In *Catarrh*, when the Head is full of Phlegmatick Humours, half a grane, or a whole grane of this snuffed up the Noftrils early in the morning, or in the day-time, wonderfully evacuates the Phlegm.

8. It is an admirable Remedy in Affects of the Jaws, and parts adjacent, as the Tongue, Tonfils, Checks, and Gums, having their original from a sharp *Catarrh* falling down, and oftentimes conjoined with Ulceration and Corruption, as is frequently known to happen in *Scorbutick* Diseases. For it extracts the humours causing the *Evil*, and heals the part vitiated, if it (dissolved in Water) be often used hot as a *Gargarysm*, and the use of Purging not neglected.

9. In like manner, in the *Tooth-ach* it performs Wonders, drawing out the Humours causing dolour in the Teeth; if as much as will lie on the point of a knife, or 3j of it, be applied, tied up in a fine Cloth, to the aking Tooth, yet after the use of some gentle Purgation.

10. It is a famous Medicine in Affects of the Eyes and Ears, drawing their Original from a *Catarrh*, provided the use of some Purging Medicine be not neglected.

11. This salt is egregiously useful, and especially after Metallick Bodies have been dissolved in it, against green Wounds of the Body and old Fistula's.

12. If it be mixed with a due quantity of common Water, and thence a Bath be made, it admirably clears away the *Scab* and like Affects of the skin, better than natural Baths themselves; for by its famous power of attracting depraved Humours, lying between the skin and flesh, and producing such Affects, it heals and extracts the same, especially if that power be helped by some other Medicine.

13. It extracts Humours of every kind, sharp, gnawing, or which are most firmly inherent in the external parts, or which often produce Vermin like Lice, and cannot be removed by Baths or Unguents.

14. This used internally and externally, (viz. in a Bath) extracts the Water out of Dropical persons; and this it effects so much the more powerfully, if Gold be dissolved in it.

15. It

15. It is a famous Medicine for removing Dolours of the Gout, or diminishing the same.

16. Inwardly given, it is conducent against bloody Fluxes of every kind.

17. Also externally applied, it wonderfully stops Blood in Wounds, especially if after it is calcined and reduced to Powder, it be mixed with Cobwebs or Peacocks Dung, or which is better, when Steel hath been dissolved in it.

18. It kills and expels all Worms.

19. In *Fractures of Bones*, and in *Ruptures*, it is a most excellent Medicament.

20. It, dissolved in Water, and put upon the body, not only preserves Infants from Corruption, but also greater Animals, and Man; yet it may be used in a more dry form.

21. It is an excellent Conditure not only of Animals but also of Plants and Flowers.

22. It preserves bodies dissected from rottenness, stink, and dryness; contrary to what we have observed Turpentine, Spirit of Wine, Aloes and Myrrh to do; yea, from decays, as we have seen done in Salt-water.

23. It of Gold produceth an excellent *Elixir*, in a few daies, some granes of which used either liquid or dry, most gently expels depraved Humours by Urine, Sweat, and Sedge. Such an Universal *Arcaenum* was never before this time known to Mortals; we liberally give it, for the Honour of GOD, and Health of our Neighbour.

24. It to prepareth Gold, as by the help of Alcolizate Spirit of Wine, it passeth the Alembick of a golden colour, and is a famous Medicament.

25. Also by the help of that (although after another manner) a blue Tincture may be extracted from Gold, of excellent use in Medicine and Alchymy.

26. It is able to impress the nature of Vegetables on all Metals; so as Metals this way prepared, and added to the Roots of Herbs, impart to those Herbs the nature of the Metal applied. How famous the use of such Metallick Medicines will be in Medicine, is is easie to understand.

Of the Utilities of the Salt of Art, in various ARTS.

1. IT suddenly coagulates River-Water, Rain-Water, or any distilled Water, so as it becomes Ice, and may be carried in Paper, a Sack, or Wooden-Box or Chest, wheresoever you will, and be dissolved when need is, so as the salt may be separated from the Water; which salt is not at all changed by the Water, but may oftentimes again be used for like Coagulations.

2. After the same manner Wine, Vinegar, Beer, Metheglin, and like Drinks, may be reduced by coagulation into a clear substance, and again be most easily dissolved.

3. Also by help of that may be coagulated saline spirits, as, *Aqua-fortis*, *Aqua-Regis*, Spirit of Salt, spirit or oil of Vitriol, and the like, so as they will become hard salts, without any change or corruption, portable in Paper or wooden Boxes, to other places, where being dissolved when need is, they exhibit

a Liquor distinct from the salt, the salt in the mean while keeping its coagulating Virtues intire.

4. To Honey and Syrup it gives the consistency of sugar.

5. Fountains may be so stopped with it, as their flowing to be stayed.

6. It changeth wood in process of time into a most hard stone.

7. It abstracts the superfluous Phlegm from Wine, Beer, Vinegar, and Spirit of Wine, so as they become the stronger.

8. It separates the Phlegm from subtle Mineral spirits, whence they are made volatile and more powerful.

9. It takes away from Wine, Beer, Vinegar, and Spirit of Wine, its ungrateful taste or odour, and unto them also gives greater clearness.

10. Also it corrects the unfavoury smell of Vessels, so as we may commodiously use them.

11. It preserves for a long time all Fruits, as Cherries, Apples, Pears, Grapes, Garlick, yea, Hens-Eggs, and whatsoever may be changed by the air, and otherwise would be corrupted.

12. Unto Painters it may be a Basis for their Colours.

13. The seeds of Vegetables moistened in it, are wonderfully multiplied, so as from one only grane 10, 20, or 30 ears will arise: And the same will be effected, if the salt it self be committed to the earth.

14. It catcheth the Earth long to keep the Rain-Waters it receiveth. Hence must necessarily arise great profit to the Fruits.

15. This applied to the Roots of Trees, recovers them, though almost dead before, and makes them fruitful.

16. Yea, Animals suffocated or drowned in Waters, as Dogs, Cats, Mice, and Infants, by help of it may again be restored to life.

17. It attracts the breathings of many men lying together in one Chamber, and coagulates the same as snow or ice; not indeed by any real co-touching, but being included in some Glafs, and hung up by a Thread. Even so, in a Magnetick manner have we observed such breath or vapour to adhere to the outside of Glafs like true Ice. But this is a Winter operation.

18. Flowers and odoriferous Herbs, by addition of this, may be preserved without change of odour, taste, or colour.

19. By the benefit of this salt, various colours and very many odoriferous species may be prepared; whence the Roots of Plants, if they be applied to them) attract the colour or odour, which they communicate to the Herbs themselves.

20. It takes away the bitterness of Oil-Olive, rendering it sweet and clear, better than boiling can do.

21. Linsced-Oil being mixed with it, is presently clarified, and freed from its Aqueosity, which otherwise cannot be effected in many daies. [See more in the Second Century.]

Of the Use of the Salt of Art in Alchemy.

1. It dissolves and fixeth all Vegetables, Animals, and Minerals.
 2. In three hours space it reduceth all the aforesaid into their first matter, whence most excellent Medicaments are made, and whence proceeds a product of Metals, new and more excellent than others.
 3. It demonstrates, that in all Herbs, none excepted, there is volatile \odot , and teacheth which way it should be fixed.
 4. It adds strength to *Aqua-fortis*, *Aqua-Regis*, and Spirit of salt.
 5. In a few hours space, it extracteth the soul from Gold, so as it ascends by Alembick, and becomes a very excellent Medicament.
 6. To the white body of \odot , and of other Metals, spoiled of its soul, it restores the same.
 7. In a very short time it reduceth Gold to such an essence, as it may be united with the seeds of Vegetables, and communicate it self to the Herbs.
 8. It extracteth Gold, Silver, and Copper from Metals most compendiously, and with very great profit, in a dry way, without fusion or any addition.
 9. It gives more noble qualities to metals, whilst they are washed in it, so as even by the use of such a Lotion, Iron can join it self with Mercury, yea, become fluid and ductile, like Copper, which is a thing very profitable.
 10. It brings imperfect Metals by graduation to maturity, and so changeth them into \odot and \ominus , as well by the dry as humid way.
 11. It can ripen every iron into steel.
 12. By the help of this, Iron may be changed into Copper, Copper into Silver, and Silver into Gold, either by the humid or dry way. Also every Gold may be brought to the 28th. degree, yea, to a true Tincture. But of the last I have as yet made no experiment; nevertheless, it seems not to be impossible, because there is no metal which may not be changed into another, and indeed more excellent metal; yea, we know that common \odot keeping its colour, may be exalted. And although the way of making this Tincture is not yet certainly known, yet there will be some one, that shall succeed us, to whom GOD will grant the knowledge of the same, who shall stop the mouths of all slanderous and evil-minded men, and discover their malice.
- But some one may say, How shall we know this colour of Gold to be true Gold, and not Copper? To him I answer; For this Process neither Copper nor any other Metal is required; only a Vegetable Sulphur with the Salt of Art absolves that. Whence then should the Copper have access to the Gold? To say, from the Vegetable Sulphur, is nothing; for that must be numbered among Miracles. Hence, if that should be Copper, we see it may well be demonstrated, that all Metals yea, and *The Philosophers stone* it self, may be prepared of Vegetables. Which is a saying most nearly correspondent to Truth: for there is no Plant, yea, I say, no Excrement, no not humane Dung, which exhibit not true Gold, or a true Tincture. Therefore this colour, which we find to have access to Gold, by help of the *Sal Mirabile*, and Vegetable Sulphur, argues not Copper, but true Gold. The Elementary Rays of \odot have passed into Sulphur in the coagulation in Herbs; this, by

help of the Salt of Art, is changed into Tincture, when fixed, and added to Gold, becomes corporeal.

From these and the like, we judge the certainty of the Transmutation of Metals to be sufficiently manifest to every one. Indeed many have endeavoured to demonstrate this, but none more clearly than I have done, because this appertains to *Sal Mirabile* only. Therefore let Ignorants cease to gain-say GOD and the Truth, lest they be severely punished.

These, and various such-like Transmutations, may be performed with very great profit; therefore I judge it needless to speak more of them. Occasion of knowing many things offers it self to Posterity, if GOD give the Blessing. For the Utilities of this Salt are daily more and more known to my Disciples, so as it cannot otherwise be, than that all Europe by the help of this Salt only, shall see true Alchemy flourish. Whence, and not undeservedly, it is called the *Salt of Art*, or *Elias the Artift*, who entering into the World, should communicate various Arts to the same. Here you now have him, teaching those things which alwaies were accounted impossible.

The World not contented with this *Elias*, must necessarily expect another. The Jews considering the abject state of Christ, esteemed him unworthy the Honours of the before prophesied of *Messias*, altho' with their own eyes they saw very many Miracles wrought by him. If the same happen at this day in this case, what wonder is it? It is very hard to believe, that such a wonderful Salt can be found in most abject Vitriol.

Could such men know the nature of common Vitriol exposed to the eyes of all men, they would easily understand more to be contained in the same, than I have attributed to my *Sal Mirabile*. It is better something should be referred to Posterity, than all things laid open to our Age. I have begun, let others proceed.

Paracelsus, in that Chapter he writ of Vitriol, saith, By help of this every Iron may be changed into the best Copper; but which way, something more excellent, viz. Iron, may be changed into Gold, *Elias the Artift* (which we call the *Salt of Art*) when he comes, will demonstrate. That the occult virtues contained in Vitriol may be more known to every man, what this Author left in Writing, touching Vitriol, I thought good here to insert.

Therefore, since I in this Treatise denominate my *Salt of Art*, *Elias the Artift* long since predicted, some one may properly say, *My Glauber, you proclaim your Sal Mirabile to be Elias the Artift; but in Paracelsus's Writings we read, That when he comes, he will teach the way of transmuting Iron into Gold; now shew us which way your Sal Mirabile can do this.* I answer, That here is nothing of impossibility, I have obscurely in this and other places shewed; but which way the Operation is to be instituted, I have not declared: because I my self have not as yet obtained a perfect understanding of the same. Nevertheless, that it is possible we have often observed; for Iron hath access to Gold, and so augments it even as it augments Copper.

For when Copper is dissolved in a certain salt, and the solution is poured upon thin Iron Plates, not only the Copper and Iron settle to the bottom, and so becomes Copper again, but also whilst the solution is performing, a great quantity of the Iron hath access to the Copper, so as you take out more Copper than you put in. I bring for a true Testimony of this Experiment,

periment, the Saying of that most true Writer, *Lazarus Ercker*, in his Probatory Book, where he saith, He had often observed, that Iron Instruments in length of time were changed into Copper, without any deprivation of their Figure. Yet it is credible, that this Mutation is from Spirits, not from Bodies, because Spirits are endowed with a greater penetrative power.

Since the Writings of this man are in the hands of few, I thought good here to infer what he hath left written, touching the Transmutation of Iron into Copper.

Whether Copper may be made of Iron.

Courteous Reader,

I Did for a long time persist in denying, That Iron in Copper Waters, such as are made of Vitriol, green Tartar, and the like, could be precipitated into Copper; nor could I in any wise believe, that any encrease could come to Copper, from Iron; but daily Experience hath taught the contrary, viz. That in Mines and Mountains of Vitriol, were left Iron Instruments, which after long time were changed wholly into Copper. For although precipitation of Copper is made, by the benefit of Iron, yet the same quantity of that, as is put in, is not taken out again. Notwithstanding this, here it is to be observed, that together with the Copper, which is so precipitated, Silver also (if any be) settles to the bottom. Therefore they seem to do well, who for Precipitation of Silver, besides Copper cast also into the *Aqua-fortis* Plates of Iron: And so in one and the same Operation, Silver and Copper settle to the bottom, and we have all, which the separatory Water did contain.

As it is manifest, Copper may be made of Iron, so also that the same may be changed into Gold, is most easily demonstrated. That it is possible, I have often observed, although without profit, because the true way of Operating was then unknown to me.

Iron is not changed into Copper in every solution, but in that which is in certain Determinate Salts. For, if you dissolve $\frac{3}{4}$ of Copper in *Aqua-fortis*, and to repress the sharpness of the *Aqua-fortis* add a little common Water, cast in Plates of Iron, or duly infinite coction; $\frac{3}{4}$ is of Copper will indeed be precipitated by the Iron, but the Iron not changed into Copper. The certain reason of this, we believe, is, because no Salt having power of Graduation, was added to the *Aqua-fortis*: Of Gold, the reason is the same, if it be dissolved in *Aqua-regis*; for the Gold is here found to be precipitated alone, and the Iron not changed into Gold, because of the defect of salt convenient for gradation.

But if a solution of Copper or Gold be made in spirit of salt, and Iron cast into that solution, then not only the Copper or Gold settles to the bottom with the Iron, but also in this solution part of the Iron passeth into Copper or Gold, because the spirit of salt more potently acts upon the Iron, and introduceth Tincture better than *Aqua-fortis*.

Although any Iron, as you see, may be changed into Copper or Gold, yet no profit is thence to be expected, for commonly some part of the Gold re-

mains in the solution, and is not precipitated; and which way this may be separated from the Water is not known to all. Therefore it is better to omit this Operation, than to labour and be at charge to no purpose: For reduction of this Gold, mixt with the solution, experienced men are required, which will do all things with judgment, and are not contented with that only which exposeth it self to fight.

Yet I do not in any wise think that such gradation cannot be instituted without profit. If we can really transmute a very small Particle of Iron into Gold or Copper, Why may we not also do the same in a greater quantity? It is our faults if we do it not, who are ignorant how to use rightly Salts of gradation, sufficiently able to complete the work. That the way of effecting that was known to *Paracelsus*, I doubt not; yet he would not communicate it to the ungrateful World, but referred the divulgation thereof to the coming of *Elias the Artift*, and that not without Reason. I doubt not, but that this gradation may be performed with very great profit, by help of my *Sal Mirabile*, or *Salt of Art*; yet I cannot subscribe to it as an infallible certainty. I have other things now in hand to speak of: My Labours and almost incredible Charges have discovered various secrets, which I publicly communicate for the profit of my Neighbour. Other things may be effected in time, by which (Darkness being dispelled) Light may be given to the World, and the Miracles of the Omnipotent GOD be exposed to the view of all. Here is need of Labour.

That Gradation of Iron may be made by the help of appropriate salts, so as to be changed into Copper, Silver, or Gold, our *Sal Mirabile* plainly enough declares, whether the gradation be instituted in an humid way, or Cementation made in the dry.

Now it remains, that we demonstrate, that such gradation may be made by spirits, having power of perfecting and fixing, so as no consumption of the Iron be, as we see done in the addition of *Aqua-fortis*. It is sure that the same gradation which *Lazarus Ercker* said, he observed in the aforesaid Mountains, is of like condition; and since we possess such Spirits, we also, remote from Mountains, may effect the same. I cannot believe that any other can (if he would) teach us the way of preparing such spirits, besides *Elias the Artift*.

In what relates to me, I say, that this gradation of Iron may be the better performed, Copper, Silver, and Gold must first be reduced into Vitriol, having power to effect gradation, and that indeed by the benefit of the *Salt of Art*. I have more than once, by the help of the *Salt of Art*, changed silver or gold into a green Vitriol: I need not speak of Copper, the mutation of which is far more easy, yet the other is not very difficult, and indeed in an humid way. For I have not seldom (when it happened that the Iron being consumed, my labour was to no purpose) had one end of an Iron Wier changed into Copper, and the other into Gold. If time will permit, for my Friends sake, and that they may be mindful of me, I will repeat the same labour. But the principal thing, which infers difficulty in this Operation, is a too great corrosion of the Iron by the Vitriol.

Note. Besides this, there are other things, which cause difficulty, and so render the labour invalid, in the dry way as well as in the humid, viz. the aptness of Glasses to break in the humid; and of Crucibles

bles in the dry way; whence it comes to pass, that the *Sal Mirabile* cannot be kept in them a due time, but runs out.

The gradation of iron into gold, in what way soever made, without gold can very difficultly be perfected; and if a glass happen to break, who shall be able to gather up what runs out? The loss of one gradation, by the breaking of the Vessel, and outflowing of the Liquor, will scarcely be repaired with 5 or 6 other gradations completed without loss. Therefore it is best to desist from such Works.

Of that Operation, which is performed by the dry way, the reason is the same. For here the gold, which is added for gradation, is almost all lost, without regard to the breaking of Crucibles, which by that means cannot contain the *Sal of Art* its due time: And besides all this, the substance of the Crucible will imbibe some of it, and together with the same part of the Gold; and, who can without loss extract it thence? Yea, we think the Crucibles drink in a greater quantity of the gold, than we acquire by the gradation, although our Work succeed well. By Experience it is manifest to me, that when there are eight parts of Gold, but one part of Iron in gradation is changed into Gold, which way soever the Work is performed. What will it avail to spend our time in perfecting those things, the event of which is very uncertain? This is the reason why very many with me have refused this profitable Operation.

We considering the possibility of the matter, whether it was possible to prevent those difficulties began to labour, but to no purpose, a great while, until at length it pleased the Highest Giver of all Good things to hear our Prayers, and opened to us the way of preparing such Glasses, as (although not luted, are able to bear the vehemency of Fire without coating; and Crucibles also we know how to harden so, as they will continually keep Metals in Flux. I now hope, if GOD hinder not, for better success.

A man not fearing the breaking of Glasses and Crucibles, might perform egregious things, this way handling Metals, according to his will infiltrating gradations and fixations, and so reduce Metals to due maturity, even as the sun, by continual digestion, ripeneth Fruits: For no man, if he fear breaking of his Vessel, and loss of his matter, is able to keep the same till its final complement in a Glass or Crucible.

By the benefit of either of these inventions, such things may be effected in Medicine and Alchemy, as before were impossible to be done.

Yet let no man sollicit me (considering the great labour and vast charge I have expended thereon) to divulge this secret. Nevertheless, that it may not be buried with me, I purpose to communicate that to two of my most loving Friends, adding (besides many other *Arcanums*) a succinct Explanation of this second part of the *Miracle of the World*. It will concern these men to use the same for the Honour of GOD, and good of their Neighbour. I did not this to profit our selves, because they are rich enough and I live contented with what I have, but only that the sustentation of the Poor might be chiefly regarded.

Iron may also another way be changed into Gold

or Copper, *viz.* by the help of fiery spirits, which *Sal-Petre* (the Cousin-German of our *Sal of Art*) exhibits, and of which I have very plainly discoursed in a special Treatise, not yet published. That you may see the possibility, I will declare the matter by example.

Make a Fulmen of Tartar, Sulphur, and Nitre mixt, to this add of the *Minera* (or Ore) of Copper, Silver, or Gold, never exposed to the vehemency of Fire, but still endowed with its own Sulphur, endowed with power of tinging and perfecting Gradation an eighth part. Put $\frac{3}{4}$ is, or $\frac{3}{5}$ of the mixture into a Crucible at one time, and set this Crucible under the Receiving Vessels of our fifth Furnace, and with a live Coal kindle the Fulmen, and then the Orifice being well closed, you will find and observe the Gradation of Iron unto Copper, Gold, or Silver, according to the diversity of matter added to the Fulmen. Here most commodiously may be used Steel-Needles; these I have often drawn out of a Crucible, wholly changed into Gold.

Note. He who intends to make Gradation with Gold, must necessarily apply Receivers, in which he may collect the volatile Spirits of Gold. If a man be contented with a very small quantity, he needs not use Receivers, afterward (being first assured of the certainty of the Operation) he may build a Furnace fit for it. I built such a Furnace, in which the last Summer, for my Friends sake, I performed this Operation.

Note. If a sufficient abundance of good Metals be wanting, that your labour may not be in vain, it will be requisite to make the same spiritual with *Sal-Petre*, before they be added to the Fulmen. If you would make trial of graduating into Gold, to $\frac{3}{4}$ j. of the Fulmen, you may add 3 j. of fulminating Gold (precipitated with spirit of Urine, not with *Lixivium*) and your endeavour will have good success, if you proceed right.

By help of this Fulmen, all Metals may be changed into Gold or Silver; that is, the true Regal Cement of ancient Philosophers, which they always kept secret; only *Paracelsus*, in his Preface to the Book of Cements, was willing to make some small discovery; *You must not (saith he) so much regard the Ingredients of the Cement, but the way of cementing is only to be considered, the Fire only, which is in it, must be endowed with power of fixing and graduating.* Yea, in his Book of Vitriol he almost speaks the same.

But some one may say, What is that Regal Cement, or what is the way of using the same? Although this hath been always kept as a Secret, yet I in these last times communicate the same to All. There is indeed no Metal, which may not (even without the addition of any other thing having power of perfecting Gradation) by the help of this only, be turned into gold; as in our work of it we largely shew. Yet this Operation is not done with so great profits, as that which adds Powders perfecting gradations to the Cement; nevertheless it is sufficient to shew the possibility.

But that the Doctrine of *Elias the Artift* may be more manifest by the aforesaid *Paracelsus*, we thought good here to subjoin his own words at large, which take as follows.

THE BOOK OF Philip Theophrastus Bombast

Of Hohenheim, Monarch of Philosophers, Prince of Spagyrits, Chief of Astronomers, Paradoxical Physician, and great Master of Mechanick Secrets.

TOUCHING

The TINCTURE of Natural Things,

Against Sophisters born since the Flood, in the Age of Our LORD
JESUS CHRIST the Son of GOD.

THE PREFACE.

Since thou, Sophister, with foolish and lying Words, hast reproached me in all places, because I was born in Helvetia, that I am rude, and understand or know nothing; also, that being one Letter more than a Physician, I rove and wander about from one Region to another: Therefore I purpose in this small Treatise to discover and lay open to the World, ignorant and unexperienced men; also that in the first Age good Arts were in being; and what your Art is able to effect against mine and mine against yours, and what is to be judged of either, and how Posterity in the Age of Grace will imitate me.

Consider Hermes, Archelaus, and others in the First Age, what Spagyrits they were, and how great Philosophers. That they were such, is witnessed even by their Enemies, who are thy Patrons, (or Idols rather at this time) O Sophister. But if this had not been testified by your Authentick Fathers and falsely-reputed Saints; yet the ancient Smaragdine-Table discovers more of Art and Experience in Medicine, Alchemy, Magick, and other like Sciences, than can ever be taught by you and all your Tribe. If from the Precedent you do not yet understand what, and how great Treasures these be, tell me why no Prince or King was able to subjugate the Egyptians? Then why did Dioclesian the Emperor command all Books of Chymistry (how many soever they were he could come by) to be burnt? For their Books being destroyed, they were long since compelled to bear such an intolerable Yoke, as will in time fall upon the neck of thee and thy Colleagues, O Sophister.

In this Middle Age the Monarchy of all Arts is at length devolved to me, Theophrastus Paracelsus, Prince of Philosophy and Medicine; for unto this am I chosen by GOD, that I may extinguish all Phantasies of devised, putations, and false Works, and presumptuous Words, whether they be the Pleasies of Aristotle, Galen, Avicenn, Melic, or any other Follower of them. And my

Theory proceeding from the Light of Nature, shall never fail through its unconscancy, nor be changed, but begin to flourish in the 8th. year of the following Age. Then the Practice following, it shall be proved by admirable and incredible Signs, so as it shall be openly manifest to Mechanicks and the Common People, how constant and unmovable the Paracelsick Art stands against the Trifles of Sophisters; in the mean while that Sophistick Art hath need of Papal and Imperial Privileges, to strengthen and uphold its Impertinencies. But whereas I am by thee, O Sophister, accounted a Beggar and Vagabond, the Danube and the Rhine, I being silent, shall answer for me to thee. Often hath those imperitiously-devised Calumnies of thine against me, displeas'd many Princes and Earls, also Imperial Cities, Noblemen, and Knights; for I have a Treasure in a certain City of Forum Julii, called Weiden, hid in the Hospital there, which neither thou Leo the Roman, nor thou Charles the German, with all your Substance, are able to purchase. Although a signate Star fell upon the Arcanum of your Names, yet it was known by none but the Sons of the Divine Spagyrick Art. Wherefore since thou Verminous and Lousie Sophister, judgest the Monarch of Secrets to be an ignorant Fool and prodigal Deceiter, I will now, in the middle Age, openly discover (as an honourable profession of those things I have asserted) the Virtues and Preparation of that Tincture, for the profit and honour of the Lovers of Truth, and that the Contemners of true Arts may be reduced to Beggary. The latter Age will be illustrated and honoured with this Arcanum, as the Gift of GOD, and manifest Endowment of the true Spirit, so as from the Beginning of the World the like sprout of Understanding and Wisdom was scarcely ever heard of. In the mean while, vice shall not be able to suppress the Just, nor the Riches or power of those that are evil, be any Damage to the Upright.

Of Philip Theophrastus Paracelsus

His Tincture of Natural Things, &c.

CHAP. I.

I Philip Theophrastus Paracelsus Bombast, say, That (after the manifestation of Divine Grace) many waies to the Tincture of natural things, were found out, which did all finally tend to the same scope and end: For *Hermes Trismegistus* the *Egyptian* set about this Work, according to his own Reason. *Orus the Grecian* observed the same Process. *Hali the Arabian* persisted in his own order; but *Albertus Magnus* followed a Process very prolix. Every one of these proceeded in his own manner, yet they all attained to one and the same end at last, viz. to long Life, and an honest sustentation and Conservation of the same in this vale of miseries. At this time, I *Theophrastus Paracelsus Bombast*, Monarch of Secrets, am endowed with peculiar Gifts of GOD, viz. in such a manner, as every searcher of this high natural Work must needs imitate and follow me, whether he be an *Italian, Polonian, French-man, German,* or whatsoever he is, and whatsoever he is. Hither must you all, Philosophers, Astronomers, and Spagyrits, how high soever you be, come after me. I by my own immense Labours, will shew and open to you, Alchymists and Doctors, that corporeal Regeneration. I will teach you that Tincture, Arcanum, or Quintessence, in which the Foundations of all Mysteries and Works are latent: For every man may and ought to give credit to another in those things only, which he hath experienced by Fire. If any one, otherwise than by this experience, offer any thing in Chymistry, he is not to be believed, because the true must be separated from the false by Experience in Fire. Assuredly the Light of Nature was created for this end, viz. that by it the trial or Proof of every thing should appear; yet to those only who walk in that Light. With this Light we shall be taught by the best demonstrations, That all those who ever before me entered this so difficult Province, with their proper phantasies and acute speculations, have made trial to their own hurt. Therefore, by my Foundation, many Rusticks have been made Noble-men; but on the contrary, by the putatious and opinionative Art of those men, of Nobles, many have been transmuted into Rusticks; because they could bear golden Mountains in their Heads, before they had put their Hands into Coals. But first are to be learned *Digestions, Destillations, Sublimations, Reverberations, Extractions, Solutions, Coagulations, Fermentations, Fixations,* and every Instrument requisite for this Work, is to be known

by use, as Glasses, Cucurbits, Circulatories, Vessels of *Hermes*, Earthen Vessels, Balneums, Wind-Furnaces, Reverberatories, and other such-like; as also a Marble, Mortars, and Coals; so may you at length proceed in *Alchymy and Medicine*.

But as long as you by Phantasia and Opinion adhere to your Fictitious Books, you will be apt for, and predestinated to none of these.

CHAP. II.

Of the Definition of the Subject and Matter of the Tincture of Natural Things.

BEfore I come to the Process of the Tincture, it is convenient I should discover to you the Subject thereof; for this was always kept secret (with a peculiar concealment) by the Lovers of Verity. Therefore the matter of the Tincture (here you must understand me in a Spagyrick sense) is a certain thing, which from three passeth into, or remains in one Essence, by the Art of *Vulcan*. But that I may signify the same to you by its Name; according to ancient use, it is by many called *Red-Lion*, but by few known. This, by the help of Nature, and the Art of the Artift, may be transmuted into a white Eagle, and of one two be made; yet then the golden splendour shines not so much to the Artift, for they two kept in one shine more. Now, if you understand not the use of Caballists and ancient Astronomers, thou art not born of GOD for the *Spagyrick Art*, nor by Nature chosen for the *Vulcanick Work*, nor created to open thy mouth in *Alchymistick Art*. Therefore, the matter of the Tincture is a very rich Pearl, and a most precious Treasure, and the noblest thing (next to the manifestation of the most High) and most worthy of humane consideration, that can be in the earth. This is the *LILI of Alchymy and Medicine*, which Philosophers have so diligently sought, but through defect of intire knowledge, and perfect Preparation, they attained not to the perfect end thereof. By their Searches and Experiences, a Beginning only of the Tincture is given to us; but the true Foundation which my Collegues should

should imitate, was left to me; wherefore no man must mix his Vizors with our Intentions. I, after my long Experiences, deservedly correct Spagyrits and separate the false or erroneous from the true, having by continual Searches found out those things, by reason of which I may justly reprehend and alter many and diverse things. Yet had I found the Experiences of the Ancients more excellent than my own, I would not have sustained so great Labours; as I willingly undertook for the sake, profit, and honour of all good Alchymists, &c. Therefore, since the subject of the Tincture is so sufficiently declared, as a more faithful discovery cannot, nor must be made between two Brothers, I will enter upon the Preparation thereof; and after I have posited the Experiences of the First Age, I will also add my own Inventions, unto which, in time to come, the Age of Grace will adhere, whomsoever thou (*Sophister*) from thy own Philophy in the mean while shalt constitute Patriarchs or Principals.

CHAP. III.

Of the Process of the Ancients in preparing the Tincture; and of a more short way found out by Paracelsus.

ANCIENT Spagyrits putrefied *Lili* for a Philophick Month, and then destilled from it the humid Spirits, so long as until the dry were elevated: The *Caput Mortuum* they again imbibed with the humid Spirits, and from it, by destillation, often abstracted them, and continued this Operation so long, as until the dry Spirits were wholly elevated. Then they united the abstracted humours and dry spirits by a Pelican together, 3 or 4 times, until all the *Lili* remained dry in the bottom.

Although the first Experience followed this Process before fixation, nevertheless our Ancestors often obtained their wished end perfectly. But they would have had a more short way of coming to the *Red-Lion's* Treasure, if they had learned the Concordancy of Astronomy with Alchymy, as I have demonstrated it in the *Apocalyp of Hermes*. Yet since every day (as Christ spake for the comfort of the faithful) hath its proper Care, the Labour of Spagyrits before me was vast and great, which now by help of the Holy Spirit assisting, will be eased and lightened by my Theory and Practice, and declared to all those, who abide constant in their Labours with patience; for I am experienced in the Property of Nature, and know the Essences and Conditions thereof, and the conjunction as well as resolution of the same. Which is the highest and greatest thing in Nature, never yet known to Sophisters.

When the first Age had the first Experience of the Tincture, Spagyrits of one simple made two; but afterward, when in the middle Age that Invention was lost, their Successors, by diligent search, at length happened on the two names of that simple, and with one denomination called it *Lili*, as the subject of the Tincture: Then the Imitators of Nature putrefied this matter (no otherwise than as

Seed in the Earth) for its due time; because before this Corruption, nothing could of it be produced, nor any *Arcanum* discover it self; and after putrefaction, they abstracted the humid Spirits from the matter, until by the force of Fire they were dried and sublimed; that this way (no otherwise than as the Husband-man waits on the Seasons of the year) the said Spirits might come to maturity, as one thing is wont to rise and fall after another. And lastly, as after Spring the Summer appears, they incorporated those Fruits and dry Spirits, and brought the Magillery of the Tincture so far, until it should come to its Harvest, and dispose it self to ripeness.

CHAP. IV.

Of the Process of preparing the Tincture of Natural Things, abbreviated by Paracelsus.

ANCIENT Spagyrits would not have undergone so prolix a Labour, and made such tedious Reiterations, if they had learned their Work from my School, and in their labour followed the Rules of the same, but would full as well have obtained their end with much less Labour and Charge. At this time, in which *Theophrastus Paracelsus*, the Monarch of Secrets, comes, is the Season of Invention, which was hid from all Spagyrits before me. Wherefore I only say; Take the Blood of a Roefe colour from the Lyon, and the Gluten from the Eagle, which, after you have joined them together, coagulate according to the old Process. Thus you will have the Tincture of Philosophers, which infinite men have sought, but very few found.

Whether thou wilt or no, Sophister, this Magillery is in Nature, and is a wondrous Work of GOD above Nature, and the most precious Treasure in this Vale of Miseries. If you consider it externally, it appears to be that which transmutes some vile thing into another much more noble than it was before. Yet that Miracle is produced by a Spagyrist, because he had patience, and was not weary, and by the Art of his Preparation did corrupt the vile extrinfecal Body, and from thence raised up another and most precious Essence. If thou hast learned, or knowest any like thing by the light of *Aristotle*, or from the Rules of *Serapio*, produce it here, and bring it to light by experience. Now keep the Law of the Schools, as becomes a Lover of Honour, and a Doctor. But if thou knowest nothing, or art able to do nothing, Why dost thou contemn me, as an irrational *Hebrewian* Calf, and accuse me to be a Vagabond-Circulator? Art is another Nature, and a peculiar World, as Experience witnesseth and demonstrates against thee and thy Idols. Therefore the Alchymist sometimes compounds certain Simples, which he afterwards, according to his necessity, corrupts, and thence prepares another thing. For so, very often of many, one thing is at length made, which effects more than Nature per se is able to do; as is sufficiently manifest in *Gastaynum*, where of *Saturn Venus* is made; in *Carynthia*, of *Venus Luna*; and in *Hungary*, of *Luna Sol*. Not to mention other

Transmutations of Natural things (sufficiently known to Magicians) which bring greater wonders to Light than *David* speaks of in his *Metamorphosis*.

But that you may rightly understand me, seek your Lion in the *Orient*, and your Eagle toward the *South*, which are to be alluded for this Work. You cannot find better Instruments than *Hungary* and *Hispria* produce. But if you would deduce that from Unity, through Duality into Trinity, with an equal permutation of either, then you must direct your Journey towards the *South*, for in *Cyprus* thou canst not obtain all thou desirest; yet here we must discourse no farther than at present we have declared. Of these *Arcanums*, which exhibit transmutations, there are many more, although known by few; and should they by the Lord GOD be manifested to any one, the rumour of this Art would not therefore presently break forth, but the Omnipotent, together with it, would give understanding to conceal these and other things, until the Coming of *Elias the Arab*, in which time nothing shall be hid, as not to be revealed. You very clearly see (although there is no need to speak of this here, which may by some be taken in derision) in the fire of sulphur, is a great Tincture of *Gemms*, which indeed exalts them more sublimely than Nature *per se* is able to do. But this Gradation of Metals and Gemms must in this place be omitted by me, because I have very sufficiently writ thereof in my *Secrets of Secrets*, in *The Book of Vexations of Alchymists*, and in other places. As I have begun our Ancelors Procefs of the Tincture of *Natural Things*, so I will perfectly conclude the same.

CHAP. V.

Of the Conclusion of the Procefs of the Ancients, made by Paracelsus.

Lastly, the ancient *Spagyrist*, by a certain orderly augmentation of Fire, long continued, fixed their pellicanate and dry *Lili*, until from blackness, through a change of all colours, it became red as Blood, and with its colour had put on the condition of a *Salamander*. Rightly indeed did they proceed in such a Labour; and it is equal and fit, that every man, who would compass this Pearl, should proceed after the same manner. To declare this more clearly to thee, would be very difficult for me, if you have not in the school of Alchymists learned to observe the degrees of Fire, and also to change your Vessels. If you have done this, then you will see, that as soon as your *Lili* shall be made hot in the Physical Egg, it will with wonderful apparitions become blacker than a Crow, afterward, in success of time, whiter than a Swan; and lastly, passing through yellowness, become more red than any blood. Seek, seek (saith the first Spagyrist) and you shall find, keep, and it shall be opened unto you. It would be an impious and uncomely thing to put Meat into the mouth of so perfidious a Bird. He should rather be suffered to die out, as I, and all others before me were compelled to do. Therefore follow the true Art; for this will lead thee to the perfect knowledge of That. There is no

reason to set down any thing here more amply or clearly than I have already done; let thy *Pharisaick* Schools teach thee what they will, from their own unstable and tottering Foundation, it will not reach their end or scope; but after you shall, as accurately as is possible, have learned Alchymistick Industry, nothing then in the nature of things will be so difficult, but it, by help of this Art, may be manifest to thee. Indeed, Nature her self brings forth nothing to light, which is brought to its highest perfection; as in this place may be seen by the Unity or Union of our Duality; but Man should, by Spagyrick preparations, deduce it to that, unto which it was ordained by Nature.

Thus far have I said enough of the Procefs of the Ancients, and of my correction of *The Tincture of Natural Things*, as to its preparation.

Now, we having this Treasure of the *Egyptians* in our hands, it concerns us to convert the same to our profit, which is two-foldly offered to us from this Spagyrick Magistery. In the first way, how it may be applied for Renovation of the body; in the second, how it is to be used for Transmutation of Metals: Therefore, since I *Theophrastus Paracelsus* am experienced in both diversly (according as the signs of the Work, both in experience and proof, have appeared better and more perfectly to me than any other) I will describe and propose the same.

CHAP. VI.

Of the Transmutation of Metals by Projection of the Medicine.

If the Tincture of Naturalists be to be used in Transmutation, one pound of it is first to be projected upon a thousand pounds of \odot in Flux; then your Medicine will be prepared for transmuting the Leprous humour of Metals. This is a wonderful Work in the Light of Nature, viz. that by this Spagyrick Magistery or Operation, that which before was such a Metal, should perish, and become another Metal. That renders *Aristotle*, with his evilly-founded Philofophy, a Fool: The Countrymen in *Hungaria* casting Iron for a convenient time into a certain Fountain called *Zipsobrummen*, find it consumed into a *Ferrugo* (or Iron scurf) which melted in a strong Fire with Bellows, is presently pure Copper, which never more returns into Iron. Likewise, in the Mountain *Kuttenberg* (as it is commonly called) they strain a *Lixivium* from *Marcafites*, in which Iron is presently changed into the best Copper, highly gradated, and more malleable than other natural Copper. These, and many such like, are better known to simple men than to Sophisters, for these men transmute one species into another; yet these Arts remain for the most part absconded, by reason of the notable contempt of Ignorant men, and also partly by reason of the just Envy of Artificers. In *Istria* I have often brought Venus beyond the 24 (*plus 38*) degrees: so as the colour of Sol could not ascend higher, and it was constant in Antimony, or in the Quartal Examen; this indeed I used in all Cases, as the other.

Although

Although ancient Artists were earnestly desirous of this *Arcanum*, and fought the same with very great diligence, yet very few could after perfect Preparation deduce it to its end. For the Transmutation of a Minor-Metal into a better, brings with it many difficulties and hinderances; as when Tin is to be transmuted into Silver, or Copper into Gold. Perhaps GOD will have the Magnalia of Nature hid from many Men, by reason of their Sins. For sometimes it hath happened, that when this Tincture hath been prepared by Artists, and they could not bring Projection to effect, that the same (through their neglect and carelessness in keeping of it) hath been devoured by Hens, whose Feathers afterward fell off, and grew new again, as I my self have seen. This way, by abuse, through negligence of Artists, came Transmutation into Medicine and Alchymy. For when they could not use that Tincture according to their own desire, they converted the same to Renovate Men, as you shall hear more at large in the following Chapter.

CHAP. VII.

Of the Renovation of Men.

Some of the first and ancient Physicians in *Egypt*, by this Tincture, lived 150 years. Also the Life of many was produced and prolonged for several Ages, according as we find it clearly recorded in divers Histories, which seems a thing almost incredible. For its Virtue is so admirable, as it extends the strength and vigour of the Body further than is possible by Nature, and Conserve it in that degree so firmly, as it lives safe from all Infirmities. And although it be grown aged, yet it appears as in a youthful Constitution.

Therefore this Tincture is an Universal Medicine, like an invisible Fire consuming all Diseases, howsoever they are predominant. Its Dose is very small, but the Operation of it most potent. With it, by me, the Leprosie, Venereal Lues, Dropsie, Epilepsie, Colick, Roly-drop, [*Gutta Kofacea*] and like Diseases, have been cured and healed; also, the Wolf, Cancer, *Noli-metangere*, Fistula's, and other internal Diseases, more certainly, than can be believed; of which *Germany, France, Italy, Polonia, Bohemia, &c.* will give a Testimony large enough.

Now, thou Sophister, behold *Theophrastus Paracelsus*, and consider how your *Apollo, Machaon, and Hippocrates*, natural Physicians, sought this Tincture for resisting Diseases, because all Physicians aim at long Life, and by this Universal, they, for the most part, obtained it, and that very efficaciously; and according to their own Arbitriment, named it the Tincture of Naturalists. For in all Medicine, what can be greater, than such a cleansing of the Body, by which every Superfluity in it, is totally eradicated, and transmuted? The Seed being found, all things are perfect. What profits the evilly founded purgation of Sophisters, since it removes nothing of that, which should be taken away? Wherefore the most excellent Foundation of a true Physician is, Regeneration of Nature, and Restoration of Youth: Then, that

new Essence, expels all whatsoever is adverse to its self. For this Regeneration, the Powers and Virtues of the Tincture of Naturalists were strangely found out, and until our time used by true Spagyrist, and absconded as a Secret.

OF VITRIOL.

Nature generates a Salt, called *Vitriol*. This is a peculiar kind separated from all other Salts, possessing also Virtues different from them. Its Virtues are so many, and so famous, as of right they ought to be described in this Book. For, a perfect Cure of the Jaundice is latent in *Vitriol*, also of the Gravel and Stone in the Reins or Bladder, of all Feavers, Worms, Falling-sickness, &c. And in Constitutions of the Body, it is a famous Depilative: In the mean while of other Virtues in this Chapter to be mentioned, I here am silent. The Description of this is to be directed both to Medicine and Alchymy. For in Medicine, it is an excellent Remedy; in Alchymy it is profitable for many other things. But the Art consists in the Preparation of *Vitriol* for Medicine and Alchymy. For *Vitriol* crude, is no such thing. It is like Wood, of which all things may be made. It is profitable for Medicine of the Body; it profits also in Chirurgery, or External Diseases, as the Pfora, Tetter, Hereditary Leprosie, and others; where all other Remedies are ineffectual, and as it were dead to the Disease. *Vitriol* assaults Diseases of this kind powerfully, and cures them fundamentally. Therefore the true Preparation of *Vitriol* is in a special manner to be known by Physicians. For its Virtues when crude are other, than when dissolved; and other when calcined, than when converted into a green, red, or white clear Oyl. This is the condition of it, that as often as it is reduced into another form, so often it is made a peculiar *Arcanum*.

This confounds all Apothecaries, and Writers, both *Italians* and *Germans*. For this part is such, as it alone *per se* can fill a fourth part of all their Shops, and cure Diseases proportionally. This being present, there is no need of so many Boxes, Pots, Glasses, &c. set all of a row, and disposed in order in Shops. It concerns a Physician, not to take care for so many Boxes, and Beyond-Sea Medicines, but to be circumspect, provident, and wise as a Virgin; since in such numbers of Vessels adulterate Remedies are for the most part contained. If he use the aforesaid circumspection, at his own doors he will find more choice Remedies, against all Diseases, than *India, Egypt, Barbary, or Greece* can afford.

Let every Physician follow this Basis, for it is now known even to plain Country-men, that meer Frauds are contained in those Boxes: Which, as they are for the most part of Wood, so are they that use them Wooden Doctors and Apothecaries: But like with like do very well agree.

Of the Species of Vitriol.

There are many Species of Vitriol, for they vary according to the Pits out of which they are taken. The common Probation of this is, as Coperas is proved upon Iron, but this is not true. The Genuine Probation is, that it be used crude against the Worms, in that manner as we will now explain; and accordingly as it expels Worms, so is it more or less excellent in Medicine. In Alchymy, another Probation by Cuprosity is more available; yet it may also be thus proved. If Vitriol change Iron into Copper, and that speedily, and the same be perfectly well graduated and soft under the Hammer, then is that Vitriol best in Medicine and Alchymy. For there is a Conjunction of Iron and Vitriol, where of Iron it makes Copper good and excellent. Of the best Vitriol the best Copper is made. Let no man wonder, that Copper can be made of Iron by Vitriol; for there is also this virtue in Nature, viz. that the Water of Borax makes Quick-silver of Lead. Also experience teacheth, that *Cachymia's* transmute all Metals into other, no otherwise than as Vitriol changeth Iron into Copper. Nor is Vitriol, only the transmuter of one Metal into another, but there are also other things, which have like effect upon all Metals. The reason why we know not them all, is, because Sophisters pervert Arts for their private benefit, using them only to supply their Purse and Kitchen.

In *Hungary* is a River proceeding from Vitriol, or *per se* consisting of Vitriol, not coagulated into Crystals. If Iron be put therein, and left for its due time, it turns to a Rubigo, or Rust. If that Rust be melted by a Wind-Furnace, it is presently made pure and constant Copper, not convertible into its own Nature of Iron. There are infinite Mines of Vitriol found throughout *Germany*, all which cannot be described apart. Yet the aforesaid Probations are to be used both in Medicine and Alchymy. There is besides these another Probation (not profitable in Medicine, but in Alchymy only) and that is: If the Colcothar of Vitriol do from it self by Fire, give or yield Copper. If it give Copper, then in Medicine it is weak, but in Alchymy strong Vitriol. Likewise the Colours of Vitriol are to be observed: That which is all over blue, mixed with no other Colour, is not so good in Medicine, as that Vitriol, which is (as it were) parted, and all over filled with red and yellow Lines and Veins. What in the Air inclines to whiteness, is efficacious, and fit for the green and white Oyl of Vitriol: what turns to a redness and yellowness is more excellent for the red Oyl. There needs no more to be said touching the Species of Vitriol, than what is suggested by Probation; which every Physician and Alchymist should make, according to the use he intends it for. Lastly, this Probation is never fallacious. If mixed with Galls, or Oak-Apples, it makes good Ink, then it may be used in all Cases: But if it maketh an aqueous, or waterish Ink, that needeth many additions, it is not so good.

Of the Virtues of Vitriol in Medicine: first, of it Crude, and its Colcothar.

In explaining the virtues of Vitriol, I will first speak of the virtues of it Crude, and of its Colcothar. Therefore, know ye, Vitriol is a famous Purgation, in grievous and difficult Diseases of the Stomach. For it sometimes happens, that the Stomach is disordered by Meats and Drinks, and falls into a Diurnal Disease, which continues unto death, and by depraved Meats and Drinks, it often comes to pass, that the Spleen is either contracted in their Members, or die.

Also among Souldiers, through Immoderation, it frequently happens, that burning Feavers, Dysenteries, and other Diseases arise. In all these Evils, the highest, and most excellent Remedy is a Purgation by Vitriol, which rightly and Allegorically is called *Gryllum*. Its Dose is as much as you can take up at six times upon the point of a Knife. If that Operate not, repeat the same Dose, and if not this Dose neither, give it a third time, and it will be sufficient. To the Weak, give it in Wine or Water; but to a strong Man, that is not easily Laxative, in rich Wine. It is exhibited, will thoroughly purge upwards and downwards. Indeed Hellebore, both the Spurge, Coloquintida, &c. do famously purge also; yet not with virtues equal to Vitriol. The Reason of this is, because in Vitriol is a certain fowreness, which hath a conjoined Sharpness, Acrimony, and Detersion; by which saline fowreness the Operation obtains a full and perfect power, which neither Hellebore, nor Coloquintida, &c. hath. For the Nature, or way of Purgation is here two-fold: One purgeth *per se*, the other by Saltiness. Therefore here the two virtues are better than the only one in Hellebore. In Saltiness a Specifick Form is latent, and that of such a Nature, as all Worms touched by it die. And that is a singular power, which destroys Worms, being what none of the aforesaid doth. Therefore it is evident to every one, that a Purgation, which hath in it self fowreness and saltiness, together with a Laxative virtue, doth in a double way and manner exquisitely cleanse, evacuate and purge. Wherefore, for Internal Diseases, it is twice more noble, and more excellent than other Purgations. But because I intend at large to declare to you the Nature of Vitriol, there is no need I should also explain those Internal Diseases: Yet in general I say, that a Purgation of this kind in all Vices of the Stomach, in the Falling-Evil and Vermination, is most profitable and most safe, if it be used according to the condition of time, Disease, Person, &c.

Touching Colcothar you are to know, that it is not inwardly to be taken, but only to be applied in Chirurgical Diseases, viz. in putrid Ulcers, which admit not of Sanation: For in these it discovers the way to perfect healing. Yet there are many Chirurgical Diseases, as Grievous, Malignant, Worse and Worst. Against the Worse and Worst, Colcothar is not conducent, yet is effectual against those, which consist in the first degree; and therefore to be applied to them. For the Worse and Worst of all, its Oyl is to be used according to the degree of the evil, and of the Oyl. All Ulcers of this kind, how many soever they be, are cured by Vitriol; but according to the degree, the use of it is, that it be reduced to good Colcothar, which

must be certain times extinguish'd in Vinegar; and being dry, be sprinkled on, or permixed with some Plaster, which by the Physician shall be judged apt and fit for that evil. So it makes an Escar, which taken off by Fannels, a good and easie Cure follows. But the Evil, which is not obedient to this Cure, of it you shall thus judge, viz. that there is yet more venom latent, which must thenceforth be searched out with Oyls applied; because the Basis of the Ulcer cannot sufficiently be amended with Colcothar for an intire Sanation. If crude Vitriol be dissolved in Vinegar, and the Solution thickened with Colcothar into a Powder, and so applied, it soon cleanseth the bottom of the Ulcer much more potently, than of Colcothar is said. But the best way of reducing it to Colcothar, is to extract the water thereof, and therewith to imbibe the *Caput mortuum*, until it be consumed, afterwards to dry it leisurely in the Air. If this be used, it induceth a better bottom in Ulcers. But whatever you do, mind the degree of Ulcers, Tethers, &c. Whatsoever of these is not cured, set about the Cure of, with its separated Oyl and Water of which afterwards.

Although Colcothar answer not the desired end, yet by reason of that the Cure must not be despaired of, but you must think of correcting it in distilling. For by Preparation the Medicine is brought to the highest degree, so as it even cures all Ulcerous Affects, as the Wolf, Cancer, and the like. These are explained more at large where we speak of the Preparation of them.

Of the Water of Vitriol in Chirurgical, and Internal Diseases.

Alchymy discovers many excellent Arts to Physicians; by which, wonderful Sanations of many Diseases are made. For this cause in the beginning of Medicine, Physicians always used Alchymy; because this was the Mother and Genetress of many Commodities. These two Faculties, [viz. Medicine and Alchymy] as *Sociates* so long kept together, as until Deceivers and Humourist Sophisters arose, who mixed Venom with Medicine, and made her a Strumpet. Such Medicine as this, will always remain, as long as Humourists live. These things I thought good to premonish you of, that henceforth you may give the more diligent heed to this head Chapter, by reason of its famous Medicinal Utility.

But this is always to be premised, viz. That as often as unskillful Men take in hand any Art, so often do they every way defile and corrupt it, and of a Pearl make a stinking Puddle. The very same is also committed in Vitriol. At first, the Spirit from Vitriol extracted, was wont to be graduated to the highest. By this exalted, the Ancients did perfectly cure the Falling-Evil, whether Recent or Inveterate, both in Men and Women, of what Condition soever they were. But here unskillful Laborators rushing in, attempted otherwise to reduce the Virtues of Vitriol, and thus failing of the first way and *Arborem*, they suffered that to expire, and then sought an Oyl in the Colcothar, which could not any way be made to that end, or have such a Use. For what is to take away

the Epilepsy must have a subtle, sharp, and penetrable Spirit.

In that consists a faculty of piercing through the whole Body, and of leaving no one thing untouched therein. And by that pervasion, or penetration, the Disease is assailed in its own place. For it cannot be known certainly and indubitably, whence comes the Seat, or Centre, or Period thereof. Hence we conclude, that a Physician hath only need of such Remedies, as can penetrate the whole Body. This is the Reason, why fordid Humourists heal none, but prostitute all their Doctrine and Profession. Therefore, I positively affirm, that in the Oyl, which those Laborators seek, is no penetrating Spirit. Amcer Terrestrey (as I may call it) is by them used, which penetrates not at all, but where it falls there it lies. Wherefore it is greatly to be bewailed, that the true Process is suppressed by their unskillfulness, and a false substituted in its stead. But I am persuaded, the Devil contrived that, to the end the Sick should not be cured, and the Sect of Humourists might thenceforth spread the more.

Let us return to the beginning; how the Spirit of Vitriol was found out. The Humid Spirit of Vitriol was at first distilled from its Colcothar; then it was graduated, by distilling and circulating *per se*, as the Process teacheth. This way the Water began to be used for many Diseases, both Internal and External, as for the Falling-sickness, &c. and thus a marvellous Sanation was effected. But in the extraction they were wonderful diligent; for they took the Spirit of Vitriol corrected, as above, and distilled it from Colcothar eight or ten times, with a most strong fire; so the dry Spirits were mixed with the Humid Spirits, and the Work so long continued, as until the dry Spirits came forth together with the Humid, by extracting. Afterward, both Spirits put into a Phial were graduated to the highest. This Medicine they found to be of much more powerful Operation against Diseases, and by that Medicament effected so much, as they confounded all Humourists in General. Yet here is no Correction added to it (by Artifice) by Spirit of Wine, to render it of greater Penetration. But it was of no greater degree, than as I shewed.

Now I will Communicate to you my Process, which I commend to all Physicians, especially for Cure of the Falling-Evil, the singular Cure of which, consists in Vitriol. For which cause, Charity to our Neighbour binds us to institute a more diligent Cure in this Disease. The Process is thus.

I imbibe the Vitriol with Spirit of Wine, and afterward distill it from the dry and humid Spirits: This being done, I find the following Addition to be very profitable, viz. If Spirit of Tartar, corrected, be mixed to a third part of the Vitriol, and Spirit of Treacle-water Camphorate, be added in a fifth part, with respect of the Vitriolate Spirits. Thus I administer it, before the assault of the Fit, or certain times in a day. This Medicine is famously efficacious against this Disease; yea, so excellent, as a better cannot be desired from Nature.

Therefore, the first Process invented by the Ancients, is to be retained with the said Correction, viz. by imbibing with Spirit of Wine before distillation, and by adding the Spirits of Tartar and Treacle-water after distillation, as is said. For so is attained the Heart of Nature, and every Virtue.

I hope I shall not be blamed, but commended rather by every good Man, that considers the horridness of this Disease, which would even move a Stone to Commiseration. Since so great is the vehemency and horridness of this Disease, as almost any Man may lawfully say, Cur'd be all Physicians, who passing by such Sick, yield them no relief, but like the Priest and Levite in Jericho, who forsaking the wounded man, left him to be cured by the Samaritan. I pray here give your judgment, what Condemnation were that Priest and Levite worthy of, who passing by the distressed, stopped their Nose, as the Proverb is; surely they were worthy of Hell Fire, from which is no Redemption.

And who can judge any other of all Physicians, none excepted, that look upon this Disease, and yet pass by with their Nose stop't? Who can otherwise say, than that they must render an account of it at the last day? Notwithstanding, all these men are generally so disposed, as they will not wag their hand, or bestow one penny, for acquiring a more certain Foundation for the cure of this Disease. Did they not, as it were, by compact imitate Priests and Levites, but would rather study to imitate the Samaritan, GOD certainly would recompense their fidelity with a manifestation of the Secrets of Nature, with which they might be helpful to the Sick. And if such Virtues were not incited in Nature, the Almighty would undoubtedly create them anew. Therefore I testify, together with you noble and ignominious men, that all Doctors generally have basely erred and deviated from the Truth. Whatsoever those Seducers, Galen, Avicenna, &c. foolishly devoted, to that they adhere, and rely upon those Lyes, so far are they possess'd with the Devil, that they cannot exercise Charity towards their Neighbours; and in this manner they make themselves the Sons of Damnation; for their only study and drift is to heap up Wealth. The Kingdom of GOD is first of all to be sought, yet not after the fashion of the Priest and Levite, but according to the Samaritan nature. If we be merciful, and follow the example of the Samaritan, GOD is with us, who will presently help us with a Remedy not yet created in Nature. In the mean while, since Physicians deal with the Sick Levitically and Priest-like, the most Wise GOD withholdeth Medicine, and reserves it to himself. The Sick flee to the Kingdom of GOD, but Physicians to the Infernal Abyss, prepared for Levitical Doctors of the same sort. Therefore open your eyes and look, the way is two-fold, one leads to infernal shades, this the Levites follow; the other way leads to Heaven, unto which the Samaritan directs his Feet.

That Vitriol Arcanum, and its extraction, is not only excellent in the Falling Evil, but is also conducent in other Species like unto it, as in Swinnings, Excretes, &c. Also it is after the same manner beneficial in all Oppellations and inward Imposthumes, and is no less efficacious in precipitation and suffocation of the Matrix. Yet in it are many more Virtues acquirable than are here commemorated, if greater diligence in inquiring be bestowed thereabout, and Physicians themselves would be better men. But the Devil, whom they serve, possesseth them, and flits them up to the hating of Him who loves Verity. Even thus things are acted about the Health of Good Men.

It is further to be known, that the aforesaid Receipts of the preparation of the humid spirit of Vitriol cannot more clearly be described; for to understand that, a sufficient Artificer is required; those fordid Decoctors cannot understand a thing of so great moment. Therefore you are only to expect all-sufficient Information from true Artists, and Alchymistical Laborators; so also by them you must be fully instructed about the correction of Spirit of Wine. For the Doctors of Academies are so very rude, as they can scarcely discern Agarick and Manna. Yet this kind of Alles are created Doctors. You have Treacle-Water contained in my practice, in the Chapter of the Cure of the Falling-Evil; what others there are of this kind, are not here to be recited. By this Chapter you may learn, That the Art and all Virtue of Vitriol, consists in well-extracting the Spirit, and graduating it to the height, and by addition deducing it to Penetration, whereby it may search out the center, root, and seed of the Disease. For 'tis impossible so exquisitely to find the places, as those Doctors babble of Humours. Certainly, the Foundation is not yet known, as what it is that makes a Disease, or where that lies, or what that is, which casts a man into so grievous a Fit. Therefore every Operation is only to be committed to that Arcanum, which Nature hath directed to the Disease; that Arcanum searcheth out his Disease, as the Sun penetrates all the Angles of the World. Briefly, I say, whosoever endeavours to be a true Physician, ought first of all to learn to be a Samaritan, not a Priest or Levite. If he be a Samaritan, all things he hath need of will be given him; nothing will be occult to, or hidden from him. But to him who will first be a Priest or Levite, nothing will be given, unless it be Infidelity, which he also had before. Thus are such men paid in their own Coin.

Of the Red Oil of Vitriol.

YOU are also to understand, how of the Calceolar by a Retortive Distillation, in a Chymical manner, a blood-like and most sower Oil may be prepared. This Oil Laborators have judged more efficacious in the aforesaid Diseases than the Spirit, but that their judgment was erroneous. The vulgar Process of preparing it I think not to mention here; for every thing of moment is cited in manual Operation and diligent Inspection, also in convenient Instruments. As touching the Virtues you are first to understand, that it is a sower thing, so far exceeding all sownness, as nothing that is more sower. It likewise contains a corrosive nature, for which cause it had need be used circumspectly and warily, viz. not perse, but in a good Concordancy and suitable mixture, with respect to that against which it is exhibited. We will explain this by Example: The Viper is a Serpent most venomous, therefore of no use alone, but in Composition it is most excellently useful; for of it Treacle is made. The very same is also to be judged of this Oil, viz. That it is not to be used alone,

but

but in a Composition suitable and fit, as of Treacle we have said. By reason of its sownness, it profits a Stomach free from Cholera and an Imposthume; but if either an Imposthume or Cholera be present, it is manifest by Experience, that it hath no good effect. For the Imposthume is enraged by it, and exasperated by such sownness, passeth into an unquiet matter. And if Cholera be present, a mutual Ebullition and Strife is caused, no otherwise than as is seen between Aqua-fortis and Tartar, neither of which can remain or persist with the other. Therefore diligently and circumspectly consider, lest you erre to the damage of the Sick. In Composition this Oil is profitable for other Affects, as in all Fevers and want of Appetite, if given in the aforesaid manner, viz. in a good concordancy. There are many other Virtues said to be in this Oil, but Experience confirms few of them. I have seen and proved those to be egregious Lyes, who have boasted, that they could do Wonders with this Oil. It is true, it is useful in the Stone and Gravel, yet I have known no man cured by it. In all it doth something, but not to purpose: Yet in my Practice, in the Chapter of the Cure of Gravel, you shall find a Composition thereof, for this and other Affects. But as I said of the Corrosion of this Oil, used by it self, so I do also affirm, that the same Corrosion hath power of diminishing or breaking the Stone, and expelling Gravel; yet that is done with so great difficulty, as there is need of some other Invention, than hath hitherto been practised; for otherwise it may not safely be used. As much as any man hath gained by Experience, so much I allow of. This Medicine is new; wherefore it daily ought to be proved anew, and as oft as need is permixed with new Compositions.

But as to Chirurgery, of this Oil you are to note, It doth indeed excite great dolours, yet it infers present Health, even in the most difficult Diseases. For in the Hereditary Scab of the Head, called Achores, it is so effectual, as it takes the same off in one whole piece, as a Man pulls off an Helmet from his Head. With this Oil the whole Head is to be anointed with a Feather, where it is hairy, for 3 daies continually; then expect its Operation. If you see it not sufficient, anoint it more often, according as the Scab shall be. The same Oil may also be co-tempered and mixed with Water of Selandine, and the Head often washed therewith. Yet he who would be healed, must not think that his Cure can be effected without dolour; for the condition of the Sick is the same as of a pregnant Woman, which brings not forth without exceeding great pain. So Meat, without pain, cannot be prepared for us; with dolour and sweat also we are freed from Diseases. This way all Tumes, Scabs, and Itch, together with all other Vices of the skin, howsoever arising, are healed; and likewise the depraved Tongue, by anointing herewith, is cured, and the Wolf and Cancer expelled and mortified; yet in this case you must diligently observe, if the Evil be very forcible (that the Venom so deeply penetrate, as the quick and found flesh be in success of time like to be eaten away and fall off) to apply a good Oppodeloch for a defensive.

But in whatsoever effluenous Ulcers, other Remedys be deficient, this Medicine yields relief, by reason of the degree it holds. It will not be improper to mix this Oil with some fat Unguent, and so apply it. This way it will cause less pain, but it is not so swift in operating: Dolour can by no means be avoided, no more

than a Woman in Travel can be delivered without pains. The best, and most sublime way of preparing this Oil, is to destil it into spirit; so a very small weight will be sufficient in all the aforesaid Diseases, which are then removed with little trouble.

These things I have found out by experience of the Red Oil of Vitriol, which in grievous Diseases is an excellent and famous Medicine; for fetid and contagious Diseases of this kind, as are the Scab, Itch, Letter, Achores, and other like Affects, which are of affinity to the Leprosie, may be cured by this great Gift of Nature, which is here offered to the Physician, by which he may effectually cleanse and heal diseased men. There is not an abundance of Remedies of this kind, therefore I will carefully preserve this Oil, &c. for all other Coctures are nothing worth, nor do they remove these loathsome Diseases, but with their fatness do cause them to be reincrudated and encreased.

Of the White and Green Oil of Vitriol.

IT is worthy of consideration, that from crude Vitriol an Oil is destilled by descent, sometimes white, and sometimes green, according to the condition of the Vitriol. This Oil deserves a singular commendation; for since it is prepared of crude Vitriol, therefore it also contains the spirit of the same, touching which I have above treated. This Oil, made by descent, demonstrates by those its Virtues that it is an excellent and admirable Remedy for the before-mentioned internal Diseases. The same Oil whether it be white or green, (but the green is better) if circulated and mixed with the above-commemorated spirit of Vitriol, is a certain and indubitate Remedy against the Falling-Evil, and all its species. But it is worthy your observation, that this Disease is seldom so solitary, as not to have other Evils concurrent with it. Indeed, that such a concurrency is, is evidently manifest by all Diseases. Hence it is now clear, that a Remedy against the principal Evil is not sufficient, but Secrets against concurrent symptoms are also required. For this cause in my Practice I have designed a peculiar Chapter of the Falling-Evil, not for the principal Remedy sake, which in this place is sufficiently described, but only for the understanding of those things, which concur together with the first Affect. If other Accidents do not concur together with the first Affect, there is no need of exhibiting other Medicaments than the principal, which is sufficient. Therefore, touching the green Oil, thus do ye: Graduate it to the highest; that it may be separated from its terrestreity and faeces, in Balneo first, afterward in dry Fire. So in Balneo the phlegm is taken away, and the terrestreity removed by dry Fire, and the spirit of the Oil only is collected, which in it self is circulated. Afterward you may make addition with Spirit of Wine, but there is no need of adding more, if it be only to be used as a Primary Remedy, without Medication of coherent Diseases.

It

It is to be given in Water of Pæony, always before the coming of the Fit, whether it be frequent or seldom. &c. Therefore mind the Paroxisms. As soon as the spirit of the Oil finds out the center of the disease, then the Fit is pacified, and thenceforth waxeth more and more gentle. But when it exerciseth a power of Healing, it first of all excites a *Vertigo* sensible to the Sick, who notwithstanding do not fall nor foam, nor are shaken, or quake, nor deprived of reason, but are seized with a gentle sleep, and are much better presently. At length the *Vertigo* also ceaseth, and the sleep is ended; yet in the mean while the Medicine mult continually be applied, several times reiterated, according to the condition of the Disease and Patient. This way the Cure is to be followed, and all things diligently administered. This belongs not to a drunken Physician, or *Doctor Levite*.

Of the Vitriolate Oyl to be used in Alchymy, and also of the Crude.

Now to speak of the Alchymistick Virtues abounded in Vitriol: I will first propose to you the Virtues of Crude Vitriol: How every Crude Vitriol of Iron makes Copper. For the Alchymist doth not this, but Nature, or Vitriol, by the Operation of the Alchymist performs the same. And this is the sublime power of Nature. And in the light of Nature it is done, but not without admiration; to see any Metal, as it were put off it self, and become another; which is almost, as if of a Man, a Woman should be made. But in these things Nature hath her singular Privilege granted by GOD, for the sake of Man. I speak this of Transmutation, that you may understand, that the foolish Philosopher *Aristotle*, was not well grounded in his Philosophy, but was merely fatuate. Now I will give you the Receipt, that you may know how, in all places of Germany, to make Copper of Iron; whence we may easily gather, what the power of Transmutation is, and that many other Transmutations may be made; although they as yet be unknown to Us.

To change Iron into Copper is not of so great moment, as to turn Iron into Gold. Therefore, what is least, GOD manifests, but the greater is yet hid, until the *Elias of Sciences* shall come: For Arts also, want not their *Elias*. The Receipt of this Transmutation is thus.

R. Of the Scales, or Filings of Iron (without all other Metals, as Copper, Tin, &c.) lb j. Quick-silver, lb s. Put both into a large Iron Pan, or Pot, and pour on them one Measure of Vinegar, and of Vitriol $\frac{3}{4}$ iij. Sall-Armoniac, $\frac{3}{4}$ j. Boil them together, and continually stir them well with a Wooden Spatula. If the Vinegar vapour away, pour on more, and add new Vitriol.

By this Decoction, Iron is changed into Copper: If it be made Copper, it all passeth into the Quick-silver, the boiling being continued for ten or twelve hours. After the Cocture is ended, separate the Quick-silver from the Iron (as much of it as is left), and well wash it, that it may be clean. Put that Quick-silver into a Bag made of Leather or Cotton, and press

it out; so you will see an Amalgama left. Suffer that Amalgama to expire by Vulcanick Heat, and you will find pure and good Copper. Of this Copper, R. $\frac{3}{4}$ lb. of Silver as much, make them flow, or melt them together, and the Silver will presently ascend to the sixteenth degree. This way you may prove, that such Copper is made of Iron: But that the degrees are fixed, is not true. Yet he, who in Regal Cement is able well to operate, may thence receive a sufficient Recompence for his pains. The whole business consists in the Operation, and in Judicious labouring: Yet in this most men erre. Nevertheless, by the aforesaid Process, you may always make Copper of Iron. I fo often inculcate this, only to confirm the transmutation of one into another.

Also of Vitriol such is the Nature, as if the Colcothar thereof be calcined, it with easie liquefaction is turned into Copper. For in it is a wonderful Coppery Nature, and in Copper also a Nature of greatest Affinity to Vitriol. If Copper be dissolved in *Aquafortis*, and Crystallized, it makes every Copper Vitriol, and it is no more Copper: So also of Vitriol, Copper is made; and that is no more Vitriol. Therefore the Reason of such Affinity in Vitriol and Copper is very strange. What is Cuprous or of Copper, makes good Vitriol. So Verdigrease, which is good and highly gradated, gives a Saphyrick Vitriol.

Although it may seem ridiculous for us to discourse of these things; yet it cannot be deny'd, that in Vitriol a Tincture is latent, which is of greater efficacy than many can believe. Blessed is he that understands this. But touching the Oil of Vitriol, further note. If the Oil of Quick-silver, and this Oil be conjointed, and so coagulated in their Process, a Sapphire of wonderful Nature and Condition is produced: Not indeed a Sapphire stone, but like unto it, of an admirable Tincture; of this I will say no more. Hence it is evident, that stupendous, and to be admir'd *Arcanums* are treasured up in Nature, and in many other things created by GOD, and produced by Nature. Now, it would be more commendable for us to search out these things with an indefatigable labour and study, than to consume our days in Luxury, Drunkenness, Whoredom, &c. But at this time, Lascivious Whoremongers, are in greatest Honour, and so are like to be, until with these Vices one third part of Men be suffocated, and another third part destroyed by Pestilence; so as one part of the World, will scarcely remain untainted, or unconsumed. For with this abomination the World cannot long endure, nor good Arts flourish. Therefore, of necessity these evil Courses must be annihilated and cut off, otherwise no good can have place. But when this evil time is expired, the Golden age shall flourish; that is, Man at length shall use his own Understanding, and live as a Man, not as a Brute, nor act as a Swine, or lie in the Caves of Murderers or Robbers.

Therefore, since I have communicated to you these things of Vitriol, out of my good affection to all; I do earnestly entreat all Physicians in general, when they shall see the unhappy and miserable sick fo afflicted with that most grievous Disease the Falling-Evil, seriously to consider, what GOD the Creator, their own Consciences, and Charity to their Neighbour, command and require of them in such a deplorable State as this; and not contemn, or slightly esteem of the Virtues, which by GOD himself are infixed in Vitriol. Let Charity move you night and day to be diligent in these things: Let none be found idle, but every

every one make it his business to help his needy Neighbour: But be not you deterred herefrom, because Lawyers do not this. Hear what Christ said: *Woe to you Lawyers*. Surely this is not a light Saying, Nor take you any offence at *Theologians*, because they rather seek Rewards and Salaries, than take care for the sick: These are they, which in *Jericho* passed by. Be ye *Samaritans*, and press after the *Samaritan* Vir-

tue: So GOD will confer on you such profound and necessary Gifts, as in curing the sick you shall be sensible of no Deficiency. All things you have need of shall be given you, do you only search out this Treasure.

Thus far *Paracelsus*.

An Admonition.

Although all things we have in the foregoing Discourse proposed, touching our *Sal Mirabile*, be contemporaneous to Verity; and the Virtues, which we have ascribed to it in Medicine, Alchymy, and various Arts, do powerfully discover themselves, yet we find very much diversity in it, according to the diversity of matter, of which it is made. For, that which is prepared of Vitriol, is of a far other Nature, and endowed with far other Properties, than that, which is made of *Sal-Nitre*. And what is made of common Salt, agrees with neither of these: For one possesseth a greater sharpness than another; yea, this more than that, dissolves Metals. The more potent, are fit for Transmutation and Solution of Metals; the more weak subservient to Medicine; the weakest, and most sweet, profitable for multiplication and propagation of Vegetables.

These things, he who would reap the desired Fruits of his Labours, ought necessarily to know, and consider accurately of. For if any one, in hopes of future Multiplication, committed to the Earth the Seeds of Vegetables imbibed with the stronger Salt, he will indeed never obtain his desired end, nor will the Earth give forth any Plants, because such sharp Salts do rather destroy, than augment Vegetables. In like manner, Metals are delighted with a convenient Salt, viz. with the more sharp, as Vegetables are with the more sweet. Therefore, when we find our labour to be frustrated, we must not impute that to the *Sal Mirabile*, but to our own Unskillfulness.

Indeed these Salts are endowed with far more noble Virtues than we mentioned in the precedent Discourse; but the high Ingratitude of Men of this Age, permit us not to discover the same. For if you communicate your Secrets to those Men, from whom you cannot require a promise of Secrecy; be assured, the knowledge of those Secrets will presently come to others, who will proudly use the same to thy Disparagement.

If you do the contrary, and keep to your self, whatsoever you have purchased by your own Labour and Costs; you will create Enmities to yourself: So as which way soever you take, you will sustain loss.

The Consideration of these things, have caused me to resolve to expose my Laboratory, with all

my Arcanums, to the view of others. The end of this only was to exhibit to the sight of all, the truth of those things, which I have purchased with indefatigable Labour, and communicated to the World by writing; that this way, the Mouths of the Malevolent and Ignorant may be stopped.

I could, if it were needful, give various other Reasons, by which I was moved to make my Laboratory common to those that desired it.

Now the year is past, in which I promised in my fourth part of the *Prosperity of Germany*, I would build a Laboratory, and exhibit the Wonders of GOD to my Friends. I then publicly and privately demonstrated various most excellent Inventions, not without Labour and very great Charges, all which I value not, since I know, that by this means I have discovered the Truth to many, which they also will publicly own to the honour of the most high GOD, and Correction of envious Detractors.

I did purpose also, in the following year, to continue my Labours for the sake of faithful Friends, but (besides other hinderances) my Age prevented that. Nevertheless, those, to whom I have committed my Laboratory, will perform the same, and exhibit a Light to this blind World. This I was willing to signify to all, that they may for the future cease to trouble me with Letters.

But whilst I exhibit the Virtues of my *Sal Mirabile*, and to it (prepared in Glasses after the above recited manner) ascribe the virtue of changing imperfect Metals into Silver and Gold, I would not have this matter so understood, as if we could by the help of it acquire to our selves Gold in a very great quantity, it is sufficient to have demonstrated the possibility (of Transmutation) and the same to be proved by a small quantity.

It is most certain, that very many Medicaments may be prepared, by the help of it, against various effects of the Humane Body. Also it is most certain, that it is very conducent for a particular gradation of the Minor Metals into better. Believe me, that have experienced the same; if you rightly proceed, you will reap no mean Fruits.

But touching the true Universal, I do question, whether by the help of it, it may be procured. Assuredly, if common Gold, as to its degree, can be changed above what is Natural, Why should it be judged impossible, to exalt it further, in length of

Q 99 time?

time? My decrepid Age forbids me to put my hand to this Work; yet to Posterity (betterable than I to sustain the heat of fire) occasion is given, by Prayers and Labour to search further; perhaps, GOD will grant to them, what he hath denied to us.

This Operation, by which we peculiarly draw profit from the Minor Metals, cannot be performed in common Crucibles, as we before said; because they are obnoxious to breaking, and so the Liquors are easily lost; but in such as will not easily break, unless after a long time, and will not permit the humid Salt to run out. Here it will be needful to peruse those things (relating to this matter) which I mentioned in the Third and Fourth Parts of the Prosperity of Germany.

To prepare these Crucibles is a great Work, greater to make some Pounds of Salt, or rightly to use the same; but greatest of all, (and in which the sum of all consists) to know what Metals are to be joined, or in what quantity. Here many will have enough to do, and bear a loss, although they enjoy my Secret Furnace, and know how to make the Salt of Art in abundance.

Besides all these, we must needs crack the hard Nut, if we will eat the sweet Kernel. It is required of us to know an easie way of separating Gold or Silver from fixed Metals; for such a Metallick Mass, altogether untameable, cannot be separated by the help of Lead; per se, as Ductile Metals; but here is need of another Separation; which is the principal thing.

Nor should any Man persuade himself, that all things are here so clearly written by us, as he can by their literal sense most easily infiltrate the Operation. For there is need of a long time, and a skilful Master. It would be a very inconsiderate thing to set about those things, of which we have no knowledge.

Although this is my Admonition, here often repeated, yet there will be some, who neglecting it, will set about the said Operation, and perhaps find out various profitable things: In like manner, there will be various found, who following my Precepts, will reap much benefit from the Minor Metals.

Who can deny, but that *Mary Rama*, a *Brittain*, hath Prophesied truly, viz. That true Alchymy should flourish in the Year of Christ, 1660? I my self have not seen this Prediction, but have it from the Relation of others, whereunto I refer the Reader. And add, that if such a Prediction were not, daily Experience doth abundantly witness, that egregious things are here and there performed in Metallicks, by help of my *Sal-Mirabile*. And there is no doubt, but that all Darknes will daily more and more be dissipated by the power of this Light.

I have unto some communicated the use of this Light for their proper benefit; but these, contrary to my Intention, have caused what I thought to have kept secret, to be spread abroad in publick and many have hit on the right way leading to Verity. If this be done without my knowledge, what would not have been done, if my Laboratory had been open for a year longer? Certainly the World would have shewed it self other than it is, and altogether new; which the new and great Star extending it self from the South to the West, seems to indicate.

Let the most high GOD grant what are necessary, and salutary for us, turn the Ungodly into the right way, and give to his own Children, Rest and Peace, that his most Holy Name and Truth always to be magnified, may not be totally suppressed by the Impious. Amen.

ANNOTATA



ANNOTATIONS

UPON THE

CONTINUATION

OF

Miraculum Mundi.

Explaining and Defending the *SECRETS* therein contained; As also the True *Aurum Potabile* therein mentioned.

IT is truly said, that He who builds an House by the Highway expecteth his Building to the judgments of all sorts of men, and to their censure especially who have not skill enough in Architecture, to erect a Country Cottage. The same is wont to happen to those who write concerning things not common or unknown. For you shall presently hear People saying, *Who knows whether this be true or no?* thereby signifying that they cannot perceive those things which exceed their Capacity; but nevertheless they will not altogether reject them, because they are yet in doubt concerning the truth of them. This their doubting is not to be taken ill, because it proceedeth from ignorance, but not from envy. On the contrary, there is another sort of perverse men, who being puffed up with their own putatious knowledge, despise unknown things, not out of simplicity or ignorance, but out of a meer diabolical envy to those who have a greater knowledge and experience of things than themselves.

This hath also happened, and doth daily happen to me, especially since the publishing of my *Miraculum Mundi*, in that I have there disclosed Secrets of great moment, of which the Vulgar, nor yet the bubbles of Envy, have plainly no knowledge; and therefore out of meer Envy, reproach them for Unprofitable and False.

But to stop the mouths of such persons, I intend shortly to build a spacious and well-furnished Laboratory, and in it to place a good Laborious Operator, who being occupied therein with continual Labours, shall shew the Divine Wonders to those who desire to see the same. Which being done, I shall have no farther need to defend my Writings against every Calumniator; seeing that I know there will be those (GOD willing) hereafter, who will defend the truth which they have seen with their eyes and handed with their hands.

In this Laboratory shall be seen not only those Artificial distilling Furnaces, and my Presses for Wood, with the circulatory Instruments necessary for the easie making of Salt-Petre; but also those things shall be shewed, which I have treated of in my *Miraculum Mundi*, and its Continuation, yea, and much more than I have there declared.

Those things also which I have ascribed to my *Aurum Potabile* shall be demonstrated to be the very truth, viz. That crude Mercury, in an hour or two's time, may be by it converted into pure Gold. Nor shall this only be proved, but also that after my *Aurum Potabile* hath tinged and changed the φ into pure and constant Gold, that nevertheless it hath yet great Virtue, viz. that any Arsenick, whether white or yellow, being digested in it for some hours, is so changed, that its poisonous quality passeth into a good Medicine, resisting all Poison. Nor doth it only become a powerful Medicine against venomous and incurable diseases, which cannot be eradicated by purging, bleeding, sweating, and the like Remedies, whilst it Tinctureth the evil Humours in the Blood and other parts of the Body, and changeth them into good Humours. But this also being changed into Medicine, and its Venom converted, sheweth its power in Metals; if it be cast upon melted Copper, then the Copper poured out and proved on a Cupel with Saturn, leaveth behind it some good Silver and Gold. These two proofs are sufficient for the defence of my *Aurum Potabile*. But that any one may be yet rendered more certain, after those two Experiments, viz. the coagulation and transmutation of Mercury into pure Gold, and the conversion of poisonous Arsenick into a safe Medicament, he may yet try a third, and that indeed incredible, with the same *Aurum Potabile* that hath been twice used, as before, and this not upon mild or slight Poisons, but upon the most dangerous and indefensible both to Men, Beasts, and all living things, to wit, Mercury sublimated,

mate, which being digested for some hours in the said *Aurum Potabile*, layeth aside all its horrid and formidable Venom, and passeth into a safe Purging and Diaphoretick Medicine, and losing its former white Colour and corrosive Venom, it becomes a sweet red Powder, purging out the *Gout, Pox, Leprosie,* and other detestable Diseases, and impregnate Saturn in some measure with a Golden Tincture. So also white Arsenick, after digestion, putteth off its white colour, loseth its corrosive faculty, and is changed into a sweet and yellow powder.

These Experiments and Proofs ought not to be hidden to the Studios of good Medicines, but to be made manifest to the everlasting and immortal testimony of the Truth, against all ignorant Sophisters whatsoever.

I have, for my defence, the most sharp Sword of Truth, whose edge if any desire to feel, let him come forth; the defence of the Truth will be grateful and easy to me, although the malice of the whole world should oppose me: I here challenge all those Calumniators who being moved by a diabolical envy, have endeavoured to oppose my most true Writings; let them come forth with their Eyes into the open light, and into the view of the whole World, and shew any Experiment like to those which I here promise to shew, that we may see how filthily or basely they will appear, like the darkness vanishing by the light and splendour of the Sun. If they cannot, as indeed it is not in their power, (for he that hath any knowledge of things never contenteth with a good one) nor will be possible for them to do; so far much as they know nothing, it is but reasonable that for the time to come they should refrain their virulent tongues, and cease to calumniate those things which they neither know nor understand.

I do not wonder that those Slanderers, attempting the coagulation of Mercury into Gold, have erred, seeing that it hath sometimes happened to my self, that I have erred two or three times together, and could not effect that Transmutation, until the cause thereof was known to me: For if through too much haste the humidity of the *Aurum Potabile* shall exhale or evaporate too fast, the Mercury being dried up, cannot be sufficiently penetrated, nor thoroughly tinged.

An error also may be committed, if the glass containing the Mercury and the *Aurum Potabile* grow hot too fast, so that the Mercury with the *Aurum Potabile* boil, and leaps, disperseth it self by too much motion, and exhibiteth it self in form of a powder, when it ought to remain in the bottom, concreted into a round mass. So will he also greatly erre, who shall use Mercury that is not pure and clean, but adulterated, and defend with many sordes or impurities, which Impediments deny ingreſs to the Tincture, and render the trial uncertain and precarious. Therefore it is necessary that the Mercury be first well ground with Salt and Vinegar, in a *lignum vite,* or Stone or Glass Mortar, and by a diligent washing freed from all its blackness, whereby it more easily admitteth the Tincture. I have found that Mercury very fit for this Operation, which is sublimed by the *Fulmen of Jove,* into which my *Aurum Potabile* hath a swift Ingreſs, and tingeth the whole of it.

Truly it shews the great ignorance and boldness of those Calumniators, to dare to spread such false clamours and rumours, saying, *That Mercury cannot be indeed tinged into Gold by my Aurum Potabile, but that*

the Gold which was before in my Aurum Potabile applieth it self to the Mercury, and in some sort coagulate it, but doth not render it fixt and constant. But this is indeed a very rude and ignorant Assertion, which every one but meanly versed in the handling of Gold and Mercury, is able to detect of Folly.

For if common Gold, dissolved in Water, would readily coagulate Mercury, what should we further seek or desire? But this is greatly wide of the matter, seeing that in all such Solutions the Gold indigestion adheres to the injected Mercury by precipitation, and passeth with it into a white *Amalgama,* the Mercury constantly persevering in its pristine Nature, not admitting the least transmutation into Gold, the which exceedeth not the knowledge and capacity of Rusticks, but is difficult to be understood by those putative Doctors, who believe such things to exceed all Belief.

It is well known, that the pureſt Gold hath no more of perfection than what it needeth for its own defence; that hath not the least power to amend any other metal, and to render it fixt and constant, much less that it can coagulate Mercury, (the desiderer of all Alchymists and Sophisters) into Gold. Of both is made a white *Amalgama,* but not hard yellow Gold constant in the Fire. He that believeth not me, let him make trial himself, and he shall find it answerable to my words. Besides, all corporeal Gold refuseth solution by fixt Nitre, of which my *Aurum Potabile* is prepared, the which, if it were yet possible, the Gold would not be hid in it, but the solution would be yellow, and would colour the skin with a subrid or blackish colour, which my *Aurum Potabile* doth not. Therefore its tinging Virtue consisteth not in corporeal Gold, but in a golden Tincture, from the first *Ess* of Gold, converted into an Astral Essence, by the benefit of Art. By a like reason the *Astrum of Luna* impresseth Mercury with the nature of Silver, the *Astrum of Venus* transmuteth it into Copper, the *Astrum of Mars* converteth the same into hard Iron, the *Astrum of Jupiter* of it maketh Tin, and the *Astrum of Saturn* investeth it with the nature of Lead. For Mercury is transmuted into that Metal, whose *Astrum* it shall receive. So the *Astrum* of Mercury changeth all the metals into a running *Argent-vive,* although this transmutation brings little or no profit. Nevertheless, I intend to shew the power of Nature and Art to the studios of the Truth, and so to manifest it to the World. The *Astrums* of metals being extracted from their first *Ess*, they are no longer metals, but their tinging *Animas*, which at length with Mercury, become corporeal metals.

This is the true and genuine Foundation, upon which the whole structure of my *Aurum Potabile* is built. Therefore, as pure Gold, cannot render Mercury partaker of its own golden nature; so neither Silver, nor Copper, nor any other metal, will communicate its nature to Mercury, but being precipitated, attracteth it to it self, but in no wise changeth it. Hence the Philosophers say, That the Tinctures of Metals are not to be sought in the metals themselves, but in their first *Ess*. As *Basil Valentine*;

*Quod prima Essia non efficiunt,
Hic Aurum & Argentum non faciunt.*

Which is to be well regarded by him who desires to attain his wishes. From

From all these things it appears, that my *Aurum Potabile* being made of the first *Ess* of Gold, by Art, into an Astral Tincture, ought to be an excellent Medicine; as also, that it is such, I have largely demonstrated: For if it were not better than a common Solution of Gold, it would not change Mercury into true Gold, neither also would it have the power of transmuting a most potent Poison into an excellent Medicine. Without doubt, such Medicaments, which by the help of my *Aurum Potabile*, from most violent Poisons, are changed into so salubrious a nature, as Antidotes, do powerfully resist other Poisons and pertinacious Diseases, and may be used in Physick with great admiration. What would it profit, if the Body should be purged by an hundred stools, and at the same time the Disease doth not consist in the matter of stools, but still keeps its place, and gives no way, except it be attacked in its own quarters? Neither will it avail any thing to let all the blood out of the body, if the seat of the Disease be not in the blood. Yea, if it were there fixed, and the whole mass of blood wholly corrupted, it would be in vain to undertake to amend the same by bleeding; for all the blood cannot be drawn out, without peril of Life. And if, for example sake, two or three pounds of twenty should be left in the body, to be amended by sanguifying Meats and Drinks, and good Blood to be increased, yet the event would not be answerable, because the increasing blood would be corrupted by the former. E. g. An Hog'shead of sharp Vinegar, out of which, if you should draw all the Vinegar, leaving only the feces or Lees, and should by degrees pour into it noble and generous Wine, the Wine would be plainly corrupted by those few feces. Even so it is with those fixed Diseases, which have taken such deep root in the humane body, that they cannot be taken away neither by Purging, Bleeding, nor Sweating, nor by outward Anointings. Therefore they are to be tinged and amended in those places, to which they pertinaciously adhere, by the help of Tinctures or Astral Medicines, as above is done with Mercury, and Mercury sublimated, that remaining there, they may put on a better nature and quality, and no farther molest the humane body. And this is the true and genuine way of curing radicated and incurable Diseases. Yet I would not be so understood, as if I condemned all Purgation; for Purging being used at a due time, brings no small profit. Blood-letting also being seasonably used, wants not its utility; but being often abused, is the cause of great mischiefs, and not seldom hastens on untimely death.

Moreover, the following Experiment, for the trying the Truth of my *Aurum Potabile*, is not to be contemned. Rub some *Argent-vive* upon a small Silver Plate, and what is superfluous, and doth not adhere, wipe off with a Linen cloth, after the manner of Goldsmiths, (or Gilders) who gild with the *Amalgama* of Gold and Quick-silver: Digest the Silver Plate in my *Aurum Potabile*, for half an hour, or an hour, then take it out, and you shall see with how fair a Golden Colour it will be gilt. For in this digestion the Mercury is not so heated, that it can vanish in smoke; and therefore adhereth to the Silver Plate, and is tinged by my *Aurum Potabile* into the best Gold. Now try the same operation with another Silver Plate, rubbed over with *Argent-vive*, and digest it in a solution containing corporeal Gold, to see if that Plate will be gilt like the other. For the Plate

coming out white, you will see a very great difference.

I could here add more such Experiments, if I thought it needful. If Goldsmiths (or Gilders) could gild their Silver Vessels, by such a coction (or digestion) in a solution of corporeal Gold, without doubt they would soon leave the common way of gilding by the *Amalgama* of Mercury and Gold, because by its poisonous Mercurial fume, affecting the bodies of those who handle it, it is wont to cast them into dangerous and lasting Diseases. But because they can effect nothing by such golden solutions, they are forced to supercede their Use, and to acquiesce in the old usual way.

These few things of my *Aurum Potabile*, which is the Fourth and Last Article in my *Continuation of Miraculum Mundi*, I am constrained to publish for its defence, that every one may know I have not attributed too much to it, but that it can perform much more; the truth of which I am ready to exhibit. Therefore this is a Medicament most worthy to be presented to Great and Noble Men, as a precious Gift.

As for the Third Process in the same Work, which is offered to Physicians and Citizens, that they may by an easy labour obtain good Medicines for Mankind, and an honest livelihood; it is openly and clearly described, so that in it not the least thing is hidden or concealed, I cannot force any to believe or try the matter; I have enough to do with my own affairs; but if in my Youth I could have obtained such a Manuduction, as I have hitherto and still do administer to others, I should not have been forced to the searching out of Nature with so great charge and labours, heavy thinks, and great danger of my Life, as I have. I here again affirm that which I have often asserted, viz. That by the fulminating of Salt-petre with Tin and Mercury, much Gold and Silver is acquired; which thing I have often done, and as yet can do it, and do promise that in due time I will demonstrate it publicly in my Laboratory to Friends. The other point, in which I have taught how Rich men may augment or improve their Gold and Silver, much faster than they are wont to do by putting it to Usury, I have truly and candidly revealed, and have kept back nothing. NB. But that there are other waies of acquiring Riches, without great Gilt and Labours at the Fire, the troublesome Exercise of Merchandize, or other things, disturbing or hurting the mind, I do in no wise deny. For the like things are every where obvious, in divers place of my Writings, especially in the 2, 3, and 4 parts of *The Prosperity of Germany*, where mention is made of an Excellent Work, by means of which an honest livelihood may be obtained in tranquility, without noise, meltings, and blowings of Bellows, and that by the help of a certain Water extracting Gold and Silver from Sand, Earth, Clay, Stones, and Minerals, without great labour and costs. And although there should not be at hand any such Earth, Sand, or Stones, which contain Gold and Silver, from which these cannot be elicited by common melting; (yet there is hardly any place in the World, where these matters do not occur) nevertheless there is no want of Lead and Tin, from which two at all times, and in all places of the World, Gold and Silver, by the help of the said Water of Salt-petre may be extracted; which is an excellent and profitable Art, the which, lest it should die with me, I have already shewed it to some Friends.

I also here promise, that in my publick Laboratory I will shew and demonstrate various Secrets. But let no man persuade himself that I will do this to all men, without discrimination, or admit every unknown Person to this demonstration, but only those whose Piety and Candour I my self have long known, or such as shall be recommended by them, or other known Friends.

Moreover, besides my publick Laboratory, I will also have a private one, in which shall be shewed to my Friends the more curious and excellent things which I have mentioned in my Writings.

There shall be shewed rare and hitherto unknown Wonders of Nature, as Vegetable and Mineral Plants. As for example.

Vegetables of a Metallic Nature; of which we have spoken in the Treatise of The Nature of Salts.

Herbs springing up or growing out of hard, Flint, yea, out of pieces of Iron.

Metals in a few hours growing up like Vegetables, by the help of a certain Water; concerning which, see my Description of the Liquor of Flints, in The Second Part of Furnaces.

Metals in a few hours space, like Herbs, without the addition of any foreign matter, growing up, so that they lose nothing in the trial of the Cupel.

Also divers manual Operations, and Compendiums not common in the Distillation of excellent Spirits, profitable both in Alchymy and Physick, such as Spirit of Nitre, Spirit of Salt, *Aqua-fortis*, *Aqua-regia*, and the like, by which they are so easily and swiftly distilled, that with two or three pound of Coals, by a Body and Head, in Sand, every hour may be distilled one pound of spirit, and that so pure, sweet, and clear, that it needs no rectification.

But seeing that this is a thing unheard of, and therefore will be look'd upon by the common Chymists as a thing incredible, I cannot forbear here only to point at the way, by which it may appear possible to be done.

Suppose that I have need of some pounds of Spirit of salt, and want the opportunity of preparing it in a long time, by the force of fire, I use the following preparation. Instead of a great and continual fire, I use a separatory Art, severing the pure from the impure, dissolving common Kitchen-salt, or salt-petre, in common Water, and adding to the solution put into a Cucurbit a separatory sulphur. The Cucurbit, with a Head or Retort, (by which also the Distillation may be made) being set in sand, I kindle a fire, by which the water containing the salt may boil, and so by the sulphur, in the boiling, the pure parts are separated from the impure; the purer parts are rendered very fugacious and sweet clear spirits; the grosser, more earthy and fixed salt remaineth in the Cucurbit or Retort, of a very wonderful Nature and Property. And after this manner, from one pound of salt or salt-petre, may easily be distilled one pound of spirit of salt, or spirit of Nitre. From a pretty large Cucurbit, in ten hours, may be made ten pounds of spirit of salt, or spirit of Nitre, which two spirits being mixed together, make an *Aqua-regia*. The quantity of your spirit in each Distillation will be greater or lesser, according as your Cucurbit is larger or smaller. He that desireth to make *Aqua-regia* by the same distillation, must dissolve equal parts of salt and salt-petre in Water, and distil by a Body or Retort.

This is indeed an excellent Compendium for all those that need a great quantity of those Spirits. Gold, Silver, as also all the other Metals, may be dissolved without *Aqua-fortis*, or *Aqua-regia*, and the like spirits, by the help of certain salts dissolved in water, which truly is also a famous Invention. So also it is with those other rare Experiments above mentioned; as for example, If a metal ought to grow in height, something contrary is to be added to it; for this, while it lieth from its contrary, arising out of the mass, groweth up as well in the dry as the moist way.

If we would have a hard Metal or Flint bring forth an Herb; the Metal, whether it be gold, silver, copper, iron, tin, or lead, are first to be reduced into a tender Powder by salts, and that Powder being put into an Earthen Vessel, is to be moistened with a certain peculiar Water, and the seeds of the Herbs to be sowed or set therein, which after they are grown to perfection, are to be no longer moistened, but the powder is to be exposed to the Rays of the Sun, which again becoming a metal or an hard stone, plainly like to another metal or stone, containeth the in-hering Roots of the Herb, and causeth the Ignorant to admire how an Herb should grow out of a piece of Gold, Silver, Iron, Copper, or an hard Flint. This is also certain, and not to be doubted, that the said Herbs so growing out of the Metals, do obtain the nature and properties of those out of which they arise.

Although these Experiments of Herbs thus growing afford no profit, yet they are noble Operations of Nature and Art, having more in them than they promise at the first sight, therefore I have not here brought them in vain, inasmuch as they are of no small moment.

But that I may here (at least) mention somewhat of this growing faculty of Vegetables and Metals, be it known to every one, that in my publick Laboratory shall be seen the seeds of all sorts of Herbs, and especially of Grain, as Wheat, Barly, Oats, and others, viz. by what means they may be so prepared, as to acquire a swift faculty of growing, and that one grain may produce ten, twenty, or thirty strong stalks, with full ears, and fruit an hundred fold.

In like manner shall be shewed to some Friends, how Salt-Petre, as the only promoter and helper of the growing faculty, may be sowed it self; so that it shall recompence the labour an hundred fold; for salt-petre multiplieth it self, and groweth up out of common salt, like other Vegetables; whence that old Proverb of sowing of salt might perhaps take its Original.

It behoveth that I here make mention of yet another wonderful thing concerning the growing faculty, to be shewn (God willing) in my private Laboratory. And it is this, that Gold and Silver do grow, are encreased and multiplied out of gross Saturn, even as the seeds of Vegetables, out of a dunged and salt Earth, so that in fifty ounces there is daily an augmentation of one ounce, if not of two. He that shall be here a good Husbandman, and skillful in ploughing of Saturn, and rendering him fertile, and of sowing or planting in him a fit seed, he will have a plentiful Harvest, answerable to the seed which he sowed, and will easily gain three or four times as much.

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Therefore, because the growing faculty of Vegetables, Animals, and Minerals, or Metals, taketh its rise from the only and Universal Salt of the Earth, and this from the Salt of the Sea, and the Sea Salt, from the Sun, if the Divine Goodness shall grant me Life, I will shew to my Friends, how by small labour and charge, the Universal Salt fatness, fit for the rendering all barren and sandy ground fruitful, instead of Dung, may be copiously separated from Sea Salt. Yea if need require, I can easily demonstrate, that also the natural Seed of Gold, the true Universal Medicine may be prepared of the same, or that it may be acquired from the visible Ocean which is known to every Man. But seeing that belongs not to this place, we refer the Reader, desirous of such subtle knowledge, to the Treatise of the Nature of Salts, where

he will find those things which will satisfy his desire.

These, and the like Experiments shall be shewn in my Laboratory, among all which, that is the most excellent, by which a Man, without the incommoding of another, and with great quietness and Tranquility, may honestly get his Food and Raiment. There shall be also demonstrated those four *Arcaums* treated of in the *Continuation* of *Miraculum Mundi*, and many other things treated of in my Writings, which many believe cannot be effected. That so I, by giving an ocular Demonstration, may vindicate my Writings from the Injuries and Reproaches of the ignorant, and also leave behind me somewhat for the good of Posterity.



TREATISE

OF THE

Nature of Salts:

OR, A

Clear Description, declaring by a perfect Explanation, the Nature, Properties, and use of such Salts as are commonly known, as also of a certain other very wonderful Salt, hitherto unknown to the World; by whose help all Vegetables Animals and Minerals, without diminution of their weight, or change of their form, may be transmuted into hard and incombustible Bodies:

WITH

A most firm Demonstration that Salt (after God and the Sun) is the only Beginning, Original, Propagation and Augmentation of all things; from which the greatest Treasure of the whole World; and the greatest Riches may be obtained.

THE PREFACE.

THe manifold and various sorts of food, whether prepared of Flesh or Fish, if brought to the Table not seasoned with Salt, are not grateful to the Palat; in as much as they neither exhibit a pleasant relish, nor conduce to the health of the Body. Every man will readily assent to the truth of this trite and vulgar Maxim, if he shall consider with an accurate mind, that among all the Seasonings and Sauces of food, Salt holdeth the chiefest place, and that there is no other equal to it, so that among so many, there is no one to be preferred to it.

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Therefore what great and excellent Treasures, admirable Virtues, and most worthy Endowments, in which, by diligent search, and inquisition the minds of men may be occupied, are contained therein, I have determined in this present Treatise to enquire into, and declare; inasmuch as for the space of fifteen or sixteen years, I have endeavoured nothing more, than that by all my Labours I might serve the Divine Glory, and the publick good. For by my first endeavours I published a Work, treating of Philosophical Furnaces in five parts, and I discovered five Furnaces, adapted to the various modes of Diffillation; I also shewed the way of preparing (by an artificial manner) excellent Medicines which drive away various and divers Diseases afflicting the Humane Body, which profitable and artificial Inventions, no man before me hath revealed.

Next follows my Mineral Work, shewing the Original, and commendation of Metals and Minerals: To which I succeedeth my Pharmacopœia Spagyrica, in three parts, treating of Vegetables, and by what means efficacious Medicines may be prepared of them.

Next after these, was my Work of the Admirable Nature and Properties of Salt-petre, in which is solidly demonstrated, that that Miracle of all sorts, is the true Universal Solvent of Philosophers, which is subservient to the use of all men, high and low, rich and poor. That little Treatise I have called by the name of Miraculum Mundi, which I have augmented by an Explication and Continuation, and fenced it with a defence and Apology, against the wicked Insults of Envy and Scorn. In all these I have set before the Eyes of this blind World, the Divine Miracles and Mysteries of Nature.

After this, came out another Treatise, under the Title of the Prosperity of Germany, in four Books, the two latter of which are not yet Printed, but shall be published in a short time, if God shall prolong my life, which contain very profitable Precepts of the Oeconomy and Administration of things familiar.

Then another little piece, called, The Consolation of Sailors; teaching how they may defend and preserve themselves in all long Voyages, as to the East-Indies and other parts, against Hunger, Thirst, and other incommodities of that kind, to which they are wont to be Obnoxious.

Moreover, A Treatise of Tartar, Vinegar, and Spirit of Wine, shewing their exact attainment and preparation.

To these I have adjoined, a Treatise of Aurum Potabile, and another of true Aurum Potabile, or the Universal Medicine, and other Apologetical Writings, in which I have not only set forth the perfidious unfaithfulness of men, but have also revealed many excellent Sciences, that by all these Writings I might illustrate the Divine Glory, and contribute to the benefit and profit of my Neighbour, by giving him as it were wholsom and excellent food, whereby both his Body and mind may be equally refreshed.

And although the said Meats be wholsome, of a good Savour, and contain their own Salt; nevertheless, it seems to me necessary, to salt them as it were afresh, and to season them with a certain Sauce, that they may be raised with so much the greater appetite and pleasure. And I have so much the more a mind to do this, as I more studiously endeavour to observe that precept of the ancient Doctors, that no Meat should be brought to the Table without Salt. For it was a received custom in former time in well ordered Families, to set the Salt first upon the Table before any other Dish, and not to take it away till all other Dishes were first removed: The which indi-

cates, that Salt is a most profitable thing, and an highly necessary gift of God, therefore of right claimeth the pre- cedency of other Meats in sitting upon the Table, and of remaining there, till they are again removed. But that this most Noble and Divine Gift, may the better be understood by the ignorant, and may be made more known than hitherto it hath been, I cannot pass by, but I must indulge my self, as my time will allow, in a few words, and as it were by the bye, to shadow out, and depict its great and admirable efficacy, for the profit of Mankind. But here I shall speak but of few things, and that very compendiously, the studious of Divine Wonders may find the rest in the Writings of other pious and diligent Men, if he hath a desire to know more.

As for the Original of Salt, which is drawn out of the Ocean, as an Universal Storehouse, Writers are divided into divers parts and Opinions. Some think that those Salt Fountains, which in many, and various places of the Earth break forth from their Springs, and by the help of boiling, yield their Salt, do not take their beginning from the Ocean, but from a Salt penitently generated, and brought forth in many places of the Terrene Globes, like Metals. And they establish their Opinion by this Argument; That the Water of those Fountains much exceedeth, oftentimes, that of the Sea in Saltness; and on the contrary, the Sea Water being brought by long and tedious Passages through the Earth, necessarily loseth its Saltness, and therefore leaving its Salt, it ought to come forth plainly sweet, or insipid. This reason, at the first sight, seemeth so agreeable to truth, that one can hardly think the matter to be otherwise. But most Springs of sweet Water, in their first rise were Salt, which penetrating the passages of the Earth, have deposited their Salt in the same, to nourish the Earth, and that they might come forth sweet for the daily use of Man. Whence they have given rise to so many, and such various Rivers, which again return in that Universal Store-house the Sea, or Ocean, by which incessant and Reciprocal Flux, they are impregnated with Salt, and Communicate the same to the Earth, that it may never labour under a want of due nourishment, but may render Minerals, Stones, Trees, Grasse, Beasts, and even Men also, partakers of the same perpetually, and so may serve as well for the Sustentation, Propagation, and Conservation of Irrational, as Rational Animals, the which no man of a sound mind can deny, except he will also deny the Circulation of the Blood in the Body of Man, or Microcosm, which is plainly unknown to not a few, and will say, that the blood in the little Toe, or little Finger, or left Ear, or other places, doth not arise from the Liver, the Universal Fountain of Blood, but that it is particularly generated and produced by the Vital Spirit, in those very parts, which favoureth not a little of Absurdity.

Seeing therefore, that the constant Circulation of the Blood in the Microcosm, can be in no wise deny'd, why should not also such a Circulation in the Macrocosm be admitted as true? For as the Blood of the Humane Body arising from the Liver, diffuseth it self through all the Passages and Veins of the Body, as well small as great, and Conserveh the life of the whole, nourisheth all the parts, and augmenteth the good juices, which are changed into Flesh, Bones, Skin, and Hairs in the Members themselves, and leaving the unprofitable Phlegm to be expelled by the Pores of the skin: So also it is with the Nurture and Universal Aliment of the great World, while the Salt water without intermission, of the great Sea, or Ocean, encompassing the whole Globe of the Earth, by many small and great passages or Veins, passeth through all the parts of the Earth, and nourisheth and sustaineth them with its Salt, that Minerals, Metals, Stones,

Sand,

Sand, Clay, Shrubs, Trees, and Grasse may be nourished and grow, and in growing take their increase. The rest of the Water being freed from all saltness, is exterminated as a superfluity in the Superficies, and being diffused into various Springs, as well small as great, is expelled, no otherwise than the superfluous sweat of the Blood in the Microcosm, by innumerable passages and pores. But that in many places of the Earth, the Water doth not leave its salt, but carrieth it along with it self, that may very well come to pass for divers reasons. For first, the most excellent Governour, by His Divine Providence, hath most wisely ordained and appointed, that a salt water of this kind, which men could in no wise be without, should break forth out of the Earth, and it is thus effected: The Sea-water every where passing through the passages and clefts of the Earth, in some places is dried up by the Central fire, and conglutinated into hard and great pieces, which being aged up by men, and dissolved by the help of Water, and freed from its scum, is boiled up in fit Vessels, and reduced into a pure Salt.

But if it happeneth that other Water passing through those passages, findeth pieces of Salt of this kind, it dissolveth so much of the same as it can carry along with it, and afterwards is boiled into Salt after various manners, according to the greater or lesser quantity of Salt it hath carried along with it.

But that one Salt Fountain is richer in Salt than another, the cause of the difference is in the Water, which passing by, doth more or less associate it self with the Salt, and so is made stronger or weaker.

The few things are sufficient for the refelling of their Opinion, who assert that Saline Fountains do not draw their original from the Sea, but are generated and produced in a peculiar manner in the Earth, by the help of the Stars.

But if this should seem credible, nevertheless it would seem more credible, that the Sun and Stars casting their Rays and Influences into the Ocean or Seas, should there generate Salt, which afterwards penetrating through the porous passages of the Earth, should convey due nourishment to the same.

This reason may be assigned of the greater or lesser quantity of Salt in Fountains or Salt-springs; that those passages which receive salt water from the Sea, differ in situation of place, and are also differently disposed or allotted by the sea-water it self, which being various and manifold (in respect of saltness) differs much in one place from another.

For by how much the nearer the Sea-water is to the North, it contains so much the less salt, so that oftentimes it scarcely holds the tenth or twelfth part of Salt. But the nearer it is to the South or East, it is enriched with so much the more salt. For this reason, in many places of the East and West Indies, the sea aboundeth and smel- leth with so great a force of salt, that when it is stirred up by the vehement impetuosity of Tempests, it casts out with its surges a copious spume or froth by scum upon the shore, which being afterwards dried by the Rays of the Sun, the Inhabitants are wont to use for the salting of Flesh and Fish. Experience teacheth, that in places of this sort, few pounds of Sea-water yield one pound of salt, and the fertility of those Lands also indicates the great quantity of salt, which without any cultivation or human labour, both Winter and Summer, enrich the Inhabitants with most excellent Fruits. But those Regions situated near the Arctick Pole, or North, do not enjoy so great a fertility, because they want the greater and more penetrating Beams of the Sun, and do not exhibit so great a quantity of Salt, which is the cause of all fertility, and therefore those Regions are denied so large and spontaneous a fruitfulness.

But that Salt which the Unbifful have been accustomed to have in little or no regard, may be had in greater honour, I neither could or would any longer pass by its due Name in silence, and therefore I have called it the greatest Treasure, and most ample Riches of the World.

Moreover, that I may prove and demonstrate, that this common subject salt, known to every man, (in which the life, conservation, growth, and propagation of all the Creatures consisteth, and which is the beginning and end of all things) doth deserve this title, and that a greater Treasure is not found in the Earth; it will be necessary to do this, that I make manifest the infallible Verity of the Mysteries of GOD and Nature.

But I desire of the unprejudiced Reader, that he will not be offended at the vileness of the subject, and contemptible salt, nor think that I, in giving this Title to it, and calling it the greatest Treasure and chiefest Riches of the whole World, have exceeded or given it too great honour. For so great and honourable a Title doth of right belong to it, and should as yet be insignified with a greater, if a greater by me could be attributed. And I easily persuade my self, that if those who are captivated by the hunger of Gold, shall see this Book, and read the Title, they will conceive no other thing in their minds, than the description of the great Universal it self, or the revelation of great Riches and massy Treasures, which they will hope to find in this Treatise, never dreaming that poor subject and contemptible salt should be set before them, and therefore will say, What is all this noise about a handful of Salt? Who could have thought that Glauber would have dared to have given such a Title to Salt? But I earnestly requir of thee, my Friend, that thou wouldst patiently read those things which in this Writing I have put before thy eyes, concerning Salt, and that thou wouldst accurately examine them, that thou might apprehend me to have written the pure and sincere truth. If they exceed the capacity of thy mind, and thou hast not hitherto learned or understood the same from the Books of others, I would have thee to understand that all men have no knowledge of all things, and that the Omnipotent GOD hath left many Sciences to Posterity, which he hath hitherto concealed from the proud and haughty. Read over and over the true Writings of the ancient Philosophers, that thou might know, and thoroughly know, that those men who have searched the most intimate Penetrals of Nature, had salt in great estimation, to have industriously concealed its Mysteries and Arcanums from the ingrateful World, which now in these last times are brought to light, for thee and all others, to be received as incomparable Gifts, with a grateful mind.

Therefore Reader bend thine Ears, and open thine Eyes, overgrown with blindness and darkness, attend to those good things which I shall discourse to thee of salt; if thou wilt make trial, and will search them thoroughly by an accurate examination, whether they agree with God, Nature and Truth, I doubt not, but thy mind will be enlightened with a great light, and thou wilt become as a man renovated; but if with a proud mind thou shalt refuse to learn and understand these things, or scoff or mock at them, thou shalt be reckoned amongst the number of Fools, and perpetually abide in the same, although Aristotle himself, and all the Professors and Doctors should sit upon thy back. As I ears, and thou with the same shouldst endeavour as an Ass with a sack to cover thy foolish Pride and proud folly. It is much better for a man to know many things, and measure or estimate himself in his own way or manner, than to know nothing, and bear himself out with the vain pride of his own ignorance. I have never seen any man endowed with true knowledge, who hath preferred himself to others; on the contrary, I have found very many, who being stirred

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up by envy, hatred, and inhumane malice, do nothing sooner or more readily, than insult and make a mockery at pious men, to whom the Divine Bounty hath granted his Gifts, and as it were, devour them with their Wolf-like Teeth, which diabolical wickedness the Divine Justice in

its own time will not suffer to escape unpunished. Thus much I was willing to say to the proud Caviller; now therefore attend to those things which I shall speak concerning Salt.

A

T R E A T I S E

O F T H E

Nature of Salts, &c.

I. Of the Nature of S A L T.

That it may be demonstrated in a *Compendium*, how many good things, as first the Tranquility of our mind, the chiefest Temporal Good, the Conservation of our Bodily Health, the great Riches and Treasures, and other things which are necessary for humane use, are latent or hidden in the deprecable Body of Salt; in the first place let us hear what our Saviour Christ himself saith, who is the Truth, the Light, and the Life, in the Gospel of St. Luke, Chap. 14. Ver. 34. and in Mark, Chap. 9. Ver. 50. Salt (saith he) is a good thing. And in Luke, Chap. 18. Ver. 19. No man (saith he) is good, but God alone. But he calleth his Disciples the Salt of the Earth, and addeth, If the Earth wanteth Salt, it is unprofitable, neither doth it bring forth Fruit. And Dung it self, without Salt, is of no use. This is as if he should have said, Salt is the most noble thing of the whole World; and yet amongst Fools the most abject and contemptible. Be ye like to this, and do the Will of God, and as Mediators lead Sinners to GOD, which otherwife cannot be done. I am your Head, your Master, and go before you; tread ye in my footsteps, follow me, I am the Way, &c.

But to return to Salt, we will hear the opinion of others concerning it: There is here no need to cite the Writings of Philosophers at length, seeing they are at hand, and from them it may be manifest to every man, that next after GOD, the Sun, and Fire, they have esteemed it the most Noble Creature, and have given to it Honours as it were Divine. The Heathens would not sacrifice to their gods without Fire and Salt. If you read the Old and New Testament, you shall find that God himself hath commanded to have regard to Salt. In the Gospel of St. Mark you shall find that all men are to be seasoned or preserved by Fire, and all sacrifices with salt, and that the Lamp or Light upon the Altar was never to be put out, but to be kept in continual Burning.

In the Christian Church, this manner is still observed, that no Infant is baptized, without some Light or Candle be present, and the Priest sprinkles a little salt upon the mouth of the Baptized, with these words, Receive the salt or seasoning of Wisdom; as if he should say, Learn to understand and know God, and be not like the Beasts, which hath no understanding. These Ceremonies are observed in some places at this day. The Greek Church baptizeth with fire and water, by that Rite indicating the Holy Ghost to be like to fire, because he warmeth the cold hearts of Men, enlivneth them, and turneth them to GOD. God Himself calleth himself a consuming Fire; and the Holy Ghost hath alwaies appeared in the form of Fire, and shewed Himself to the Disciples of Christ in fiery Tongues. The Abyssin professing the Christian Religion in Africa, under the most Potent King and Priest *Prester John*, baptizeth with Fire and Water, and make a sign or mark in the Foreheads of the men which are baptized, by Burning. In short, there is not any man among the Heathens, Jews, Turks, and Christians, who doth not highly value Fire and Salt, of which notwithstanding he knoweth no more than a mad-man, or than a Swine, or an Ox, or other irrational Beasts, which pass their life without understanding. But these two Creatures of God, to wit, Fire and Salt, are one and the same in the foundation of Nature; for Fire produceth Salt, and Salt is again converted into Fire, and Fire into Salt, so that by a mutual conversion they are alwaies changed one into the other. Therefore *Hermes* the Father of Philosophers saith, That which is above, is as that which is below, and that which is below, as that which is above; as you may read in his *Smaragdine Table*. The Sun or Fire is above, Salt is below, which is by an easy way rendered combustible, like the sun or fire; as I have taught in many places of my Writings, and all Philosophers, with an unanimous consent, do confess, that the greatest Secret lieth hidden in fire and salt.

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Hence is the word Alchymy from fire and salt, which penetrate all things, and Fire is the Symbol of GOD, who hath alwaies exhibited himself to mortal eyes, in the form of Fire: But Salt is the Symbol of Eternity, inasmuch as it defendeth and preserveth all things from Corruption.

There are some who determine the Evangelist *John* to have understood Hermetick Philosophy; and there is yet extant an Hymn, composed and sung by the ancient Fathers, in honour of the same *John*, in which occur these words: *Who maketh Gold of Rods or Twigs, and Gems of Stones.* Nevertheless I leave those things to every man's judgment, and here I only say this, That both Heavenly and Earthly Mysteries were known to the Prophets and Apostles.

But although I have never taken in hand to great a Philosophick Work, nevertheless it is so known to me from the Writings of the Prophets and Apostles, and from the Light of Nature, that by comparing things Divine and Humane, I could easily subject it to the Eye, but that power is not allowed me, and therefore I trust that no man will make an evil Interpretation of what I have said, seeing that thereby I aim at nothing but the glory of God, and the profit of my Neighbour.

There is no need for any man to seek many things from the Old and New Philosophers, seeing that by reading and considering the Divine Writings of *Moses*, the Prophets and Apostles, he may obtain his desire, and may without doubt, in them, find the Stone of Philosophers described, provided he shall have but a little knowledge of Nature. I will say no more, but that the infallible Truth occurs in those. All these things are to be taken so, that things Divine may be understood in a Divine sense, and Natural things in an Elementary sense, without changing or mixing; seeing that they have no Communion among themselves.

But lest it should seem to any, to be absurd, that St. *John* the Evangelist should make Gold of Sticks or Twigs, and Gems of Stones, as the said Hymn teacheth, by an Art indeed great, and to be admired, I have thought it necessary to open and shew to the Unskilful by what means that might be done.

In the first place, this was possible to St. *John*, as he was a man abundantly gifted with the Holy Spirit, and seasoned with the Salt of Wisdom, so that he might perform this action supernaturally, as well as naturally, seeing that he was endowed by the holy Spirit, without all doubt he had also the natural Light in his possession.

But by which of those powers he effected this, is not for us to know, nor doth it behove us to know. But because few will believe that St. *John* wrought the same by natural means, and many not believing in Nature and Art, will only say, that it could never be, that Wood should be transmuted into Gold, and Stones into Gems. And although the later should be in some sort credible, by reason of the alliance or likeness between Stones and Gems, nevertheless the former, by reason of the great disagreement between Woods and Metals, inasmuch as they belong to divers Kingdoms, they object, exceeds all Belief, and other Objections of this sort, may be found among the Unskilful, by reason of the external species of place. But such things are wont to move no admiration in Philosophers, much less any doubt, seeing that they are not ignorant how great familiarity there is of the Vegetable Kingdom with the Mineral, both which

have their Rise from the same Subjects, viz. Salt and Fire, which their Anatomy doth clearly demonstrate. And although this may exceed the Capacity of some, yet it doth not thence follow that it is not true. If all things were to be spoken truly and openly, I confess there would be found a very small number of those who rightly understand Nature, seeing that almost all men who have but frequented a School for some years, and obtained any thing of Latin, whether they understand Nature, or are ignorant of her, will be taken for Philosophers, traduce those Philosophers who are illuminated by the Light of Nature, with strange Cavillings and wicked Lyes, every where setting forth themselves by their own ignorance. Therefore it is no wonder that the Secrets of Nature should lie hid, and by the ignorant and unskilful of this sort be all taken for Fables and foolish Whimfies, which their Sheep's Brains cannot reach. But who is able to cure this Evil? Perverse manners are to be left with a perverse World. But that I may prove and demonstrate that it is not altogether impossible for Art to transmute Wood into Gold, I will point out by what means it may be done.

First, Then it is manifest before all things, that all Wood and every Herb hath its original from a certain sulphureous salt, to which Metals also owe their Rise and greatly agree in similitude, and by an intimate agreement in the same name; so that how easily a Mineral suffereth it self to be changed into a Vegetable, and that again into a Mineral, I have signified in other places of my Writings. Indeed if you shall look upon the external difference of any Wood or Herb, and a Metal, it will indeed appear great; but being reduced to their first matter, they will not differ in any discrimination; as is manifested in my *Continuation of Miraculum Mundi*.

Therefore if the first matter of Vegetables be adjoined to any metallic seed, this is nourished by that; and again, if a metal be reduced to its first matter, and any Vegetable seed put to it, that will be changed into a Vegetable; which Experience hath often shewed me. But if those two had not a great affinity with each other, they would not so easily admit of a mutual conversion one into the other; the seeds indeed differ between themselves, but they agree in the first matter, which appeareth thus: If a sulphureous salt, not corrosive, be mixed with sand, and moistened with water, and the seeds of divers Herbs sown in it, for every seed doth thence attract its own nourishment, every one, according to its species, producing its like, endowed with various colours, smell, and proper taste, powers, and virtues, all which proceed from one only salt, and are manifested by the heat of the Sun, and the operation of the internal Archæus. But to make the matter more clear, it is to be known that the principals of Vegetables are Water, Salt, and Sulphur, from which also Metals take their original, and not from running Mercury, as many think. For that *Argent-vive*, in its own peculiar nature, is also a metal arising from the same three principles, from which the other metals, and all Vegetables draw their original, viz. from Water, Salt, and Sulphur, which their Anatomy maketh manifest. Here the rout of Unskilful men will take Counsel to refer this my opinion, inasmuch as it will seem worthy of credit to few. But the cause of this incredulity is the rudeness and unskilfulness of men of this sort, who having no Experience in Natural things, nor in no wise enlighte-

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ned by the Light of Nature, are blinder than a Mole.

Those things which hitherto I have so often, and with so many words inculcated, the same I here repeat and affirm, to wit, That a Metal may be converted into a Vegetable, and that again into a Metal, and that no Vegetable is found, from which a natural and yellow Sulphur, in all things like to the Mineral, may not be prepared; and this Sulphur prepared of any Vegetable, if it be adjoined to any fixed metallic Sulphur, it is matured by the same, into a metal, yet not without a *medium*; as I have often indicated in my Writings, and that *medium* I have said to be Salt. Therefore whoever knoweth how to adjoin any immature Sulphur, whether Vegetable or Mineral, to any ripe Metal, the fixed and constant Sulphur of Gold and Silver, will be nourished and encreased by the Vegetable or Mineral Sulphur, not fixed, and will transmute that into the species and property of the other; as the Ferment shall be white or red, in like manner as the seed of any Vegetable doth. So gold and silver may be made of a sulphureous salt, according to any ones will, which nevertheless requires a due time, seeing that a transmutation of this sort is perfected gradually, and by a due heat, as also in the propagation of Vegetables & Minerals it is wont to be done. From these things it appears, that this Transmutation is the mere Work of Nature, which many Experiments which I have made, and yet am able to make, do evidently demonstrate; therefore there is no reason why such things should seem so wonderful or absurd to any.

Whether St. John performed the Transmutation of which we have spoken, by the help of any natural Art, or whether he did the same by a Divine Power, we will not here dispute; but let it suffice to have demonstrated that such things may be performed by a natural reason.

For when Wood, Bread, or piece of a Bone; or also any Herb shall be adjoined to its own salt, in due manner of Art, and reduced to its first matter, that salt transmuteth the Flower, Bread, Wood, or Herb into a sulphureous salt, which encreaseth the growing faculty of Vegetables and Minerals. A salt of this sort being mixed with a small quantity of white Flint reduced to powder, and melted in a strong Fire, will give a red and pellucid stone or glass, which if it be kept long in the Fire, it turneth green, and at length black, like a Coal, and acquirith so great hardness, that it may be cut and polished after the manner of other precious stones. Here the desirous of Art may see, that by one and the same way, and in one and the same time, that Gold may be prepared of Wood, and fair and pellucid stones, of various colours, of white Flints. But that the Eyes of the studious of Divine and Natural things, may be the better opened, I will more clearly expound what the first matter is.

Therefore, as to this first matter, of which we here speak, that of it Metals no less than Vegetables may be brought forth, it is to be known how easily it may be prepared by the help of Fire, and of a certain Salt not corrosive, of Metals, Vegetables, and Animals, and indeed so swiftly, that in the space of three hours a piece of Bread, Flesh, or of any Metal, may be transmuted into a sulphureous salt. The same thing also happeneth in the stomachs of Men and Beasts, in which the Vegetables and Animals which are eaten, are consumed in the space of 24 hours, and transmuted into that sulphureous salt from which they have drawn

their Rise. But Metals being too fixed and compact, those stomachs have no Jurisdiction over them, inasmuch as they are not able to reduce them to their first matter, except the same were so reduced before, and so should come into the stomach, opened by a radical solution, and so are digested and consumed like Animals and Vegetables. But what need is there of the help of humane stomachs to perform such things, seeing that Operations of this sort may be perfected by the help of Fire and Art. A moist putrefaction without the help of Fire, performeth the same thing in Vegetables and Animals, in a long Process of time; but in Metals very difficultly, and not except in a very long time. Neither are humane Stomachs themselves alike potent, in reducing every Vegetable to its first matter, inasmuch as they exercise their power only upon those Vegetables which by a due Preparation are first rendered fit to be digested and concocted by the stomach, and reduced to their first matter. For first they are boiled, roasted, or prepared by some other way, because those things which are admitted into the Body, contrary to humane Nature, exercise nothing but venomous Operations. By a like reason Metals and Minerals refuse to be brought to their first matter in a humane Stomach, seeing that the stomach cannot suffer them, as being averse to humane Nature, but ejects them as a certain Venome, not without great peril of Life. Here I except Gold, which Metal only, being first rightly prepared, doth not refuse reduction into its first matter in the stomach of Man; nevertheless Art doth it more easily and readily. He who knoweth not this Artificial Reduction, must be content with the Natural, which nevertheless is not desirable, by reason of the toil, stink, and length of time which it requires. For which reason it is of less account than the artificial. Some of the ancient Philosophers have indeed (not without reason) used the Dungs of Animals, by reason of the incredible Virtues which they possess. But because we have better and fitter Medicaments at hand, not without reason we omit those, and leave them to them who labour under the want of better; which happeneth to Country people, who being remote from Cities and Medicines, are wont to use Dungs in various Diseases instead of Medicines. They purge the Bodies of Boys and Girls with Moule-dung, Horse-dung, and Goose-dung, being dissolved in Wine or Beer; and strained through a Linen Cloth, they use in curing the Falling-sickness by Sweat. In the Cure of an *Erysipelas*, or *Burns*, or *Scalds*, they use Hoggs-dung; and in all kind of Swellings, Sheep's-dung; in a *Quinsy* white Dog's-turd, or Humane dung, as also to other Diseases of the Neck, which the rude and ignorant are wont to drink against various inward and outward defects of the humane Body.

I remember once to have seen an admirable Cure done in a moment by the help of humane dung, in a certain, long, and tedious Disease, which it plainly and swiftly removed, drawing those into admiration who were ignorant of the reason of so swift a Cure. He that understandeth the nature and properties of Dung, will easily persuade himself, that wonderful things may be effected by the same. The reason is ready, because humane Dung is nothing else but Bread and Flesh, reduced into their first matter, all their Bonds being loosened, and rendered fit for the exercising of their Virtues; and from humane Dung is elicited, without any great difficulty, a natural Burning, and like to Mineral Sulphur, of which being mixed with Coals and Salt-petre,

Salt-petre, Gunpowder is wont to be made; as also a certain Salt, not much unlike the *Sal Enixum* of *Paracelsus*. And both those, to wit, that Sulphur, and that Salt, the Humane dung containeth in it self; the which may put forth their wonderful Virtues, by admirable Operations, I think may be doubted by no man. Put a piece of Gold for a time into Humane dung, and afterwards cleanse it by washing, you shall find it equally yellow, as if it had lain in a Lixivium, in which common Mineral Sulphur had been dissolved. And that yellowness adhering to the Gold [or rather Silver, for the better distinction] is but the Vegetable or Animal Sulphur arising from the Food which the Man hath eaten.

This I say is the cause that the Dungs of Men and Beasts produce so great effects, which Bread and Flesh otherwise cannot produce, before they are reduced into their first matter. Nevertheless, I do not therefore admit them of value in Medicine, but only shew whence they have their Virtues of resisting Diseases, that by this means I may assert Vegetables, Animals, and Minerals do highly exercise their Virtues, when they return to their first matter, not that it is at all necessary to be done in the Stomachs of Animals, seeing that the Operation of the fire alone serveth for this reduction.

In what manner soever this first matter be made, whether by the Stomachs of Animals, or by the Operation of fire, there is no great difference, only that which is made by fire is purer, and not so stinking, as that which is done by the Stomachs of Animals, although in gilding of Silver, they are found to be equal, and obtain a sulphurous nature. And hence it appears, that there lies hid in Bread, and in Flesh, a fugacious and spiritual Gold. And for this reason I conclude, that in all things of the World born of Salt, and brought to Maturity by the heat of the Sun, there is necessarily reconded a fugacious Volatile, and spiritual Gold, yet in greater quantity in one subject than another, but not manifested till the body containing it, by the help of art, returneth to its first matter.

The which Art, seeing that it is out of the reach of Rusticks, it is but reasonable, that they should make use of Dungs, without any ill interpretation. For in the greater, and more powerful Virtues to be produced, Dungs are found more potent than those things from which they proceed. Bread, Wine, Flesh, and the like things destinated for the nourishment of the Body, are not Medicines, but only Nutriments, from which, after an Animate Body hath separated its Aliment, that which is left, obtaineth Medicinal Powers and Virtues; and did I not fear that this dungy discourse should lead me too far from my purpose, I could declare things to be admired of Dungs. For Metals also being prepared but once by the help of Animals, may be wonderfully Converted, and reduced to their first matter, although it is in no wise necessary that we should take that way of doing it, seeing that an easier and better way is at hand, than that by the help of Animals. But he that is ignorant of this artificial Conversion, must be content with the other, till the teachings of experience, shall bring him to better things.

That incredible Virtues are hidden in the Dungs of Animals, *Paracelsus* at some time declared, in the presence of some Noble-Men, to some Unskilful Physicians, who being moved with anger, departed, thinking themselves to be highly reproached by *Paracelsus*,

because they had asked of him some great Medicinal Secret, and he had set before them Humane Dung. But without doubt, he would have shewed them great Secrets hidden in such a matter, which exceeded their dull Capacities, but not the incomparable Ingenuity of *Paracelsus*, who without doubt had revealed to them those Secrets which himself had found, had they not gone away from him with wrath and Indignation.

In another place of his Writings, he saith in express words, that he that knoweth not his own Dung, knoweth nothing at all, and is a blind Ass, to whom nothing of Heaven and Earth is manifest; which words do plainly prove *Paracelsus* to have been able to perform many things with Dung. But this I assert, that this my Transmutation, and Conversion of things into their first matter, doth far excel that which is done by Dungs, in as much as being endowed with a greater efficacy, it appeareth not in the species of Dung, but of a Sulphureous Salt, and may commodiously be used by all Men, and in all Diseases. Its Virtues are not restrained to any particular Disease, but operate generally, not only in all Humane Diseases, but also in all Infirmities and Defects of Vegetables and Minerals, as I have shewed in other places of my Writings. What I have here spoken of Dungs,

I would not have any think that I have done it to the end that I would have them used in Medicine, but for this reason, that I might shew the great difference between an Herb as brought forth by the Earth, and that which being first digested, the Animal Stomach hath freed from its Bonds, and reduced to the operation of its hidden Virtues: The which I have very clearly proved by the Dungs of Animals. Therefore the expert and learned Physician, setting aside all Duney Medicines, may by the Spagyrick Art, reduce his Herbs to their first matter, that is a Sulphurous Salt, and may perform by Salts of this sort, more and greater things, than by the unprofitable, and destitute of all Virtue, Barkes, Shells, and empty Husks, which a multitude of Physicians are accustomed to use at this day. I have thought fit to expose to the light these few things, concerning the first matter of things, and Dungs, which are not distinguished, by any great difference: But let us return to the matter it self, and see how fairly the light of Nature shineth from the Divine Light.

As God formed the first Man *Adam* of the Earth, and breathed into him a living Soul, and placed him in Paradise, and the Devil withdrew him from God, and Precipitated him into Eternal Damnation, using the Serpent as a Mediator: So also, Man who fell from his Creator, being deceived by Satan, by the Divine Serpent and Mediator, to wit, Jesus Christ, was again to be reconciled to God, which could no otherwise be done, and God permitted it so to come to pass, who otherwise might have bridled the Devil, so that he could not have seduced a Man, and also could have kept Satan himself in his Angelical Estate, that he should have had no hatred against God or Man. Now this Philosophick Elementary Secret may be compared, in all points, to the Heavenly Mystery. For if the Elementary Sun, in the separation made by God, in which he lifted himself on high from the rude and formless Chaos, had not ejected his earthly and corruptible Sulphur, and sent it down to the Abyss of the Earth, the Rays of the Sun, when they now penetrate the Earth, would not be hindered to Communicate with the Solar Progeny or Issue, so that the Bowels of

the Earth would produce nothing but Gold; and the other Metals, *viz.* Iron, Lead, Tin, Copper, &c. should not be, which nevertheless are brought forth impure, owing their received impurity to that impure, stinking, and earthly Sulphur, which is mixed with a Metallick Body in the Bowels of the Earth.

But to help Metals infected with a Sulphur of this sort, that they may become like to Gold, as the Son of the true Sun, it is necessary that Sol should humble his Son, to wit Gold, and suffer him to put on a Saline nature, whereby he may become the Medium of reducing radically the imperfect Metals to perfection. Salt is the only Medium of reconciling Gold to common Sulphur, and of making of it a Tincture, changing the imperfect Metals into perfect, of which all the Philosophers, whom few understand, have written so clearly.

Concerning this matter I have written very clearly in a Treatise, which I lately published, describing a Saline Water, or *Aurum Potabile*, which certainly containeth a great Mystery, although very many can neither understand or believe it. For because it wholly tingeth Mercury, it cannot be a solution of common Gold, because no Water, nor no Liquor prepared of Corporal Gold it self, can give to Mercury a constant Tincture. It may indeed be done that Gold dissolved, may adhere to *argent vive*, or that to Gold, so that both may pass together into a white Amalgama: But that such an Amalgama should become yellow and hard, or the Argent vive transmuted into Gold, will never happen, although it should be digested or cocted an hundred years in such a Golden solution. For the snowy whiteness of Mercury never suffereth it self to be tinged or coloured by common Gold, but is obedient to any tinging and coagulating Sulphur, concerning which in the Appendix to the Continuation of *Miraculum Mundi*, more things are declared. Let these few words be well examined, in which will be found a great Mystery; to wit the whole Philosophick work it self, provided the light of Nature shall a little shine. Nevertheless this is not so efficacious, as that it can reveal such Mysteries to a Man who wants Venus to open his Eyes, with which he may behold the light of Nature. For without God, there is no light, and without light, no life, no Understanding nor Wisdom; Obscurity is Death, and Death Eternal Destruction.

Salt speaketh thus of it self; *I am fire and life, and no Combustible Sulphur can be made Gold, except I be the Mediator.* Salt is the only Medium between Combustible and Corrupt Sulphur, or the imperfect Metals, and Gold. The pernicious Sulphur or Satan, which lieth hid in lean Death, is first to be vanquished and overcome in Hell, then arising a Glorified Body, it occupieth its Royal Throne, and Converteth the Disease Metals into Gold.

But to delay the Reader, burning with a desire of Divine and Humane Mysteries, no longer, I will describe the whole Operation in a Philosophick manner, briefly, clearly, and truly, as I have oftentimes done it with my hands, but never yet, by reason of various Obstacles have brought it to a due perfection.

To the common Salt of the Earth well cleaned, adjoin a Terrestrial Sulphur in a due weight, the injected Rays of the Sun being first received by the Salt; the Salt and Sulphur will fight in Hell so long, until the Salt overcome the Devil and Death, and ariseth a Glorified Body, by which its sick-Brethren are to be Cured, or Converted into Gold.

This is the whole Operation, in which nothing is omitted, but the weight, and the name of Satan or Death. But the name of the Salt I have already manifested, and nothing here remains, but that I should express the name of Satan and Death, which for the Glory of God and Profit of my Neighbour, I will not conceal.

The Death and Devil of all Metals, is that Combustible Sulphur, which having its seat in all things, is equally in Vegetables, Animals, and Minerals. Conjoin Salt and burning Sulphur, and cause them to fight until the life (that is Salt) shall overcome and swallow up the burning Sulphur, which is Death, and from both will proceed a Glorified Body, like a fair Ruby, or pellucid and red Carbuncle, by which the Diseases of Men and Metals may be cured. In this manner of operating, delivered in few words, lieth hid a mystery of great moment, which one of a thousand will scarce understand, and by reason of the violence of the matter, it will be to many offensive, and contemptible. But we will have no regard to Fools, blinded with their own folly and madness, who seek good where it is not to be found, and neither do nor will know it when put before their eyes. If after a Sophistical manner I should have proposed some Chymical Operation with a long and tedious Circumstance of words, I make no doubt, but the blind World would more readily have received it, than a short and compendious way of operating of this sort: Whence *Sensidivogius*, and other true Philosophers, have not said without cause, that if the true manner of Operating should be revealed to any man, nevertheless, by reason of the violence of the matter, it would not be believed. For this reason, some will object; I pray what good is like to be in so vile and abject a thing as Salt? And when was Sulphur wont to be made Gold? Hence also, they neither will nor can believe the truth.

But that I may clearly prove, that there are Secrets hidden in Salt and Sulphur, it behoveth, that I manifest those things more largely. Salt is the Symbole of Eternity, seeing that it is not diminished nor altered, neither by Fire, Air, Water, or Earth, but preferveth all things for a long time from Corruption. It is a thing well known, and conversant in the sight of all the World, and is a help to all other things, yet wants not the help of any thing. Burning Sulphur is the Symbole of Death, and the true Infernal Devil, which no Element, nor any other thing (one Salt excepted) is able to vanquish and overcome. For although Sulphur not yet freed from its Bonds, being surely kept in its Prison should suffer it self for many years to be tortured by the fire, yet would it not receive any sensible mutation, nor any loss of weight, provided there be no open passage for its Exit. By the like reason, if it should abide an hundred years, in the Air or Water, yet it would in no wise putrifie. Salt only overcome it, and changeth it into a Carbuncle; I say into a Carbuncle, so called, because shining with a pellucid redness, it sheweth like a burning Coal, and for its excellency may be accounted among Precious Stones. It is found by few, but they who have it in possession, hide it, nor do they expose it to Sale like Diamonds, or other Gemms. It is not digged out of rough Mountains, as others, but is sought by Prayers to God, and acquired by the Labour of the Hands.

But why do I say so much? Seeing that I have already exceeded my due limits, yet I know, that what I have

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I have said will exceed the capacity and understanding of the Impious. But that no man should doubt, that salt and sulphur are most noble Creatures, although very lightly esteemed, I will prove that salt is the *beginning and end of all things.* In the Creation of the World salt was first made, from which afterwards the four Elements proceeded, so that by the Philosophers salt is called *The Centre of the Elements concentrated;* and by the same reason, by which it was the first, it still is, and remaineth the last. All things arise from salt, and after they are destroyed by death, do again return into the same. *Et sal thesuros grandes & possidet ignis.* In Salt and Fire are contained great Treasures. Salt is Fire, and Fire is Salt, and they contain in themselves a third thing, to wit, an hidden Spirit. When the most Omnipotent Creator had pronounced the word *fiat*, and had created salt, the *Chaos* was afterwards parted or divided into four portions, and divers seats or places assigned to each, and also each had its Name given to it; which being done, the Elements took their beginning, intruding in themselves mutual actions, and ordaining their generations. The most pure and subtle part became the Firmament, and gave the Sun, Moon, and Stars the more gross and heavy, joined together into a mass of Earth, and like faeces or dreggs, occupied the lowest place. The watery and airy Portions encompass the Terrene Globe.

Now when the superiour or fiery part, with the Stars operate and immit their powers upon the lower part or Sea, the Water is rendered pregnant, or as it were with young, and generateth Salt without intermission. But lest this continual generation of Salt, effected by the operation of Fire, should be produced in the Sea or Water only, and the rest of the Elements should be idle, God hath also given to each of these its proper Gift, *viz.* to the Air, that it should receive the seed sent from the Stars, and communicate it to the Water; to the Water, that it should distribute the received seed through the passages and clefts of the Earth, that so by this reason Minerals and Metals of every kind might as well be produced within the earth, as all kinds of Herbs, Fruits, and Trees, without it in the superficies, serving for the nutriment, encrease and multiplication of Animals. This thing is witnessed by daily Experience; for if the Sea should not disperse its salt through the earth, so many excellent Minerals could in no wise exist in its bowels, neither in its superficies could nor so many and so great Trees nor so various and manifold Herbs, and such divers sorts of Grasse, be brought forth. For as much Salt as Vegetables draw to the external superficies, and Minerals to the inward bowels, so much the Sea or Salt-water restoreth to them, so that the Earth may never labour under a want of its salt, of which the Indigent are to be rendered partakers. For if the Sea should not provide for the Globe of the Earth a continual nutriment, the Earth it self being destitute of the same, would not be able to afford a due aliment and encrease to other things. For a Chelt which is continually exhausted by taking out, and nothing put in, at length being empty, retaineth nothing. But because the wise Providence of God hath appointed that the Terrene Globe, without intermission, should be fertile in bringing forth good Fruit for the nutriment of Mankind, necessity requireth that a perpetual aliment should be afforded to the Earth, from the Sea, for which end the Stars never cease in animating the Air and Water with their influences, that the Elements, by mutual helps, might succour

one another, and no stop or hinderance should be put to the course of Nature. For if one Element only rest, and cease to perform its office, the other would also cease from working, and fall into such a Rest.

Except the Stars should generate Salt, and the Water receiving it, should disperse it through the Earth, by what means should it come to pass, that any thing should be brought forth, grow, and encrease? The whole Orb of the Earth would at length grow dry, and perih, which nevertheless by the perpetual access of salt, never intermitteth, but is encreased and sustained.

There is no Stone which can want Salt, which argueth Salt to be its beginning and nourishment, and that those Mountains, in which is a great quantity of a saline nutriment, do grow and encrease thereby, as receiving it in a plentiful manner from the nearest sea. This is no where more easily to be found, than in those places in which the Mountainous Coasts are very fertile and fruitful in Metals, for the acquiring of which the Rocks are to be digged through with holes in height or depth, affording a commodious going in and out. But when in places of this sort all the Metals are dug out, or the metallick Veins are broken off (& lost) from the tranverse Walls, or sides, or also from the sliding or dropping Waters, they are rendered unprofitable; and for that reason such a Mountain is to be deserted; nevertheless it doth not cease to grow, and indeed as well the Stones as the Metals, having their seat in it. Whence it is wont to happen, that those holes or passages above-mentioned, through which one might have walked upright, in a long process of time, do so grow together, and become so little and frail, that he who desires to go into the most intimate Penetrals, must stoop even to the ground. This is to be understood of such sorts of Stones as abound with salt, for places not passable by salt, are found to be fit neither for the generation of Stones, or of other things, as also those which refuse to admit Water; For Water is the Vehicle which carrieth Salt through the whole Globe of the Earth, and by it disperseth its nutriment, as the Air is the Receptacle of the Astral seed, of which the Water is to be rendered a partaker.

Those things which I here write, altho' they may seem to be vile, and of small moment, nevertheless they are most true, and cannot be rendered more clearly and truly by any man. And altho' the same might be proposed by a more prolix description, yet there is no need of that prolixity, when all things may be delivered more compendiously.

Nevertheless, that I may as yet confirm by a clearer demonstration, that the Life of the whole World is Salt, and that of it all things take their original, I will bring for witness the Universal Opinion of all the Philosophers unanimously asserting, That all things being reduced into their first matter, return into salt; from which Saying it followeth, that they have taken their beginning from Salt; and this Argument can be refuted by no man.

Now some man may say, How shall I be sure of this? or, By what reason may all things be reduced to their first matter? To obtain the knowledge of those Labours and Operations, it behoveth thee by experience to go to clear Philosophers and Chymists, because I intend not at the present to treat of operations of this kind. Every Countryman taketh notice of the Work of Nature, who seeth daily, that every Herb, every Wood, every Man, and every Animal, after that

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it hath attained its end by Death, passeth by putrefaction into a sulphureous salt, hidden indeed in a putrefied Dung, but unknown to him, although with the same he dungeth his poor and barren Land wanting salt, and rendereth it fat and fertile. As long as the Herb, Wood, and Animal enjoyeth its own vital Air, it doth not dismiss its salt by which it is preserved, but superfluous faces. But as soon as death hath taken away the vital Air, and dissolved the *Vinculum* or Bond, the rest of the parts can no longer subsist, every one going out to that place whence it proceeded. Rain dissolveth the salt, and by all Rivers carrieth it back to its Mother the Ocean, from whence it had come forth; the spirit is attracted by the stars; the earthy matter remaineth in the Earth, to which it oweth its Rise. For the Fruits of the Earth do not obtain this universal nourishment from the Sea, by right of Inheritance, but they take it only as a profitable Aliment, given them to enjoy as long as they live; after death, the universal Mother, to wit, the Sea, taketh it back, and bestoweth it upon others which she hath accommodated to it. If thou hast a mind to make trial of this thing by another way, burn any Herb, Wood, Stone, or Animal in the Fire, for so whatsoever is spiritual flieth into the air, and the salt will remain in the ashes, to be extracted with water, and separated from the dead earth. Salt therefore in all things is *the beginning and the end*, and most worthy, which is accurately to be noted, inasmuch as it is that which containeth great mysteries and secrets.

He that is ignorant of these things, deserveth not to be called a Philosopher, but rather a proud Ass, knowing and maintaining nothing but flanders and calumnies, with which, to conceal his own ignorance, he cavilleth at the Truth, and bringeth it into contempt. The Ancients were not ignorant of the excellent Virtues hidden in salt, so that many of the Philosophers have thought that something Divine was hidden in salt, and therefore they have expressly written, that the knowledge of God can be drawn from nothing more clearly than from Fire and Salt. Therefore they at all times adjoined to their Sacrifices and Altars Fire and Salt, as Symbols of God and Immortality. They were afraid to touch any Fire or any Salt with unclean hands, lest they should draw the Divine Wrath upon themselves, if they should defile those most noble Creatures with impure hands: They swore by Salt and Fire, not using any greater Oath; and in any matter to be searched out by a diligent examination, they proposed to the interrogated Salt and Bread, that so he should witness the truth; whence perhaps came that Proverb, *Salem & Mensam, non volabis*. Our Saviour Christ is called *The Salt of Wisdom*. In holy Baptism, the Priest putting a little Salt to the mouth of the Infant, is wont to add these words, *Receive the Salt of Wisdom*; which custom, with the burning of Wax-Candles, always adjoined in Baptism, that Christ might be remembered to be the light of the world, is now in many places abrogated by Innovations; so that it is to be feared, if the world should continue long, the matter would come to that pass, that it would also be prohibited to name the very Name of Christ. For truly it is already come to that boldness, as to prohibit the Celebration of our Saviour's Nativity, under the injunction of a certain penalty. O the miserable condition of *Christendom* at this day!

Christ himself calleth his Disciples *the Light of the World, and the Salt of the Earth, Luk. 19. 9.* Salt and

Water, by Faith and Baptism unite God and Man: so also fixed Gold and combustible sulphur are copulated by the help of salt and water, which thing, although it may seem impossible, nevertheless it is very well known to true Chymists: for when they are minded to separate melted Gold and Silver, they are wont to inject a little sulphur, which interceding between both, like a Partition wall, disjoineth the gold and silver, by reason of the enmity which it hath with the gold, disagreeing with the sulphur by so great an antipathy, that it can at no time suffer it. Nevertheless salt and water take away this Enmity, reducing both into favour with each other, no otherwise than Christ, the Salt of Wisdom, and the Divine Light, as a Mediator, reconcileth the filthy sinner to God.

Christ saith in certain places, *salt is good, or it is a good thing*: When the Earth wanteth salt, being dead, it bringeth forth no Fruit; the same is Dung, when destitute of salt.

Here I have the eternal Truth Himself my Witnesses, reproving my impious *Farmerian* Enemies, who endeavour to reful my *Miraculum Mundi* with their false Calumnies and Cavils. In which Book I have demonstrated by most manifest Arguments, that the Earth is rendered fat and fertile, not by Dung, but the Salt which is in it. These Calumniators being convicted by the true testimony of its witness of their shameful Lyes, must without doubt bridle their venomous Tongues, and for time to come, cease to tear me with their savage Teeth. *The Truth may indeed be pressed, but never quite born down*; for GOD at length will bring it to light, although for some time it may be pressed and perplexed by Satan the Father of Lyes, and its capital enemy.

In another place Christ saith, *None is good but God*. Also in another place, *Salt is good*. This is truly a most efficacious testimony, and famous praise, by which Salt is extolled.

Salt is also taken for Understanding and Wisdom, and for that reason a rude and ignorant man is called dull and insipid, and in the same sense a speech is said to be unflavoury or witless, as if having nothing of salt, it were unhandsome and stupid; whence the vulgar Proverbs are wont to say, *How heavy and insipid is this man? How dully and unflavourily doth he speak? Also that usual saying, That which relieth, nourisheth*; and so on the contrary, where there is no flavour, there is also no nourishment. There is nothing can be brought forth in the nature of things, without the medium of salt; yea, Man himself is not born without the Sun, Man, and Salt. Therefore a certain Philosopher saith very appositely, *The vigour of salt is fiery, and of a Celestial Original*. The sun and salt are the Parents of all things, which procreate all things, and without which nothing is procreated; Bread and Flesh, which are seasoned with salt, afford more Virtues than all other Foods which are not salted. Salt being added to Wine in its fermentation, rendereth it stronger and sweeter.

NB. That nevertheless the salt here spoken of ought not to be common and vulgar salt, which doth not give a good relish to Wine. Empty Hogheads may indeed be purged by common salt dissolved in warm water, so that every ill taste or smell may be drawn out, and the wine preserved in its vigour. Moreover salt exceedeth wine in corroborating the heart of Man, and is therefore in many things to be preferred before it. And he that knoweth how to conjoin true salt with wine, and in the same to dissolve the Sun of the earth,

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(which is Gold) may from it extract a Royal Medicine, as is shewn in other places of my Writings.

For any man of understanding may easily see, that if the noble virtues of these three things Corroborating the heart, to wit, Gold, Wine, and Salt shall be joined together, what a noble Medicine will proceed from such a Conjunction. *Paracelsus* hath not without reason determined with the Philosophers, that no true *Aurum Potabile*, can be prepared without Salt. If there were no Salt in the Earth, neither Herbs, nor Grafs would be brought forth for the food of Animals, nor the life of Man sustained. All Animals also do therefore desire the Salt of fruitfulness, concerning which, you shall find more, in the description of my Green Liqueur. The Combination of Gold and true Salt, restoreth decaying seeds to their pristine fruitfulness, and also restoreth to half dead and barren Trees, their faded greenness, if that Medicine be applied to their Roots. On the contrary, common salt before preparation, is hurtful to Vegetables, and killeth them by its Corrosion, but after preparation it exceedeth dung in fattening them: Nevertheless, there are some Vegetables, which are able to bear the Corrosive power of salt, viz. those which grow spontaneously upon the Sea-shore, as the Herb *Kaly*, of which the Ancients prepared their *Sal Alkali*; for being burnt it leaveth a very sharp salt. Also all those Fruits which are of a sower, or bitter Taste, or have sower, or bitter Rinds, do equally bear the Corrosion of salt, as Olives, Limons, Oranges, Lentisk, and the Palm, which also rejoice in common salt; as on the contrary, the Vine, Grain, and Fruit-Trees are delighted with the sweeter Sun; concerning which, more hereafter.

I remember to have read, that in the Island *Sardinia*, near the City *Catara*, so great a quantity of salt hath been digged up, that it was given to the Inhabitants for their necessary uses, for nothing, and the rest was sold to Foreign Sailors and Merchants to be Exported. And the Countrymen so abounding with salt, gave it so largely to their Cattel, that they wonderfully abounded in Milk, whence they made most excellent Cheese, which was sold all *Europe* over, but whether it be that which we call *Parmalesus*, I know not. But it appears, that so great a plenty of Milk and Cheese proceeded from salt only, which is also very agreeable to the Truth. The same Author (whose Name is *Bernhardus Comenius*) also taketh notice, that in the *West-Indies* there is a City standing in a sandy and barren place, abounding with a great multitude of Fishes, which are theretaken. And the Inhabitants cast the Heads of the Fishes into a pit, or hole in the Earth, sprinkling them well with salt, and after a certain time taking them out, they plant or sow in every Head, a Corn of some Grain, and cast the same into the sandy Earth, and those Grains growing, do again bring forth an hundred fold. That this might be so done, is not dissonant to the truth, seeing that the Heads of the Fishes preserve the salt in the Earth, that it cannot be washed away with the Rain, nor the Grain be deprived of its Alimentary Juice. But such ways of sowing Grain, are tedious and laborious. I have a far other preparation of salt, which without much cost and labour, rendereth a great quantity of it fit to make sandy ground fruitful, and yet is not washed away by the Rain, salt is to be rendered sulphureous, that it may generally and universally nourish.

NB. Here some may say, if a sulphureous salt be the effecter of Fertility, how is it that the *Mare Mortuum*, or dead Sea of *Sodom*, abounding with sulphur and salt, doth neither bring forth Fish, nor contribute any thing to fruitfulness? I Answer, because the said Sea is full of bitter and Vitriolate Minerals, which by their Venoms are hurtful to all Fish, and Vegetables, and also Fishes themselves cannot live in Waters which are too salt, which is to be observed. For every thing that is too much, is turned into a Vice. But what Fertility salt imparteth to natural things, may be learned by Fish, many thousands of small Fishes at once, proceeding from the Spaw of one Fish, which is not granted to Birds and Animals. It was not in vain that God would have King *Pharao* Dream first of seven fat Kine, and afterwards of other seven lean ones, descending from the Earth into the Sea, thereby signifying fruitfulness to draw its Original from the Sea. *Joseph* being illuminated by God, both by Divine and Natural light, understood this, and interpreted the Dream: To wit, that it was in the power of salt. Salt is insignified with the Title of the Fountain of Philosophers. *Hesiod, Homer, Plato, Pythagoras*, and other Philosophers, deliver that of all things, salt is most affine or near to God. I assert, that by the help of salt, many become the chosen Sons of God. If the Earth should want salt, there would not thence proceed any fruits affording necessary Aliment for Men, whence Mankind would perish, not being able to draw its Nourishment and Multiplication from the Air, but is constrained to take it from the Earth. Salt becometh Milk, Honey, Sugar, Wine, Bread, Flesh, and passeth into all those things which we want. Salt is all in all things, the beginning and the end of all things which God hath created.

But some man may here ask; whether therefore do all things arise from salt? Whether it be necessary that salt in the seeds of Herbs, should be changed into Herbs, in the seeds of Animals, into Animals, and in the seed of Metals, into Metals? Whether such degrees may not be sooner passed by the quicker progress of Art, correcting the more flow advance of nature? I answer; yea, it may be done, it is possible for Art to bring salt to its highest perfection, by a far more compendious way, than nature can. But by what way that may be done, is not proper to shew in this place. This I would have you to know, that wonderful Generations do arise from the Sun or Fire, united with salt, which otherwise would not appear. For Example, in the Months of *June, July, and August*, fill a wooden vessel with common water, and expose it to the Rays of the Sun, that it may night and day receive the Astral Influences, and be dried up, being dried up fill it again with more water, and so keep the Vessel always full, in which at length, from the salt contained in the water, there will be brought forth Vermin of all sorts without any seed; such as is accustomed to be brought forth in other putrid Waters, as Frogs, Toads, and Serpents.

NB. That the Vellel must be made of Wood, not of Metal, lest the water should suck in a Vitriolate Juice which is adverse to the life of Animals: Also beware that nothing of Iron or Copper fall into the Vellel, and corrupt the Operation. Or fill the same Vessel with sand, and moisten it with water, then subject it to the Sun beams, and when it is dry, moisten it again, repeating the Humectations, and by this Operation you shall see various and unknown Herbs to come forth and be produced, without any seed,

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as is manifest from other places of my Writings.

Gold the most constant of all Metallick Bodies, and as it were invincible, feareth not the violent assaults of any other Element, and sublieth in the fire it self with so great constancy, as not to lose any thing of its weight, although for many years it should be kept in a continual torture of Fire. Nevertheless, salt draweth from it its Anima, and taketh away that fair red colour, and that constancy, whereby it was wont to resist the fire, so that it obtaineth the colour of Lead, and the brittleness and fugacity of Antimony. A thing exceeding the credit and belief of the unskillful, although experience it self witnesseth it to be true. Hence it appeareth, that there is a greater power in Salt than in all the Elements and Elementary things, and therefore we deem it to be justly called the Center of the Elements concentrated. Gold eludeth the most potent and subtil powers of the fire, which nothing can resist, and yet is overcome by Salt, which by a stupendous Miracle of Art, attracteth its most Noble Part, viz. its Anima being separated from its more gross and earthy parts. How noble a thing the Anima of Gold is, any Man may easily imagine, and without doubt may see, that it hath the chief place in Medicine. This is like to what *Sendivogius* hath written concerning his *Chalybs* spoiling Gold of its Anima, but although such an extraction hath divers times succeeded to me according to my will, that the Anima being extracted, the body of the Gold hath been left brittle, fugacious, and black; yet I confess, that the same Operation hath not always answered my desire: as if God would not permit such a secret to be commonly known. Therefore I am well content with lesser things, and have shewed these things only to the end that I might manifest the Powers of Salt, and teach them to others: Nevertheless, I would not have any Man persuade himself, that this Royal Medicine may be extorted from Gold, by the help of common Culinary salt; for to this matter another Salt is required, to be prepared by Fire and Art. But of this Artificial Concentration of Gold, the fourth part of the *Prosperity of Germany*, which God willing, shall shortly be published, will shew more at large. More indeed might be said concerning Salt, which we leave for another time and place, seeing that those things which have hitherto been spoken, seem to me to be sufficient.

Therefore I conclude, and affirm Salt to be a help to all things, and on the contrary; to want the help of nothing.

Here some Man may ask me and say, Of what Salt doest thou speak, for there are many sorts of Salt? I speak of the Universal Salt, known to all Men, which is boiled up from Sea water, or Salt Springs, or digged out of Pits in Mountains or other places, and put to common and familiar uses. This known Salt, I here call (and not injuriously) the Universal Treasure, and general Riches: For it administreth Nourishment to the whole World, that not only the Beasts of the Earth, Fishes in the Waters, and Birds in the Air, but also all Metals in the Bowels of the Earth may subsist for the use of Man, to say nothing of the great and Universal Medicine, which may be obtained by its benefit. Of right therefore it meriteth the Title of the Universal Treasure of the World, seeing that nothing can be found, which doth not owe its Original to Salt. But that one salt is purer, better, and more precious than another, I do not deny, that

the Original and beginning of all salts, is one and the same, and that their difference happeneth only from Accidents. For so long as salt is pure, and mixed with nothing, as it is made by the Sun in the water, it is one and the same, and possesseth one and the same Taste, and the same Virtues: But as soon as it is mixed with other things, or changed by the fire, its first nature being laid aside, it becometh either better or worse. This is taught by Wood and Stones, reduced by the fire into Coals or Ashes, in which part of the salt lieth away with the smoak, the rest remaineth in the Ashes, shewing a far other nature from that which it had before it was destroyed by the violence of fire. Indeed, by the Operation of the fire, all salts obtain a fiery and sulphureous nature, and therefore necessarily assume another Property, which being well known needs no dispute. The most common, most simple and void of all mixture is that salt which is elicited from Sea-water, or salt Fountains, or Mountainous Caverns. Vitriol and Alum, are indeed also salts, but infected with an Earthy and Mineral Property, and therefore unworthy of the name of simple salts.

Salt-peter is also numbred among salt, but it cannot be said to be a simple salt, such as the Sun operateth. For it is either digged out of the Earth, being generated of the Urine of Men and Beasts, and elicited by water, and by decoction shooteth into Crystals, and separateth from other Salts; or it is taken from the Mortar of old walls made with Lime, or it is taken out of Mountains and Limy or Chalky Hills, by the help of water; or it is made by Art of common Salt, Wood, or Lime-stones. But which way soever it cometh, it is of one and the same nature, and burneth with a flame, as my Treatise of the *Prosperity of Germany*, describeth more at large. Salts extracted from the Ashes of burnt wood, do again possess another nature and other Properties, and are called by the Name of Alkalies. Also there is another Salt prepared from Urine, common salt, Soot, and Bulls blood, known by the Name of Sal Armoniack, and is used instead of another Sal Armoniack, which was digged up in certain Mountains, and brought to us, which now ceaseth to come.

These are the most noted salts, and serve for very many uses, as Sea salt, Fountain salt, Mountain salt, which is also called Sal-Gem, which are used in the Kitchen for seasoning of food, for the salting of Flesh and Fish to preserve them some time from Corruption. The use of Vitriol is chiefly in Dye-houses, for dyeing Silks and Cloth black, as also in Apothecaries shops, where it serveth for the preparing of Medicines: Concerning these things, see more in the first part of my Furnaces.

Alum is profitable for Dyers, Physicians, and other Artificers. Of Salt-petre is made that devilish thing call'd Gun-powder. Besides this it is profitable for the making of many excellent Medicines, and for the Chymical Emendation of Metals, and the inventing and utility of many Mechanical Arts, as appears by the second part of my Chymical Furnaces, and the second part of my *Pharmacopœia Sæpærica*, also *Miraculum Mundi*, its Defence, and Continuation, as also the four parts of the *Prosperity of Germany*.

Of fixed salts, those which Wood Ashes afford, have their use in Medicine and Alchemy, but they are more frequently used in Dying of Cloth, and making Soap. Sal Armoniack is used in Medicine, Alchemy, and other Arts, but all those salts are so well known, that

that we shall supersede any farther Declaration of them. Those therefore which we have here mentioned, are Salts, which hitherto, by a long Progress of time, and continual experience, have made manifest their own Virtues and Powers. Among those, the Culinary or Kitchen-salt is most eminent in nobleness, excellency and necessity, inasmuch as it is that from which all the rest do arise, as also by the help of Art may be made, as my Writings every where teach; and is the Basis of all other Salts, whether known or unknown; which thing is most true, and will always remain to be true: For by a very easie business, by fire and the addition of any metallick sulphur, it is turned into Alum or Vitriol; by the help of Sulphur, Fire and Air into a burning Salt-petre; and by the help of a certain peculiar Iron fire, it passeth into an alkali salt, and being deprived of its sharpness, becometh very profitable for the dunging and fattening of Fields, and sandy and barren Land.

Moreover, the common Kitchen-salt suffereth it self to be purged and cleansed by its own spirit, and by that purgation and cleansing acquireth a clearer and whiter colour, pleasanter taste, and more excellent powers and virtues for the seasoning of Food, and salting of Flesh and Fish, for it becometh sweet, clear, and pellucid like Crystal, and shooteth into square Crystals like Dice, reduced into Figures so perfect, that they cannot be more perfectly formed by any Instrument.

Hence no man will deny, but that such a cleansed salt is more conducing to health than that which is gross and impure.

I admire at our supine negligence, who are so little sollicitous about our own health. We daily see with our eyes, that no man can want the use of salt, that it is subservient to the health of man, and also necessary for Cattel. And if when gross, as it comes from the pans, and as yet loaded with many faces, it doth much good; without doubt it would do much more, if it were cleaned and prepared by an artificial pricing Mercury into pure Gold. (if not of others) who have the government of many Subjects, to preserve a firm health of Body, and to cause such salt to be prepared for the use of their Tables. The Cost required for the doing this is small, by which the salt is made so sweet, that by its pleasantness it will invite every one to covet it. It doth not provoke thirst after the manner of common salt, inasmuch as it wanteth those earthy faces which yet adhere to common salt, but quengeth it, allayeth hunger, corroborateth the heart, as also the stomach, brain, and all the members of the body, admitteth no putrefaction in the body, preserveth it against all Diseases, and excelleth with wonderful Virtues, to which that gross salt is in no wise to be compared. Truly it is a great Treasure and high Gift of God, by which Mankind is sustained, nourished, corroborated, and increased, for which great thanks are to be given to God.

Besides the commemorated Purgation of salt, inversion and commutation of common Salt into Alum, Vitriol, Salt-petre, Alkalies, and the like salts mentioned in my Writings, there is yet a more secret purgation and emendation of the same common salt, exalting it into a more noble and far more excellent state, concerning which I do not remember that I have read any thing in any Author, except in *Paracelsus*, who maketh mention of it in few words, in the Chapter of the Virtues of common salt, saying, The Virtues of Salt consist in its preparation; crude salt only doth this, that it preserveth the goodness of Flesh and

Fish. But if it shall become a *Sal Enixum*, it keepeth all things in their state, safe and found, for an incredible space of time, it turneth Wood into Stone, as also dust and sand; the Leaves of Trees remain green in it; whatsoever is besprinkled with this salt, resisteth all mutation. It preserveth like a Balsam, and efflueth more, because in process of time it coagulateth all things.

These are the words of that incomparable Physician and Philosopher, concerning his *Sal Enixum*, but what this name signifies I know not, but I call it *Sal Mirabile*. He attributeth this to it, that it is able to preserve all things safe and found for an incredible space of time: Nor doth he erre from the Truth, for he that can prepare such a salt, may not only perform that, but also much more.

The manner of preparing it is well known to me, because I have often made it, and found in it things incredible: Whether my preparation agrees with the preparation of *Paracelsus* or not, nevertheless all things which *Paracelsus* ascribeth to his *Sal Enixum*, and far more, I do in no wise doubt to attribute to my *Sal Mirabile*; neither is it any matter to me or others, whether I use or not use the same preparation that *Paracelsus* did, provided my salt performeth the same things which I affirm it can perform. Also I would not give the same name to my salt, which *Paracelsus* did to his, lest Calumniators and Cavillers should, out of envy and hatred, take occasion thence of calumniating me, and saying, that my salt is not the *Sal Enixum* of *Paracelsus*, which hath already happened to me, when I gave the name *Alkehest* to my Universal *Moribundum*: For the proud Sophisters and ignorant haters of me, in their debauched Cups, have taken occasion to cry out against me with loud vociferations, saying, *The Alkehest of Glauber is not the Liquor Alkehest of Paracelsus and Helmont*; when nevertheless mine exceedeth the Liquor of *Paracelsus* and *Helmont* by many degrees. For mine is at hand, and to be seen, by help of which I prepare my *Aurum Potabile*, tinged Mercury into pure Gold. That *Liquor of Paracelsus* and *Helmont* is plainly invisible, and can be prepared or procured by none: *A small Bird in the hand is better than many thousands of great birds that fly in the Air*, I would not call my Salt by the same name, because I would not afford my haters, the wonderful Brethren of Ignorance, new matter of flouting, scoffing, and defaming me; although I well know, that my *Sal Mirabile* doth not in the least come behind the *Sal Enixum* of *Paracelsus* in Virtue, and perhaps also much to exceed it; which in the following Narration I have determined to make manifest.

As *Paracelsus* delivereth, that his *Sal Enixum* defendeth all things which are put into it from Corruption, for an incredible space of time, and at length, by an admirable Metamorphosis, transmuteth them into Stone; my *Sal Mirabile* doth not only perform that, but effecteth ten times more.

But before I enter upon the description of the Virtues lying hid in my *Sal Mirabile*, I thing it necessary to indicate, That Salts of this sort do every where occur in the Earth, and being dissolved by Water, are carried to the superficies, and such Fountains are enumerated by *Georgius Agricola*, shewing in what places they may be found, and that all things put into them are in a short time converted into a stony matter; which other Writers also testify, and especially *Celsus* in his Book *De rebus metallicis*. Nor is there any reason why any man should doubt it, seeing that Foun-

tains

tains of this sort offer themselves in our *Germany*, although few judge them to be of any moment. There is such a one in a certain place of *Helvetia*, which in a certain space of time converteth all Wood cast into that wholly into Stone. And the Inhabitants of that place do very often make trial of the thing by Experiments, by cutting some Wood, and reducing it to the figure of a Whetstone, and putting it into the water of the said Fountain, in which being converted into a stone, they afterwards use for the whetting of Sythes, and other the like Instruments. I myself have seen whetstones of this sort, and had them in my hands, from the figure of which it sufficiently appeareth, that they were first wood, and have been converted into stone by so wonderful a Metamorphosis. The matter is out of all doubt, and there are many Fountains obvious in other places, of the same Nature. I have not seen that in *Helvetia*, but I have seen the Infant of Bassi with *Dr. Exius*, who is yet living. To this Infant, in a very large Glass, standing upon a low settle, the Signior *Exius* had poured a certain peculiar Liquor, which had preserved it plainly uncorrupted and unhurt, to that time that it was shewed to me. And they told me, that the Infant was by the Liquor changed into stone; but I, seeing I did not touch or handle it, cannot affirm that for certain; but I saw it fitting with a full body, as if it had been but new born, since which time it is now above Twenty years, and then it had been Ten or Fifteen years in that Water, in which also it yet remains, as I have lately heard. But no man knoweth what water that was which the Signior *Exius* had put to that Infant, whether he took it from a Fountain turning wood into stone, or whether he made it by Art. There is a Fountain of the like nature and property in *Austria* at *Neapolis Viennensis*, a fenced City about eight miles distant from *Vienna*: I being a young man, long time since travelling towards *Vienna*, fell into a burning Fever, known by the name of *The Hungarian Disease*, which seldom any stranger escapes, and having somewhat recovered my former health, came to the said *Neapolis*, and suffering a Relapse, was constrained to stay there. And the Disease had so debilitated the Appetite of my stomach, that it neither desired nor digested any Food. The Inhabitants advised me to go to a Well of almost an hours Journey from the City, situated near a certain Vineyard, and to drink of the Water to recover my lost Appetite. Following their Counsel, I took a great piece of Bread with me to the Well, nevertheless I gave but little credit to their words, who told me, that I would eat all that piece. Coming to the Well, I eat the crumb of the Bread sopped in the water, and it relished to me very pleasantly, who before at home loathed the greatest Dainties. I took up the same water with my hollow crust of Bread, and drank it, which so excited my Appetite to eat, that at length I also eat up my Cup, which I had made of my Bread; returning home much better and stronger, I declared to the Inhabitants the event, succeeding according to my wish, who affirmed to me, that if I would continue the use of that water, the faculties of my stomach would be thoroughly confirmed. I asked them what kind of water that was? They answered, that it was water of Salt-petre, which I believed, being then unskilful in such things, but afterwards I found the contrary: For it could not be the water of Salt-petre, seeing that in no wise conduceth to the stomach, but rather occasioneth naucofulness and loathing. It might be, that the water of the said Fountain being evaporated to a Cuticle, might shoot into Crystals

like to Salt-petre, but notwithstanding was not true Salt-petre, as wanting all burning, and not taking flame, which they might easily have found, if putting a little of that salt upon a burning Coal, they had tried it after the accustomed manner of trying Salt-petre: For now it is certainly evident to me, that that Fountain contained that Salt which *Paracelsus* called *Sal Enixum*, and I *Sal Mirabile*, and also that it is the nature of that to shoot into long Crystals, and yet not to conceive flame. That *Well* is enclosed with wood, in which many water-Mice have their Habitation, which presently will seize and swallow any crumbs of Bread cast into the water. I asked why a *Well* of so great moment was enclosed and fenced with wood, and not with stone? They answered, That could not be done without damage, for the wood being taken away, which had now passed into a stony nature, it would come to pass, that the sand falling into the well, would choke it up. The wood which did not touch the water was now rotten, as I then very accurately observed, being a young man of 21 years of age.

Staying in the same City the following winter, I found, that the Moors or Marshes about the same, which rendered it so strong, were never frozen into Ice by the cold of the winter; which is an Argument that a certain peculiar salt is latent in that water; which is the reason that the Planks or Piles fixed into the Marshy ground, upon which many, yea, the greatest part of the Houses of that City, do stand, or are set, in a long progress of time, are changed into meer stones, and afford a firm Foundation to the Houses built upon them.

From all those indications I have hitherto conjectured, that all the Springs about that City abound with that sort of salt which *Paracelsus* calleth *Enixum*, seeing that in the said Marshes I have seen the Grass green all winter, which is a certain indication of this kind of salt there existing. The watery Animals which are in the Fountain and Marshes near to the City, confirm the conjecture, among which the number of the water-Mice is not small, which cannot live in all waters; and the shell-Fish, or Tortoises, which are every where in an incredible quantity, in the water flowing about the City, and watering the Marshes and Gardens, although wont to be esteemed by great men among Delicacies, are here of no account at all; and for that reason both the Citizens and Countrymen put two or three of those shell-fishes into the vessel in which they save the washings of their Dishes, to give to their swine, saying, that this sort of Animals abiding in their wash, conduceth much to the fattening them. And from these things it appeareth, that water-Mice and Shell-Fish of this sort, do delight in sweet waters, tempered with a certain salt. Any man that hath a mind to take the said Shell-Fish, or Tortoise, goeth into the Meadows or Pastures in a morning, which are watered with this kind of water, where they wander about in the wet Grass, seeking their Food; and also in the evening after sun set, when they return again to feed. If they perceive any body in their way, they presently betake themselves to the water, and in their entrance into the water, they retract their four feet, with their head and tail (like to the heads and tails of Serpents) they hide and secure in their shell, which is so hard, that it can scarcely be broken with a strong and heavy Hammer. The Inhabitants, when they will boil them, prick them with some sharp Instrument, at the feeling of which, they again put their head and tail out of the shell, which they presently

cut off with a knife. The body being boiled in water, the shell openeth of its own accord, out of which the Fish being taken, is purged, and prepared with Butter, Wine, and Spice, and is not much differing from Veal, nor of an ingrateful taste, and therefore reckoned amongst delicate Foods, by those who are given to feed daintily. Truly, I am persuaded, that Animals of this sort are not to be used as Food, but are rather profitable to the health of Mankind, because they abide in pure waters.

These few things my Experience hath admittred to me concerning these Waters, by which Wood is changed into Stone, yea, not Wood only, but also the skin and bones of Animals. I have also seen half a Loaf of Bread turned into a Stone; whence any man may conjecture, how great a fixing power is latent in the said salt, concerning which there is yet more to be said.

This Transmutation of Wood into Stone will put all the Brethren of Ignorance to the blush, who with their ridiculous Mockeries laugh at and deny the wonders of Nature of this kind; that by the operation of Art emulating Nature, a Body should be spoiled of its fugacity, and be transmuted into a constant and incombustible body. All Wood being burnt by the fire, is consumed, leaving nothing behind it except a few salt ashes, which nevertheless being transmuted into a stone by a fixing water of this kind, retaineth its pristine body, and cannot be consumed by any fire. This is an infallible Argument, most clearly refelling those Alike Deriders of Art. Can these Believers be more clearly refuted by any other Argument or Testimony? I speak these things, to the end that they may be brought to a more eadie belief, and not to be amazed with so great admiration, when they shall sit the following Treatise hear me affirm, That any subtle Spirit of Wine, by the help of this kind of Water, may be changed into a fixed Salt, constant in the Fire.

Seeing therefore it may come to pass, that by such a Transmutation any fugacious Spirit of Wine may pass into a fixed and constant Salt, Who will deny, but that the same constant may be afforded to fugacious Metals, by a water of this kind? But by what means such an operation, which seems impossible to every man, may be effected, may be worth the while to indicate in few words, seeing that it happened to me casually, not seeking it, and which I myself at that time should not have believed, although any one had seriously affirmed it to me.

The *Sal Enixum* of *Paracelsus*, or my fixed Salt, which dissolveth all things, is endowed with that virtue and efficacy, that it dissolveth all things by Fire; at a certain time I had dissolved Gold with it by the dry way, and would make trial whether Spirit of Wine would take a Tincture from it or not: The dissolution being made, I would have poured upon it a burning Spirit of Wine, but by chance I poured upon it in the Glass Spirit of Juniper; afterwards perceiving my error, I set the Glass aside, and half a year after, I found the Spirit tinged with a bloody colour, which I filtered through a brown Paper, and put the clear Tincture into a Glass, to separate the Spirit from it by the Fire. But seeing that I obtained not a Spirit, but an insipid Phlegm by evaporation, I found that that Red Salt, in a long process of time, had rendered the Spirit fixed, and by a wonderful change had coagulated it into a fixed Salt. The same Salt afforded me another Experiment, and indeed yet worthy of greater admiration: A certain Friend gave

me a glass of Oil of Citrons, prepared from mouldy or decaying Oranges and Citrons, by distillation, which Oil smelt multily, to take away which ill smell, I would have poured upon it Spirit of Salt, but by chance put to it my *Sal Enixum* dissolved, and distilled by fire, which indeed rendered me a clear Oil; but in small quantity, and scarce the one half; Therefore continuing a stronger fire, when nothing more would desist, I let the fire out, the Glass being cold, and taken out of the sand, I found all the residue of the matter turned into a black Coal, and when I had taken it out of the Glass, I put it upon a burning Coal, to see whether or no any Oil yet remained; but the matter being consumed by the Fire, left many Ashes, and discovered the fixing nature of my Salt. And searching more accurately into the operation, I found many wonderful things, which afterwards gave me occasion to call that Salt by the Name of *Sal Mirabile*. Let others search into the matter, by more exact Meditations, that they may be able to penetrate into it with a deeper sight. He that cannot see the virtues of this Salt, is destitute of Eagles eyes, beholding the Rays of the Sun with an unmoved aspect, and hath the eyes of an Owl, which can see somewhat in the dark, but is blind at Noon-day. Truly, it is a thing to be admired, that an Oil so combustible, in the space of a few hours, should be reduced to that state, that it should glow and burn in the fire like a Coal. Therefore let it not seem strange to any man, that any Wood abounding with much combustible Oil, should in a long progress of time, by the help of this Salt, be transmuted into a Stone. The knowledge of these things happened to me by chance; But who doubteth, but that the studious of Art may, by a tedious and accurate search, find out many more? There are enough to the wife.

Now followeth the Praxis, demonstrating the Theory, by what means this Salt is to be prepared, and to what uses it is to be admitted, and what wonderful and incredible things may be performed by its help, as well in Alchemy as in Medicine.

I. Of the Preparation of *Sal Mirabilis*.

This my *Sal Mirabile* is prepared and separated from all vulgar Salts, by the help of Art, nevertheless more easily from one than from another: For it may be elicited not only from the Salt of the Kitchen, but also from other Salts, as Salt-petre, Vitriol, and Alum: Alum and Vitriol abound with many sulphureous and mineral qualities, and therefore occasion much difficulty and labour in their separation; and Salt-petre possesseth a fugacious and burning nature. Therefore setting those Salts aside, we prepare our *Sal Mirabile* of that common salt which is used in Kitchens, separating from it, by the help of Fire and Water, whatsoever is earthy and terrene; and the same being prepared, as much as in us lies, we use it to the Honour of God, and the profit of our Neighbor.

Of the external Figure, Colour, Taste, and Smell of *Sal Mirabilis*.

This *Sal Mirabilis* being rightly prepared, looketh like Water congealed or frozen into Ice; it appeareth like the Crystals of Salt-petre, which shoot into a long Figure; also it is clear and transparent, and being put to the Tongue, melts like Ice. It tasteth neither sharp, nor very salt, but leaveth a little astringency

gency upon the Tongue. Being put upon burning Coals, it doth not leap and crackle after the manner of common salt, neither conceiveth flame like Saltpetre, nor being red hot, sends forth any smell; which gifts or endowments no other salt possesseth.

II. Of the External and Internal Use of my Sal Mirabilis.

IN the first place it is to be known, that my *Sal Mirabilis* containeth many great and hidden Virtues, inasmuch as it is not so sharp and acute as other salts, and therefore its internal as well as external use, is easily admitted in Medicine. Externally adhibited, it cleanseth all fresh wounds, and open Ulcers, and healeth them; neither doth it corrode or excite pain, as other salts are wont to do. Within the body it exerciseth admirable Virtues, especially being associated with such things whose Virtues it encreaseth, and which it conducteth to those places to which it is necessary they should arrive: For Salt is the Conductor and Rector both of good and evil Powers or Virtues, and carrieth them along with it self, according as they shall be joined with it. As the nourishment of Vegetables and Minerals consisteth only in Salt, so also the nourishment of Animals dependeth upon the same. For if the Herbs, Bread, Flesh, and all other things which we eat, should be destitute of salt, they could in no wise flourish, nourish, and encrease the Bodies of Animals, for by such it would forthwith come to pass, that they should consume and die: Therefore Food also nourisheth, as it is well and in due manner seasoned with salt; for a thing that hath no relish, is unfit for nourishment, according to the common Proverb, *Quod sapit, nutrit; And that which hath no taste, doth esse non nutrit.* Therefore the Omnipotent G O D hath given salt to all His Creatures, by which they are nourished and sustained; so that there would have been no need of fasting of Foods with salt, appointed for the use of Man, had not Sin and the Curse debilitated and corrupted all things, seeing that they were endowed with their own salt by Nature: Therefore for the succouring of Nature, those things which contain little salt, are to be salted with common and vulgar Salt, which is appointed by God for this end, that it might afford nourishment to the humane Body, corroborate and strengthen it, as we see that Bread, Flesh, and all Herbs or Sallets, may be indeed eaten without salt, but not to afford so much nourishment: For it is commonly known, that Flesh, Fish, and Sallets being salted, do far better satiate and nourish, than if those Foods should be received into the stomach wholly destitute of salt. For this reason men that undergo hard labours eat Flesh, Fish, Herbs, and other Foods, plentifully seasoned with salt, whereby their Bodies are preserved in their due strength; but those who are not exercised with such labours, feed upon Foods not so salt, but of a more easie digestion: Salt therefore is the only nutriment not only of Vegetables and Animals, but also of Minerals; yea, it universally nourisheth and encreaseth whatsoever existeth in the World.

Seeing therefore that without salt nothing can exist or live, and that the life of all things consisteth in salt alone, as is witnessed by daily experience; Wherefore do Fools think Salt to be a thing of so small moment? I answer, That this happens because very few know what Salt is, what Powers and Virtues it

exerceth, and what is recorded in its inward Penetrals: As is said a little before, I compare salt to a Carrier, because he carrieth or conveyeth all those things which are put to him, whether good or evil, thither to where they are to be conveyed, without any labour or trouble, but committing the care to him, who taketh all the burden.

In like manner, Salt being mixed with good things, which administer a good nourishment, assisteth the nutritive faculty, and is the conveyer, helper, and strengthener of the adjoined nutriment: Being mixed with venomous and hurtful things, it encreaseth and confirmeth the Venom with great detriment to the Body, insinuating it into the Passages and Members, into which, without salt, the Venom could not have penetrated; therefore with the good it is good, and with the evil it is evil, and being addicted to neither part, is subservient to both, according to the will of the Artificer, making good the vulgar Proverb, *Salt and Wine quicken the wit*: That is, when mixed with good things, they be moderately used. So also the contrary is true, if it be said, that *Salt and Wine deprave the Wit*; which I could demonstrate by many Examples, which for brevity sake are here omitted. Nevertheless, that I may be the better understood, I will instance in two things: As I said but now, if Salt be mixed with good subjects, containing a good nourishment, such as Bread, Flesh, and Herbs, the same are rendered fitter for nourishment, if daily experience may be credited, which no man will deny. Why therefore should not the contrary be likely, that it should render an evil thing yet worse, and corrupt it more, if it be associated with it. As for example, Common *Argentum-vivum* is esteemed Poison, and indeed truly, and is rendered obnoxious to a greater or lesser poisonous quality, according as it shall undergo this or that Preparation. If one swallow half an ounce of it, it operateth nothing in the Body, and passeth away without hurt; but being sublimed with salts, and exalted in its venomous quality, being exhibited in the weight but of two, three, or four grains, is sufficient to kill a man.

In the same manner Orpiment, as digged out of the Mountains, performeth nothing of good in a humane Body, exciting frequent and intolerable vomitings and stools, if given in too great quantity; nevertheless one, two, three, or four grains of the same may be taken without any danger, causing easie vomits and stools; but being exalted by sublimation with common salt, becometh so hurtful a Poison, that being drunk, it forthwith killeth Men and Beasts. So also it is with white Arfenick, which being sublimed with Salt, obtaineth such a poisonous nature, as is commonly known, although the cause of that evil be known to few, as the said Examples do sufficiently declare. I will yet add one thing over and above, for the sake of the Ignorant: They who have been versed in the Labours of the Fire, know those things, and want not my teaching, although their number be very small, but of the Ignorant and Unskilful it is large enough. Arfenick and Cobolt are indeed most vehement Poisons, but nevertheless are not hurtful to the Body, if they be taken in their corporal form; but being exasperated by sublimation with Salts, and reduced into a more fugacious nature, arriveth to that vehemence, that they are able to kill a man only by their odour. Those who have mixed Arfenick with Vitriol and Salt-petre, for the preparing of graduating Waters, as they call them, have experienced the Truth of this. Such Waters are so vehemently poisonous,

sonous, that they smite the Heart with a trembling of any one that taketh in their odour by the Nose, and also extremely debilitate the Brain. That vulgar Proverb, which saith, That *Salt corroborateth the Heart and quickeneth the Wit*, is true, when wholesome and healthful things are associated with it; but if things unwholesome and poisonous be adjoined with it, it doth the quite contrary, suffocating the Heart, and weakening the Brain, both which I my self have found.

Long ago, when I was young, being occupied with Arfenical Waters of this kind, it often happened to me, that those strong saline Spirits had almost put out my Candle. Again, on the contrary, I have found, when I have mixed corroborating subjects with Salt, that it hath encreased their strengthening Virtues, and exalted them in a wonderful manner. Therefore it is not without reason that *Paracelsus* teacheth, That Gold exerciseth no power or virtue in the humane Body, but by the Spirit of Salts, which insinuate the virtues of Gold into the Members, and augmenteth them. Here some may say, Seeing that other Metals exert their powers in humane Bodies without Salt, Why should not Gold also do the same, if it hath any virtues? I answer, That this is the reason of the difference, because the other Metals being reduced into small Particles, by filing, do act in the humane Body, by their own Vitriolate Salt, which they retain in melting, more easily admitting solution in the Stomach, and performing their Operations, by reason of that natural acidity, which Operations would be exasperated by the addition of Salt. But that the imperfect Metals effect nothing of good in the body of Man, is witnessed by Tin and Copper, in a Vessel of which, Wine standing all night, and then drank, causeth Vomitings and Cholical pains, as also Palpitations of the Heart; in exciting of which, Copper exceedeth Tin, which doth not so frequently excite Accidents of this kind, especially that which is not adulterated with Bismuth or Tingtals, but is pure and unmixed. Lead being swallowed, drieth, and cooleth too vehemently: But the filings of Iron are used medicinally, not without great profit, because they kill and expel the Worms in Children; and its *Crocus* is also wont to be mixed with astrigent Medicines with Fruit. Silver being filed and taken, is of no use in the humane Body, because it hath in it self no salt, with which Iron and Copper are endowed. Nevertheless, being prepared with Salt, it obtains an entrance into the Members of the Body, and expelleth all hurtful Humours, and strengtheneth the Brain. But being bitterer than Gall, it is so ingrateful to the Palate, that it is more difficult to be taken than Vitriol itself. Gold, the most eminent among all the Metals in purity and nobility in its own nature, possesseth no Salt, and therefore hath no Operation at all in the Body, whether it be taken in filings, or reduced to a subtil powder; for the *acidum* of the Stomach is not of so great power, that it can enter and dissolve Gold, as it dissolveth Copper and Iron, but discharged it with the Excrements in the same form in which it was taken. Hence the Unskilful have been so bold, as to exclude Gold from a medicinal use, as a thing destitute of all Virtue, and altogether of no use; an error truly not Philosophick, but foolish, proceeding from meer unskilfulness and ignorance, seeing that Experience doth altogether testifie the contrary. He that believeth no Virtues to be in Gold, may by an easie experiment find the contrary, if he shall dissolve it in Spirit of Salt well cleaned and rectified, and shall drink a little of this Solution mixed with Wine

or Beer, or any warm Broth or Gruel, for he shall perceive a very swift and healthful Operation, calling out all superfluous feces, according as they shall offend, either by Vomit, Stool, or Sweat, or Urine, without any weakening of the Body, but evidently confirming its strength, as I have shewed in my Book entitled, *The Consolation of Navigators*, in few words, by reason of the shortness of time, which did not allow me to treat of this matter more at large. Nevertheless I here assert, that a solution of Gold of this sort by Spirit of Salt, is able to perform very much in Medicine, although by reason of its ingrateful relish, it is not much to be esteemed: For seeing the Spirit of Salt, with which the Gold is to be dissolved, ought to be very strong from this corrosive Liquor, without which the Gold cannot be dissolved; first, this incommodity ariseth, that its use is unpleasant, it blacketh the Lips and edgeth the Teeth; to which may be added, that a great quantity of Liquor is required for this solution, and the acidity by degrees bringeth loathing to the sick, and sometimes the sick cannot bear the sharpness. Moreover, if this solution be taken in Broth, it hindereth its operation, and wanteth the desired success, of which it is not destitute when drank in Wine or Beer. For this reason this Medicament, which in it self is very noble, and of great moment, is difficultly admitted into use. But because we have said that Gold without Salts is able to operate nothing at all, its whole solution consists in such a *menstruum* which is neither corrosive, nor of an unpleasant relish, nevertheless openeth the Gold, and rendereth it apt to become a very whollom Medicine; which endowments I have found in no other thing but my *Sal Mirabile*, which being void of all corrosion and unpleasantness, is itself an excellent Medicament, and conciliateth a pleasant sweetness to all things: which it dissolveth: For when it dissolveth Gold, it doth not stain the lips and hands with any colour, like other solutions, which are made by *Aqua Regia*, or spirit of salt; neither also doth it asringe like other solutions, but is of pleasant use, and exerciseth its gift by a noble Operation. I have tried many admirable things with this Salt, and at length obtained a solution, or rather an extraction of Gold, green as Grass, and is a very wholesome and most noble Medicament: For he who hath brought Gold to a greenness, hath performed much, in praise of which, many ancient Philosophers call it *The Blessed Viridity*. But what this greenness may effect in Medicine, belongs not to this place, seeing that I intend here to treat of nothing but Salt, and to prove it to be the Beginning and End of all things, and that it encreaseth and exalteth the powers and virtues of all things.

And seeing that this is agreeable to Truth it self, and cannot be disproved by any man, it must necessarily be granted, that a Salt brought to the highest degree of Purity, (as mine is) must be far better, and more noble than any gross and impure Salt. Also because it amplifieth and exalteth the virtues of all Vegetables, Animals, and Minerals, and that Gold exceedeth in nobleness all other Creatures which are found under the Sun, it is easie to conjecture, that if the purest and most noble part of Salt shall be associated with Gold, that also a most noble Medicine must thence arise: For Salt and Gold, being the Off-spring of the Sun, are (as it were) immortal and incorruptible, and therefore afford help to all mortal and corruptible things, and defend them from putrefaction and corruption.

Nevertheless, I would not have any man persuade himself, that in these words I go about to assert any Immortality, my purpose tendeth not thither, seeing that I am not ignorant that there is no Medicine against Death. I would only signify this, that from the association of Salt and Gold, there must necessarily proceed an excellent Medicament. If Salt carrieth and promoteth the Virtues of other things, wherefore also should it not promote and convey the Virtues of Gold? Truly there is found no Herb so abject, no Stone so vile, nor no Bone so contemptible, that doth not possess its own Virtues: Who then can deny that Gold, as the most Noble Creature of God (after the Sun and Salt, of which it is generated) should possess Gifts and Endowments, to be preferred to those of the more vile Creatures? That nothing of evil can proceed from two excellent subjects, to wit, Gold and Salt, every unskilful Ruffick can understand; Wherefore then cannot those proud and idle Scoffers perceive it? I think it to be, because they would not be numbered among rude and ignorant Asses. If subscribing to my words, they should confess such a Medicine to be *in verum naturam*, and notwithstanding to be ignorant of its Preparation. But it were better for them not to envy those who have received such Gifts, nor to assault the Innocent with so many filthy Calumnies and Slanders, but to leave those things to them which exceed their own Capacities.

I now make mention of my Green-Lyon, whose wonderful Virtues are to be declared and manifested to the whole World; although I well know, that this Green-Lyon will not find fewer enemies than my white or red *Aurum Potabile* hath done: For the Devil can in no wise suffer, that any thing which is profitable to Mankind should be made manifest, therefore he useth all his power and arts to hinder the knowledge of the Truth, by casting stumbling-blocks in its way. What various Arts have been excogitated, to bring my *Aurum Potabile* into Contempt, and indeed by such a sort of men, who might easily think that I should not grant one drop of it to such haters of the Truth, although they should petition me for it.

And seeing those Pot. Companions could not ask it of me, they have endeavoured to extort it from me, under pretence of the sick, not that they would serve the sick, but only get an occasion of condemning it, and of bringing it into an Odium with the Sick, lest by it they should recover their former Health. Have they not taken counsel together in their Meetings, one offering this, another another thing, so that by every way possible they might oppugn my *Aurum Potabile*? But this Hatred and Envy, carried on against me with great study, I leave to the Divine Vengeance; and although many watery and obscure Clouds may endeavour to hide the Sun, and to overspread his warm and vivifick Beams with darkness, nevertheless they shall effect nothing; for at length being dispersed into vapours, and vanishing in Clouds, they will give place to the Solar Rays. There is nothing able to extinguish the Truth, which may indeed be prest, but never overcome, and is therefore like the Light, never wholly extinguished. The Air is never filled with so many dark Clouds, but at length they being dissipated, the Sun again appears to sight. By a like reason also the Truth at length freeth it self from the snares of Lyes, and cometh forth into the Light: Therefore I may without fear propose the Truth, although there be many that can but ill bear my liberty of speech; for GOD is to be obeyed rather than Men and the benefits due to Good men are not to be omitted for

for the sake of those which are Evil.

Therefore (in the Name of God) I will go on in declaring the Virtues of my *Sal Mirabile*; because I have said in the precedent discourse, that Salt is the Restor or Disposer of all things, carrying their virtues conjoined with it self, to their due place; therefore it is not fit that evil and venomous things should be adjoined to it, but such as are good only; if any thing of good be expected from it.

But there is no Creature under the Sun more noble, excellent, and pure than Gold, nor which more resisteth the destruction of all the Elements, which without a true solution, as we have said, cannot render the Body of Man partaker of its Virtues, and all corroding solutions are found to be unfit to dissolve it; therefore such a solution is required, as may be performed by the help of a *Salt* which is not corrosive; therefore taking such a one in hand, we will see what good is to be expected from it.

Of the Use of my Sal Mirabilis, as well in the Solution of Metals, as in the Preparation of Medicines.

First, it is to be noted, That not only Metals, but also all Stones, and Bones themselves, refusing the solution of all corrosive Salts, may be radically dissolved by my *Sal Mirabile*, and most things so dissolved, whether they be Metallick, Vegetable, or Mineral, put on a green colour, of some of which the greens remaineth, but others, in process of time, is changed into a yellow or red colour.

Concerning this wonderful mutation and solution, I could write a great Volume, if I had not designed this Labour for another place, intending here only to describe the solution of Gold, because another better cannot be found. I have found the solution of the rest of the Metals which are adhibited, to be unfit either for the preservation or recovery of Health, as I have admonished a little before; but I have found Salt and Gold to be most noble subjects, of which an excellent Medicine must necessarily be prepared: For Salt exalteth the Powers and Virtues of all things to a high degree of perfection, and insinuateth them into the humane body: This seems to me not unlike the volatile and fugacious Spirit of Vegetables, as of Wine and Beer, &c. which coming into the Body of Man, addeth strength to the Animal Spirit, that it moveth it self more readily, and with greater alacrity. Indeed every other Meat and Drink, whether it be Bread or Water, communicateth some strength to the Body, but not so powerfully and efficaciously as any gener as Wine, whose Spirit is very pure, efficacious, and subtle; so that its too plentiful use awakeneth all things that lie hid in a Man, and brings them to light. In the same manner Salt increaseth and confirmeth all things, & being united with them, maketh manifest all their hidden Virtues, which without Salt would remain in darkness. Who could have manifested to us that great Poison which lies hid in Arsenick, if Salts had not revealed it? If any melancholly Person (who otherwise in his own nature is prone to stillness, like one dead) shall drink any spirituous Wine, or strong Drink, his Spirits, that were before dull, and as it were buried in a Dream, will presently be awakened, and his Tongue set at liberty. The same doth Salt perform, which addeth an increase to the powers of all things, especially of the Metals, which it rendereth manifest and known.

known. And indeed without Salt Poisons could not have been known, as I have said a little above, concerning Arsenick and *Argent-vive*: If Salt worketh those things in evil subjects, by dilating and encreasing their malignity, Why should it not effect the same in good subjects, by augmenting their goodness? Therefore, because among Animal, Vegetable, and Mineral subjects, there are none more noble and eminent than Gold and Salt, which have their original from the Sun, it would be ill done to pass them by, and to seek viler subjects, for the making of an excellent Medicine, seeing that if we take Wine, Salt, and Gold, there are no other things which afford us so excellent Virtues. Therefore acquiescing in these, we will endeavour of them to make a most noble Medicament.

The PROCESS.

Take three or four parts of *Sal Mirabile*, and one part of Gold (rightly fitted or prepared for this Operation) mix them, and put the mixture into a strong Glass Retort, well luted, which place in an open fire, encreasing the fire by degrees, until the Glass be red hot, urge the fire, and continue it stronger, for an hour, then cease, and let all cool, take out the Retort, and free it from the Lute, that it may not be mixed with the matter contained in the Glass, but that may remain pure, which is to be accurately separated from the Glass, and together with what is sublimed into the neck of the Retort, to be put into a clean glass; which matter will look of a greenish colour: To this matter pour some Rain-water, that it may be dissolved in an easie heat, and the Salt, with part of the Gold, may be mixed with the Water. Filter this grass-green Solution through Paper, and draw off some part of the water by distillation, that the Green Liqueur may remain, not corroding nor tasting sharp, nor yet too urinous, but fit to be drank in all Vehicles. The Gold which the *Sal Emixum* hath not dissolved, you will find after the solution, which you may again use for the like Work; but the Green Liqueur you may presently use, as well in Medicine as in Alchemy, which will afford you many profitable things. He that will draw off all the Phegm to a green Salt, and then extract that salt with an alkalized Spirit of Wine, will obtain a Medicine yet more efficacious: For the Spirit of Wine will not be tinged with a green, but a red colour, and will be very sweet, rendering the Golden Virtues of the Salt more efficacious, and more commodiously and readily insinuateth them into the Members of the Humane Body.

NB. This is to be noted, That the *Sal Emixum* doth not imbibe the whole mass of Gold in dissolving, but only its purer part. Now, if you repeat this Operation upon the same pure mass, as yet once more, you will extract the greatest purity, and without all doubt obtain a most noble Medicament, which no man can refuse, although he be a capital Enemy to the Truth. This is the Operation, no less compendious than true, of preparing a great Medicine of Gold, Salt, and Wine, meriting the name of an *Aurum Potabile*, whose great Powers and Virtues are now to be manifested to the necessitous Sick.

Of the Powers and Virtues of my Green-Lyon, Vitriol of Sol, or Wonderful Golden Salt.

This green golden Liqueur may be safely and pleasantly used by all, whether young or old, sick or in health, without any difference of Persons, because it containeth nothing which is evil or prejudicial: For a cleansed Salt and Gold, never infer any ill, but are always profitable, exercising their wholesome Operations, as well in Vegetables, as Animals and Minerals, as in the following Treatise shall be clearly demonstrated.

First, This green liqueur, only by its external aspect, cheereth the Heart, Brain, and all the vital Spirits; seeing that of all colours there is none superiour to the Green in pleasantness, of which all men are witnesses, who have overcome the intense cold of a sharp Winter, behold the renewing greenness of the Trees half dead, and Herbs extinct, in the Spring time, with great delight and pleasure, and feel all the Blood in their Body to be renewed and revived.

Secondly, This Golden Liqueur being drank, strengtheneth and confirmeth the whole *humidum radicale*, Stomach, Brain, and all the inward parts of the body, beyond all other Medicines which I have hitherto known. Also it expelleth Melancholly, and all anxieties of Mind, taketh away Palpitations of the Heart, openeth Obstructions of the internal Vessels; it healeth the hurts of the inward parts, as Liver, Lungs, &c. and cureth all inward Exulcerations; it cureth Gravel and Stone, whether in the Retins or Bladder; it keepeth the Body soluble; expelleth Wind, with the pains of the Cholick; preserveth the Blood from Corruption; cureth the Leprosie, Scabs, and Fevers of all sorts; in process of time it taketh away the Gout; and to the insinuating Apoplexy and Epilepsie it affordeth present Cure; it cleanseth the Blood infected by the Scurvy, Plague, and other contagious Diseases; it preserveth and freeth from all internal Ulcers; defendeth the Lungs, Liver, and other parts, and removeth Exulcerations already arisen, and takes them away radically. It so tingeth all the inward parts of a Man with its Balsamick Virtue, that not being easily obnoxious to Diseases, they enjoy a sound and long Life. Outwardly used, it healeth all fresh wounds, no less than old and open Ulcers, without any Ointments or Plasters; for in curing Ulcers of this sort, there is nothing in Animals, Vegetables, or Minerals, which answereth to this in Virtue; as also inwardly it cureth Ruptures.

This is the nature and property of Gold, that it most potently taketh away all filth, and also astringeth; which two things are necessarily required in the Cure of all Ulcers. This Salt, by its own help, commodiously doth the same, and also wonderfully promotes the Virtues of the Gold: The said Liqueur very quickly taketh away the Ulcers of the Mouth and Throat, with all their scorbutick Infection, which are wont to give way but very slowly to other Medicines: And this it doth, although the Tongue, Uvula, and all the Palate should be full of Pusules. In short, for the taking away all internal and external Ulcers, I think no Medicine preferable to this Liqueur; but all other defects of the Body which it cureth, for brevity's sake, I will pass over.

Moreover, this green and golden Liqueur hath this nature and property, that beyond all other Medicaments, it conciliateth a wonderful fertility to all things, as its signature, the wit, the green colour, and my diverse infallible Experiments, do truly testifie.

Y y y Hence

Hence the seeds of all Vegetables being macerated in the same Liquor and set in meer naked Sand, they put forth golden Sprouts and Plants, having a smell much stronger and pleasanter, a fairer colour, and greater length than those which grow out of a fat Earth. Therefore this green Liquor holdeth the chief place in rendering Vegetables green and fruitful, and augmenting their growing faculty; so also among all the Medicines, I know it hath no equal in conciliating and preserving fertility in the humane body: For in all the Diseases of Mankind it bringeth great help and comfort, and effecteth more in alluring the fruitfulness both of Male and Female, than can be believed, and is so great an exciter of Venus, that it bringeth great folace not only to Old men, who being baulked by their younger Wives, are forced to lie still, but also to such Women who are barren in their flourishing age, and therefore destitute of Heirs.

I write not dreaming, but am taught by Experience, having seen some men so strengthened by this Medicine, that they have seemed to themselves never to have been weak, the which also some Women have experienced. Nevertheless such Medicaments are not to be administered too frequently to this Sex, fearing that without this sort of help they are wont to be sometimes exagitated by a more salacious Itch than is convenient: Its use is more safe to Old men, inasmuch as it cannot do them the least damage. Nor ought those things which I here deliver, to seem a wonder to any, for they have their certain and undoubted causes of Operation.

Let those two subjects, of which the Green-Lyon is composed, to wit, salt & gold be inspected; they are the best of things, & necessarily required to the generation of all things; for what herb can be brought forth without seed and salt? not indeed the least: for if the earth or sand wanteth salt, the seed of the Herb can neither have nutriment nor production: Yea, if the seed it self be also sowed in a fat Earth, and yet be destitute of the Rays of the Sun, it can in no wise grow out of the Earth, but will be suffocated and perish; the which thing is not hid to Rusticks, who after they have sowed their seed, do ardently expect the warm Sunshine. Therefore for a desirable coming up of Vegetables out of the Earth, and their increase, there is required a fat and salt Earth, as also the warm and fruitful heat of the Sun, with necessary Rain; which also is to be understood of the generation and multiplication of Animals.

NB. In *Aurum Potabile* salt supplies the room of fatness, Gold is the Sun, and the Spirit of Wine performeth the Office of the warm and fruitful Rain; so also no Minerals are procreated, but by the help of the sun, and labour of salt. They exercising their operations upon the Water, generate Minerals, as the Writings of the ancient Philosophers teach.

Some ignorant man may here object and ask, How it can be, that the Sun, by operating in the depth of the Earth, should generate Minerals and Metals of salt? Let him know, that the Sun, by his hot Rays, doth excite the central fire in the profundity of the Earth; which central fire is not unknown to those who are occupied in digging Metals out of the Earth, who sometimes feel so strong a heat, that laying aside their Clothes, they are constrained to labour very leisurely, yea, sometimes wholly to intermit it; as I have taught in *The First Part of my Mineral Work*. Therefore no man of a sound mind will dare to oppose these things, seeing that it is wholly agreeable to Truth, that generation and increase in all Animals, Vegetables, and

Minerals, do arise from the sun and salt, to which water is wont to be an help.

Seeing therefore that my golden Liquor is prepared of such subjects, it can operate no other thing than fertility, and thereby signed by Nature with that beautiful greenness, by which it signifieth its endowment to render all things fruitful: God adorneth nothing with His marks and signs in vain; from which, as from His signatures, the powers and virtues may be more clearly known, than from Books. For the signature with which things are signed by GOD and Nature never erreth; but the Books and Writings compiled by Men very often erre. Wherefore did the ancient Philosophers and Poets worship *Venus*, the Goddess of Love and of Generation, and attribute to her a beautiful green, generated of the spume or foam of the sea? What is the foam or froth which the sea catcheth upon the shore, but salt, which being dried up by the heat of the sun, is reduced to salt? And the Poets, especially *Virgil* and *Ovid*, who were men of great literature, would not have handled such things with so prolix an ambrage of words, but that they were willing by their Fabulous writings to reveal that great Philosophick Mystry to the world: Therefore I constantly assert, That this green Liquor is the chief Medicine of all things to grow or be encreased, as its pleasant Viridity and infallible Experience do testifie. The Ocean, the Mother of all fertility, sheweth also its greenness, especially in those places where it is rich in salt, and strongly irradiated by the Beams of the Sun. This is well known among Seamen, who from the change of the water into a greener colour, presently collect, that they are near to hotter Regions, in which the Sun-beams are more strongly projected; for in such places the Sea is so salt, that it thineth like fire: The Urine of those piling out of a ship, falling into the Sea, sheweth like sparks of fire; there four parts of water are found to contain one part of salt. The Mediterranean Sea is not so full of salt, as that which is between *Spain* and *France*; and again, in this it self is found not a little difference, seeing that the *Spanish* side exceedeth the *French* in saltiness; and the Ocean it self, by how much the nearer it is to the North, by so much it is less salt; for which reason also the salt is weaker, and of less Virtue, being more remote from the beams of the Sun. Therefore the *Danes*, *Sweeds*, and other Nations, inhabiting the Northern parts, although they have plenty of Sea-water, nevertheless they do not make salt of it, but fetch it from *France* or *Spain*; which is a Testimony evident enough, that salt is elaborated in the water by the most ardent Beams of the Sun, and produced for the sake of an universal fertility.

This is indicated by the *German* name of the Sea, *Meer*, which is all one as if we should say *Vermeer*, that is, *Encrease*, *Enlarge*. An Appellation very well agreeing with the thing, because without the Sea nothing would encrease in the Earth, but on the contrary, all things live, and are encreased by it.

Hence the green colour is a manifest Index and Signature of Fruitfulness, which might be demonstrated by infinite examples, which, for the avoiding of prolixity, is not here necessary, seeing that the thing it self is so manifest.

Some profligate Deriders, who love to oppose the Truth, may say, That this green colour doth not proceed from Gold, but from Copper, that so they may draw honest men away from the Truth, because no Gold seemeth to them to be of use in Medicine; with which Cavil they have before now accused my

Aurum

Aurum Potabile. That I may stop their impure mouths and obviate the frivolous Objections of this sort, I say, that I indeed confesse, Copper among the Metals doth obtain a green colour, if it be dissolved in *Aqua fortis*, and other corrosive Liquors of that kind: But Gold being dissolved in the same, appeareth in a yellow colour, and not a green, which is known to every body. But who would think me to be so stupid and rude, to impose upon any so open a Cheat? Who also in any wife could hide such a Cheat? For Copper being dissolved in salt waters, would presently discover the Fraud, by its evil nauseating and Vitriolick taste, of which but one drop being swallowed down, would excite violent Vomiting, and would not be a Medicine, but rather a Poison. Moreover, if you put a Knife into such a solution, it will be presently covered over with the Copper, and appear to be Coppery. The contrary plainly happeneth, if any pure Iron be dipped in my Green-Lyon; for it will presently appear to be gilt with the colour of Gold, and that more fair and eminent than any Ducat, or other piece of golden Money exhibiteth. If any Iron-Wire be put into it, and there left for a certain time, it will at length be changed into a pure Gold, which is an infallible testimony, that that Liquor doth not draw its original from Copper, but from Gold. Again, it may be objected, that a vulgar solution of Gold by *Aqua Regia*, also tingeth Iron with a golden colour, and adhereth to the same; therefore this is no strange thing, forasmuch as it is common and known to every man. I answer, That such a solution, not green, but yellow, doth indeed by precipitation adhere to the Iron, and dissolved the Iron it self, and reduceth it into a Mud, but doth not penetrate it, and preserve it in its form, as my green Liquor doth, which therefore is not to be numbered among those corrosive solutions; but that which is done by the *Sal Esaisum*, is rather to be called an Extraction than a Solution: For my *Sal Mirabile* is of that nature, that it doth not thoroughly dissolve any fine Powder, or Ooze of Gold, but only extracteth from it whatsoever is most pure, and leaveth the rest like a black Powder. Moreover, that Solution is not corrosive; for if it were, it would corrode and dissolve the Iron, and not tinge it with the colour, and advance it to the degree of Gold, the Iron remaining whole. By a like reason the green Solution of Copper, made with the vulgar corrosive waters, associateth it self with the Iron, in a green colour, corrodeheth it, and forsaketh the Copper. But if Copper be dissolved with my *Sal Mirabile*, that solution doth not penetrate Iron, but transmuteth the whole in its own form into Copper, yet not presently, but in a long progress of time.

From all these things may be seen the great difference between the vulgar corrosive solutions of Gold, Copper, and other Metals, and mine, void of all corrosion, which is performed by my *Sal Mirabile*, dissolving the Bodies of the Metals, after a far other manner than those corrosive solutions are made. Therefore it is not to be reckoned among vulgar solutions, seeing that it possesseth far other Virtues. The vulgar solution of Gold, made by *Aqua Regia*, hurteth all things, as a corrosive Poison; a little of it being put to any Vegetable seed, depriveth it of all its growing faculty, and thoroughly killeth it. Some drops of it being drank by a Man, would corrode his throat and stomach, like Poison. A Liquor of this sort, by its corrosive and gnawing faculty, converteth the Metal put into it into slime or mud. That solution which is made by the rectified Spirit of Salt, may safely be

taken by any, when a sufficient quantity of Water is mixed with it; but it is not sweet, it constringeth the Tongue, and itaineth the Hands; this doth not my green Liquor, for it neither coloureth the Hands, nor affringeth the Tongue, nor yet corrodeheth the seeds of Vegetables, but rather exciteth them to fertility.

Whence it appears, that my said *Sal Mirabile* is not corrosive, but by it self is a good Medicine for all Vegetables, Animals, and Minerals; which Experience it self most evidently argueth: Therefore it can work nothing but good, because prepared without any Corrosive, and represented to the eye by a wonderful figure, to wit, the fair Green colour.

This figure is an undoubted token of its extraordinary Virtues, in rendering all living things vegetate and fruitful, which lie absconded in its inward Penetrals. And this I think sufficient to be said to those foolish and idle Cavils of ignorant Scoffers, with which they may insult over me.

Whatsoever I have here ascribed to my Green Lyon, my red *Aurum Potabile*, extracted with Spirit of Wine, also performeth the same, and that as well in Vegetables and Animals, as in Minerals; for the Spirit of Wine can hurt none of them, but rather insinuateth the virtues of Gold into Vegetables and Animals, and rendereth them more efficacious. But concerning the solution of Gold by my *Sal Mirabile*, and its efficacy and operation, this may suffice for the present.

As for the solution of the other Metals, there is no need to make many words, or to write a large Volume about it, seeing that from what hath been already said, any man may easily conjecture, that solutions of this sort, made by the help of *Sal Mirabile*, are far better than those made by Corrosives. The Vitriol of *Venus* made by its help, doth not hurt Vegetables, as common Vitriol, which killeth the same by its corrosion; but the Vitriol made by *Sal Mirabile* wonderfully promoteth the growing faculty in Vegetables, so that Lunar, Venereal, Martial, Jovial, and Mercurial Herbs may be produced, which will have wonderful effects, especially if the Vegetative faculties of Lunar Herbs be encreased and promoted by the Salt of Luna; of Venereal, by the Salt of Venus, and so of the rest.

Enough hath been spoken to the Wife, but he that hitherto cannot apprehend what I have said, is an Ass, and unworthy of such *Arcanums*. From this Foundation a diligent Physician may erect a far other method of Curing, by which he may prepare for himself such Medicines, by which he may obtain Honour and Wealth. I have for many years observed, that Herbs are wont to acquire Martial faculties and properties, if they grow out of a reddish Martial Earth, although they were not before of a Martial nature, but of a Solar, Lunar, Venereal, Jovial, Saturnine, or Mercurial Property.

But how much more would the innate properties and virtues of Herbs be strengthened and encreased, if they were not nourished by the Dung of Animals, but set in pure sand and watered with *Sal Mirabile* impregnated with the virtues of Metals, and thence acquire the promotion of their growing faculty. Truly other Herbs of far greater Virtues, and other odours and tastes, would be brought forth, than the common, which are wont to be produced by the Dung of Animals, and the simple Salt of the Earth. By this means so strong an attractive Power may be conciliated to the Seeds of all Herbs, that by a Magnetick power they may attract to themselves the Aërial powers and influences, and so encrease their Virtues.

Virtues, that without any Preparation they might be able to cure all Diseases to admiration. NB. That it is necessary, that he that would exactly understand the nature of Herbs, should know how to promote the vegetative faculties of Solar Herbs, with Solar Salt; of Lunar with Lunar, and so of the rest, and not that he should intermix the one with the other, without any consideration; which without doubt would be a hindrance to the desired success.

Consider these things with an accurate Meditation, as great Secrets and Arcanums, which will not be revealed to the perverse World. A word to the Wife is enough; therefore I will add no more; but I make no doubt, but that this Revelation of my *Sal Mirabile*, in process of time, will be accepted by diligent Physicians, and bring so much benefit, that they will by the same effect much good in comforting and curing the Sick. All things have their time, so also this Arcanum, which in its time will be in vigour; but I would not have any man perfwade himself, that he may fill out of me the Preparation of my *Sal Mirabile*, I will not cast *Peccatis* before *ingratus* *Swine*, but will reserve them for Friends. But left an occasion should be given to ignorant Deriders, and those that hate me, of calumniating and slandering me, as if I myself were ignorant of preparing of a Salt of this fort, I have determined to deliver some small portions to divers prudent men, not of this Salt only, but also of those Salts which are endued with the Virtues of Gold, Silver, and other Metals, that at any time they may be able to exhibit a clear Testimony of the Truth: And I will produce those Herbs themselves, that I may have them in readines to shew to others.

Therefore let no man trouble me with his Letters, to ask of me this salt, or other Medicines, for I will communicate them to none, but such as I know, and with whom I am familiar.

Great Thanks are to be given to Almighty GOD, who hath made this present unworthy World partaker of such *Magnalia*. I have sought, and have opened the way to others; let another also seek, and enter by the way I have shewed, that insifting in my footsteps, he may by the easier labour, obtain a greater light of Nature.

But that I may omit nothing which pertaineth to the good Institution and Doctrine, and concerneth the glory and honour of Salt, I will yet over and above add one infallible Testimony, by which any rude and ignorant man may evidently see, that all fertility consisteth in Salt only, and that it is the most precious Treasure of the whole World, for the health of the Body, and that in it lie hid most ample Riches.

Fertility is indeed already demonstrated in many foregoing Testimonies; but because the History of the Prophet *Elisha* agreeth more than a little with these my sayings, and may be a clear Testimony to them, I have thought fit here to adjoin it. We read in *2 Kings*, 2. 19. that the men of the City said to *Elisha*, *Behold, it is good to dwell in this City, as my Lord saith; but the water is naught, and the ground about it is barren: Bring hither to me (saith he) a new Vessel full of Salt.* Which being brought, he went to the Spring into which he cast the Salt, saying, *Thus saith the Lord, I have healed this Water, from henceforth there shall no death and barrenness arise thence.* So the Water was healed even to this day, according to the word of *Elisha* which was spoken.

That this great Mystery may the better be understood, it will be necessary first a little to consider the History it self, from which it may be known by what

means the Salt of *Elisha* became so strong, that it expelled Death, and rendered the Water good, and the barren Earth fruitful.

When *Elisha* was to be carried up into Heaven, he said to *Elisha*, Ask of me what I shall do for thee, before I am taken from thee. *Elisha* asked of *Elisha*, that he would grant to him a double portion of his Spirit: *Elisha* answered, *It is a hard thing which thou hast asked; if thou shalt see me when I am taken from thee, it shall be as thou desirest; but if not, thou shalt obtain nothing.* And when they went on together talking, behold, there cometh a fiery Chariot with Horses of Fire, and parted them asunder; so *Elisha* was carried to Heaven in a fiery Chariot; and *Elisha* seeing this, cried out, *My Father, my Father, &c.* Listen therefore, Wherefore did *Elisha* say to *Elisha*, *If thou shalt see me when I shall be taken from thee, thou shalt have thy desire, otherwise not?* And why with this condition? Could not *Elisha* at his own will have rendered *Elisha* the possessor of his Spirit? Perhaps very easily, but *Elisha* would not without some medium, because *Elisha* was to be doubly seasoned with the Celestial Fire, by which he was separated from *Elisha*, for Fire bringeth forth Salt; and the Celestial Fire bringeth forth a Celestial Salt, and the Elementary Fire an Elementary.

In this History is set before our Eyes the eternal Divine Light, and also the natural, although few discern either of them, inasmuch as their hearts are hardened and obscured by a horrid blindness. And both the Old and New Testament are full of such Mysteries; so that I dare boldly affirm, That all the Treasures both of Soul and Body may be found in the Holy Scriptures, if we will; and that we have no need to read the Writings of the Heathen Philosophers. I add this one thing, That it is of God alone to open the Eyes of those who desire to understand Divine and Natural Mysteries; for without divine illumination, all things are dead and buried in darkness. This Truth putteth to flight the diabolical Cavils and Slanders of all scoffing Mountebanks and Jack-puddings. But which of them will oppose this, and seek fertility from any other thing than Salt? Truly, I believe no man, except that most profligate *Farriner*, with his wretched Followers, who determine, That Salt doth not fatten, but Dung; when nevertheless this is to be ascribed to the former, and not to the later. But those *As-like* Brethren of Ignorance, being convinced of their filthy Lyes by the most evident Truth, will I hope have their impure and shameless mouths more than sufficiently stopped. I therefore acquiesce in this demonstration, in which I think I have evidently proved, That the Sun and Salt are the most noble Creatures of God, and that Salt is by me rightly and deservedly called the greatest Treasure, and the greatest Riches of the World; because after an earthly manner of speaking, nothing can be more desirable for fruitfulness. Salt is the Original of all fertility, the Sun is the original of Salt, and God the Creator of all things, of the Sun, to whose Name be Honour and Glory for ever. Amen.

But although this demonstration, which doth evidently shew, that salt is the greatest Treasure in the world, be most clear, and beyond all doubt; nevertheless, I doubt not, but it will not satisfy the Covetous, who will say, Where is the Stone of Philosophers which we expected from thee, as the greatest Treasure of the whole world, that it being known and acquired, we might lead a brave life? But stay, my friend, until some man shall come and render fordid men partakers of so great a Gift: For thinkest thou that if I were

its possessor, that I would describe so great a Mystery, in such clear words as I have described the fertility of the Earth: Not at all; nor have I the power of doing that, seeing that a man cannot give to any those things which are not his own, but God's. Nevertheless, that the pious searcher after Truth may have some manuduction to a Work of so great moment, I cannot but hold forth to him that small Light granted me by Divine Grace, provided he hath not Owls eyes, shutting the light of Nature, because they cannot bear its splendour; which if he hath not, it cannot be, but he will give credit to a manifest Truth. And concerning so great a work, this is my opinion, That it is altogether possible, that the most noble universal Pearl, to wit, the Medicine and Stone of Philosophers, restoring the disease Bodies of Men and Metals to their pristine health and state, may be prepared of common salt: But of the Preparation, which is unknown to me, I can affirm nothing certain; but that it may be done, manifold and infallible Experience hath caused me to believe; which Experience I keep to my self, and will not part with it to any, although I could very freely, if I might or durst make pious men partakers of it: But because Faith is effected in us by God alone, it is to be fought from Him by Prayer, and not to be expected from Men.

Therefore that (according to my promise) I may demonstrate, That the Stone of Philosophers, lying

hid in salt, may be got out of it by the benefit of Art, I desire only this thing of the studious of divine Mysteries, that he would search after those things, in my Writings lately printed, which I have spoken concerning the little Fish *Echini*, viz. by what means he may be taken with a Net out of the salt Sea; for there he will find a sufficient manuduction, of which it is not necessary that I should here say any more. Those are the things which I was willing to add in honour of that noble creature salt: He that will not believe the most noble Pearl of a universal and particular Medicine, to be included in the inward Penetrals of Salt, I cannot help him; it is free for every man to seek and walk in another way.

Would it not be too tedious, I could also plainly prove, that from marine Bodies, (as Coral, Mother of Pearl, Oyster-shells, and the like things, being dissolved into water, and precipitated) may be extracted corporal Gold, which I have done with my own hands, and therefore can boldly witness it.

But I will shut up the Tables, what I have hitherto spoken being sufficient for this time; from which I hope and believe that others will receive benefit: Which I heartily wish, together with the divine benediction to all pious men. Amen.



T R E A T I S E

Of the Signature of

Salts, Metals, and Planets.

OR,

A Fundamental Institution evidently shewing by what means not only the Virtues, Signification, Nature, and Properties of *Salts, Metals, and Planets*, may be easily known, but also the reasons of their Names and Appellations, and this not from Books or Writings, but from their naked Signature, to be obtained and known by the help of the Circle and Quadrant.

Written for their sakes who delight in the Profitable and highly Necessary Contemplation of Divine Miracles.

To the well minded READER.

IT is a common saying, *Beware of those whom Nature hath marked*; the which is indeed true, if it be understood concerning men who are insignified with some preternatural marks, or of the abortions of Nature, but concerning other things it is false. For the Almighty God hath signed all His Creatures,

as well small as great, equally with their own certain signatures, and hath as it were subjected their depicted Lineaments to the Eyes of men, by which they might know what the nature and property of every thing is, and what Commodity and Profit it may bring to mankind. Hence not only all Vegetables, as

Z z z Herbs,

impurity is shewn to be in the thing thereby signified. But this Rule holds only in those words which were imposed upon things by the Ancients, in others not. Seeing therefore that it is beyond all doubt, that those two words, *Sol* and *Sal*, were by the Ancients imposed upon the things they signify, according to a true signature; we will therefore further explain them.

And here it is first to be noted, that all the forms and figures of Vegetables, *viz.* of Trees, Herbs, and other things growing out of the Earth, and also of Animals, whether Men or Beasts, also of Minerals, do take their original only from the circle and square, so that by those it may be known what bodies or members are round or long; for the Body of a Man, as also the Trunk of a Tree, have not only a round, but also an oblong figure, and the joints of every finger, and the leaves and branches of Herbs and Trees thereof the same figure, so that in those the Circle and the Quadrate are every where found.

And not only all the Creatures of God are noted with the same signature, but also all Writings and Letters, proceeding from *Adam*, *Noah*, and their Posterity, have taken their beginning from the Circle and Square. As for example: All the Latin Letters, even from the beginning to the end, you shall find to be composed of a circle and a square. *A* containeth two lines and a half of a square; *B* consisteth of two femicircles, and one line of a square; *C* is a femicircle; *D* is formed of a femicircle, and one line of a square; *E* hath three lines and a half of a square; *F* two and a half of the same; *G* consisteth of a femicircle, and half a line of a square; and so on to the last Letter of the Alphabet: So that all the Letters being composed of a circle and a square, were left by the Ancients to shadow out and signify those Mysteries to Posterity.

Therefore seeing that in my Treatise of the nature of Salts I have evidently demonstrated the Sun and Salt to be the beginning of all things, I think it necessary to interpret those two words, *Sol* and *Sal*, according to their nature, and to prove that they are the true beginning, and true end of all things.

Between the words *Sal* and *Sol* there is no other difference, but the middle letter, which in *Sal* is *Alpha*, but in *Sol* *Omega*; by which two Christ manifested himself to *St. John*: But the initial and final letters of both words are the same, they are distinguished only by the middle letters, *Alpha* and *Omega*, and that not without great reason; for as *Sol* generateth *Sal* from the beginning, and all things which are take their original from him, so also the end of all things shall happen at the last day, when all things born and arisen from the Sun and Salt, shall again be consumed by fire, as *Peter* writeth, to wit, that the Sun, Moon, and all the Stars, shall fall from Heaven, and that the whole Earth shall be reduced to Ashes. Therefore in *Sol* and *Sal*, the beginning and end of all things are perfectly discerned. Neither do these two words only set before our eyes the beginning and end of all things, with the destruction of this earthy and fading World, but they also make manifest the whole Mystery of the Holy Trinity, which I could very easily demonstrate.

But because the Egyptian Learning, built upon the foundation of Nature, is lost, and in the room thereof of Sophistical Schools have grown up, which by their vain loquacity have altogether oppressed and banished the truth; it might easily happen, that I might bring a Nest of Hornets about my Ears, if I should write such things publicly, as fly the knowledge of the learned

multitude. Therefore it is better to be silent, than to incurber my self with unnecessary contentions.

But that we may see there have also been others, who were not ignorant of the Mysteries hidden in salt, it seems fit to me, in the end of this Discourse, to subjoin the opinion of a certain learned man, explaining the Greek word *αλας*, *Chap. 13, Book 4.* and as it were, bringing into view the great Mystery of God hidden in the same, that so we may be invited to read the learned Book of the said Author, concerning salt, which containeth many things highly worthy to be read, and of the reading of which no man will repent; the name of the Author is *Bernardus Gomelinus*, printed at *Frankford*, in the year 1605, a Book truly worthy of any man's reading, and as such I studiously recommend it to those who are desirous of learning any thing of good.

But to return to my purpose, I seriously affirm, that the nature and property of Metals may be learned and openly known, not only from the signature assigned them by the Ancients, but also from that which the fire introduceth into them, and this signature proceeding from the fire, is far to be preferred to that of the Philosophers; not therefore because the Element of Fire possesseth a greater authority or might than all Philosophers ever had or can have: But because the Fire alwaies performeth immutable actions, and committeth no errors, nor can it commit any, provided the Operator who handleth the fire doth not deviate from the manner of operating, for at all times in one and the same manner it sheweth the signatures of the metals.

The nature of the fire is such, that whensoever we will, it exhibiteth to us, by a singular signature, the occult nature and hidden properties of the metals; for even as any burning spirit of Vegetables, or volatile salt of Wine, being drunk by men, stirreth up their nature and properties, and exposeth those things to view, which before lay dormant, and which would not have been known, if the warm spirit of the wine had not manifested them: So also is it with Salt, which, as we have taught in the precedent Treatise of the nature of salts, hath a power and faculty of exciting the nature of metals, and of manifesting their medicinal Virtues. But the Fire, of which we here treat, hath the faculty of subjecting their perfection to our eyes.

For as by the pure spirit of Wine the vital spirit of a Man is presently cheered, and being awakened, the hidden signature forthwith goeth out of the inward Penetrals of the heart; so that the Sanguine sings, dance, play, and are occupied in Amours; the Cholerick break forth into quarrels and fighting; the Phlegmatick grow drowsie and sleepey, and the Melancholy are taken up with speculations, meditations, and searches. These signatures the spirit of Wine can draw forth from the most inward recesses of men. By the same reason the signature of Metals is awakened, excited, and educed by the operation of the fire, *viz.* when they are melted in a Crucible; for the smoak or fume going out from them, presently indicateth the nature and property of every of them. Pure Gold, and free from all addition, emittech no fume alone, but being melted with salt, giveth a purple exhalation. Silver alwaies exhaletch somewhat of a blue, bitter, and unpleasant fume: The fume of Copper is green, and stinketh: Of Iron not so much as Copper, being also red, striketh the Noftrils with a stink: Lead and Tin send forth a white fume, stinking and poisonous: Argent vive, in its whole substance,

stance, vanisheth in a venomous fume, and these are the signs of the fumes, by which melted Metals, when they are not mixed, are wont to be distinguished and known from one another. But if Copper, or any other imperfect Metal, shall be mixed with Gold or Silver, it changeth the fume, and rendereth the proof or examen doubtful and uncertain: Nevertheless of the judging of the perfection of Metals by the Fire, this Experiment is of all the most perfect and certain, *viz.* when they are so melted by a very strong fire, that they move themselves, and are as it were turned or whirled about in the Crucible, and by how much the rounder this motion shall be, and the higher it elevateth it self, by so much it sheweth the Metals to be more perfect; the more depressed and equal, and the plainer the superficies shall be, the lesser of perfection is in that melted Metal. The trial of this thing is easily made, by which it is found, that among all the Metals Gold is chiefly moved on the Telt, or in a Crucible, by a round or spherical motion; next Silver; next to that Copper; next to Copper Iron; after Iron Lead; and lastly, after that Tin.

The same difference of perfection and imperfection is shewed by the pouring of a melted Metal upon a Porphyry stone, or any the like well levigated, and put into a Kettle of Water, so that the water may not touch its superficies, which is to receive the melted Metal: This therefore being poured out upon the said Stone, leapech and divideth it self into many grains, greater or lesser, more round, or less round, according as the Metal shall be more or less pure. But of all the Metals, there is none more imperfect than Tin, which by effusion upon such a Stone, very rarely disperseth it self into grains, but if the effusion be dextrously made, it dilateth it self in breadth in a very thip form, like to writing Paper, so that it may be writ upon (by a stile or stift) like Paper, and folded and sealed, and sent to others, after the manner of other letters: Such letters made of Tin, are hurt by no Water, so that they may be of great use, where necessity requireth secrecie in sending letters.

But that Tin spreadeth it self into such broad leaves, and doth not separate into grains, after the manner of Gold and Silver, the reason is its imperfection, which its before-mentioned signature evidently argueth, containing but little of roundness, and taking the greatest part from the square.

The knowledge of a metallick perfection is also acquired from the rotundity of the metallick motion in the Examen of Saturn, or the separation which is made by Lead in a Cupel, where Gold, before all the rest boileth with a spherical roundness, and all the lead being sent away in fume, by the violence of the fire, remaineth on the Cupel or Telt, in a pure, round, or spherical body, especially when there shall not be too great a quantity of Gold.

Silver doth not answer to Gold in its round body, in which it remaineth, yet it exceedeth Copper in roundness, which sometimes also remaineth pure and round, if it be in a small quantity.

Iron and Tin do not admit the Examen of Lead by the Cupel, for indurating the Lead, they deprive it of all flux, so that by combustion it is reduced into a powder.

Argent-vive is by the Fire wholly driven away into the Air, in which nevertheless keeping a perpetual flux, its signature of perfection may be judged of in the Cold, which perfection exceedeth that of the other imperfect Metals, and cometh near to gold and silver; for being diffused into small grains, it exhibiteth in

running a round or spherical body, imitating melted Gold: So that it is not without reason, that the Ancients in its signature have used the signs of \odot , \square , and a square; being within wholly Gold and Silver, if it be coagulated; the truth of which many Experiments have demonstrated to me, made by the Waters of gradation, as they are called; Experiments, I say, which I have performed in small Instruments, for hitherto I could not make them in great ones, and in a large quantity. If any youngman shall have a desire to try the same, let him in the first place beware that he use not corrosive and eating waters; and by this means render the Argent-vive more fugacious.

It behoveth that he seek and know true sulphur, which if it shall be red, he shall also bind it with a red bond; but if white, he shall preserve its colour constant, and bind it with a white bond, otherwise it is wont to vanish in fume.

These few things I could not pass by, but signify to the studious of the Divine Signature of Metals and Planets. Let every one occupy the powers of his Ingenuity in the exercise of this Science, that he may become expert in the wonders of things, especially of those which lie hid in the words or names imposed upon things signified by the Ancients, who have found out great Secrets, as well Celestial as Terrestrial, and have comprehended them in those. Some such words of the Ancients I would have interpreted here, but that in so doing I should have divulged those things which are not vulgarly known, for which cause it is better to pass them by in silence. He that will bend his endeavours to so great a Science, may obtain many wonderful things; but of these enough; it sufficeth at the present to have laid the Foundation, the rest I leave to him, who being prompt to the study of seeking, shall bring his mind to the acquiring of this knowledge; if he shall once get into the right path, he will find out more than he seeketh or desireth. Also Mountains, Woods, and Countries, by their signatures do not only indicate the Treasures and Riches, given them by God, but are also wont to foretell their own Fates, as their Rise, Encrease, and Destruction. It remains, that we briefly examine, and take a short view of the signatures of salts, with what notes or marks they are signed by God, and also by what they signify their natures and properties; for without doubt, they have their signatures, and especially the common and vulgar Salt, the which, wherefore should it not have its signature, seeing that it is the original of all other things? There is not found any Herb or Weed so vile, any Worm so abject, which wanteth its marks given it by God, by which it manifesteth to us its nature and virtues. I have above indicated the Sun by a Circle, and Salt to be designed by a square added to it: and in the Sun and Salt all earthly things as Vegetables, Animals, and Minerals, to have the beginning and end of their generation, propagation, and encrease; also all things being risen from the sun and salt, to be signed by the Almighty God, with certain signatures, from which their nature, powers, virtues, and properties may be known; neither have I only asserted, but also affirmed, that all the Mysteries of Languages and Words may be searched out and known by those signs, to wit, the Circle and Quadrate.

These things are so certain and true, that they are beyond all confusion, which I will make plain to every one, by one only Argument, not exceeding the Capacity of a simple Boy, if the envious Brethren of Ignorance, being lifted up by their great pride, shall

refuse to undertake it. That the Sun is conveniently and appositely signed with a Circle, no man will deny, because it never sheweth it self to the light in any other figure than a round fiery Sphere, which sign being attributed to the Sun, by the Ancients, so remaineth even to this day.

The Ancients have also signed Salt with a square, which by the length of time, and the negligence of men, hath vanished, so that every one hath signed the species of salts according to his pleasure, one in this, another in another manner; and by this occasion peculiar Characters are invented by almost every Chymist, whence one useth not that which another doth. But at this day among them, for the most part, Salts are signed in the following manner. The common Kitchen Salt hath the Character of a Circle, cut by a line transverse: Salt-petre hath a Circle representing the form of an Egg, and cut by a line drawn from the top to the bottom; But who was the Author of those Characters to these Salts, I know not, neither is it much matter, whether a man know, or not know it; but without doubt they were men who had never seen Salts brought to their highest Purity: For vulgar salts, as they are every where found, have not their proper figure and form which they ought to have, and which they obtain after their cleansing; So the vulgar and simple salt, as it is made from the Sea, or salt Fountains, or dug out of the Earth, hath not its true and proper signature, neither can it have, by reason of its many earthy feculencies; but after all its faces are removed, and it hath obtained a great purity and cleanness, its own true signature, to wit, a square then appeareth, and indicateth the sign which is due to it. I have already demonstrated this to be true in my Treatise of the Nature of Salts, where I have taught by what means every common Kitchen Salt is to be purged, that it shall be no longer rough, foul, obscure, and astringent, but clear and transparent like Crystals, both in small grains, and greater pieces, of a sweet savour, and a square or cubical figure, and which way soever it is thrown, always exhibiteth four Angles, like to a square, as if it were formed by Art: Going forth in this most pure form, it seemeth thus to speak to Mortals: *Here ye see my true and natural form, given to me by the Sun my Father, in the body of the Water my mother, which the Earth indeed hath covered with a rough and vile Garment, but Art hath again taken it off (praised be God) restoring to me my just form, to the future advantage of many sick; therefore as I was created from the beginning, so now I appear, without any impediment, to perform those things for which I was appointed by Divine Creation.*

If the Sun in the Firmament could by any accident be so defiled and corrupted, that he should lose his Light, it could in no wise be that any thing in the whole World could remain alive for one day. Which thing Experience it self sheweth us, when the Moon interposing between the Sun and our Eyes but for one hour, depriving us of his Rays; in which Case the Sun in no wise suffereth, nor is in any manner corrupted, but only hindered for that little time, from transmitting to us his vivifying Rays. Therefore if so small an Impediment in the Orb of the Earth can cause so many Diseases, and other Incommodities to men, why should not also the faces obscuring Salt, eclipsing its natural form, and rendering it more ignoble, be a detriment and impediment to its Powers and Virtues? Let every man judge, if a gross and impure Salt can be as commodious to all Men and Beasts, as that which hath been restored to the highest purity of its Body.

Seeing therefore that it is the great interest of Mankind to enjoy such a pure Salt, I have determined to prepare a quantity of it, according to that manner of purging it, prescribed in my Treatise of the Nature of Salts, that I may be able to accommodate many therewith. I have hope, that at length the Eyes of Mortals will be opened, that they may see how for a long time they have been seduced by blind Leaders, and finding this, will have a greater regard to their own health. Truly there is but a very small Labour and Cost required for the cleansing of common Salt, to free it from its earthy faces, and render it clear, transparent, and in the Water of a Cubical Figure, and that without the addition of any foreign thing, only by solution, filtration, and coagulation of its own proper spirit.

If by these Operations you shall bring salt to its highest purity, you may boldly assert, that you have acquired such a salt as the pure Sun operated in the pure Water at the beginning; when the Sun, seated in the height of the Firmament, would very freely perform his Office, yet being hindered by gross and turbid Clouds, interposing between him and the Earth, whereby he cannot render us partakers of his all-warming Rays, we ought not to impute the fault to the sun, inasmuch as he is not in fault, but rather to those thick and dark Clouds, which hinder us of his splendour and efficacy.

So also is it with Salt, which would freely exercise the Gift bestowed upon it by the Almighty Creator, were it not hindered by its terrestrial faces; therefore this impediment is not to be attributed to salt, but to the intervening faces, which hinder its salutary virtues. If it were in our power to remove those thick Clouds from the sun at our pleasure, as it is to separate the earthy faces from Salt, we might every year make our selves a very commodious Summer, which nevertheless cannot be done, seeing that God the great *Pater familias*, hath reserved this alone to His own Power.

As for the signature of Salt-petre, that certainly is very unequal, by reason of the great diversity of this Salt, arising hence, that it is well or ill purged, is defiled with more or fewer faces, or other strange salts. The Common, which is required for the making of Gun-powder, is never perfectly pure, but always mixed with other Salts, which cannot be separated from it by the accustomed and usual manner of solution and coagulation: Hence also you shall find no salt-petre, which can have that true and genuine signature, which God and Nature hath given it.

For by whatsoever vulgar labour and pains the Salt-petre which is got out of Stables, is purged by Solution and Coagulation, it is yet impossible that it should obtain its due cleanness and signature. But to acquire that, it behoveth to use the following Operation.

First, some pounds of Salt petre are to be taken, which are to be purged by Solution and Coagulation, and that to be so of ten repeated, until it acquire that purity which it is wont to admit by this vulgar Operation. Being so cleansed, it is to be divided into two equal parts, and one of them to be mixed with white Potters-earth (or Tobacco-pipe-clay) of which little Balls are to be formed, to be dried in the Sun, and put into a Glass Retort well coated, or an Earthen one which will hold the spirits, that the pure spirit of Nitre may be Elicited by Distillation, and received in a large Glass adjoined to the Retort, containing some Water, into which the spirit entrench freely. The other part of the cleansed Salt-petre, being put into a Cru-

Crucible, is to be reduced into a fiery fixed Salt, by the casting in of Charcoal, Tartar, or the Stellate Regulus of Antimony, then to be dissolved in rain Water, and filtered through brown Paper: So much only of this Liquor of fixed Nitre, is to be poured drop by drop to the distilled spirit of Nitre as will suffice for the fixing it. This Operation stirreth up a great noise, hissing and bubbling, which ceasing, admonisheth to leave off pouring in any more, and indicateth that those two contrary Natures, to wit, the acid spirit and fixed liquor of Nitre have mutually fatiated one another, and the corrosive spirit hath lost its corrosive nature, and the fixed fiery liquor its fiery quality, both returning to the pristine nature of Salt-petre. From this liquor, the Glass being imposed in sand, the unprofitable Phlegm is to be distilled off so long until a Cuticula or thin skin appear at the top of the matter, the sand being cold, the glass is to be taken out, and set in a cold place, and let stand for one night to shoot into long and sharp Chrystals, to be freed from the rest of the liquor, by pouring it off. This liquor is again to be freed from its unprofitable Phlegm by distillation, and again to be exposed to the cold to Chrystallise. Whatsoever shall remain after every Operation, is again to be Evaporated in sand, till the Cuticle appear, and to be reduced to Chrystals in the cold, which Chrystals may be used as common Salt-petre. The Chrystals of the two first Operations, are once more to be dissolved in Rain Water, Filtered, Evaporated and again Chrystallised, which are now white as snow, and extend themselves into length, thin, sexangular, and so equal, as if they were smoothed with a Plain: For not the least roughness or unevenness is to be seen in their superficies, but they Exhibit the true and natural Signature of Salt-petre. If any one shall be desirous of bringing this Salt yet to a higher purity, he may again divide this purified Salt into two parts, and from one draw the Corrosive spirit by distillation, and fix the other with Coals, and destroy both by Commixion, repeating the Operations as we have already taught, he will prepare a Salt-petre far more Excellent as well in Chymical as Medicinal Operations, as is manifest in many places of my writings.

If you Operate rightly all the Chrystals, none excepted, will be straight, sexangular, and equal in length, without any roughness, or unevenness, which is the true and genuine signature of well purged Salt-petre.

NB. The fixed liquor of Nitre, being left in the Air for a long time, and afterwards Evaporated to a Cuticle, shooteth into small Chrystals, representing the Effigies of Stars, whose figure appeareth in a rotundity so neatly and pleasantly Constituted, that those six Rays proceeding from the little body in the center or middle, seem to be most exactly disposed and distributed to an equal distance and length, as in a circle. Truly it is an admirable and stupendous work of Nature, and a signature very unlike to the former, in as much as the six Angles of this, are comprehended after a Circular manner, but in the other they extend themselves only in length and sharpness. Those things which we have here delivered concerning the true signature of common Salts, and Salt-petre, the same are also to be understood of the signature of other Salts, which must be free from all their fordes and faces, before they can shew forth their true signature.

Vitriol and Alum, which always shoot in a knotty and uneven Figure, after they have laid aside their

defilements, exhibit clear and pellucid Chrystals, which yet will be much clearer if purged by several Operations. Yea, being reduced to their highest purity, they put on a Cubical figure like common Salt, nevertheless in Elegancy, Beauty and Pleasantsness, giving place to that. Hence it is manifest, that nature is always ready for the gracing and adorning of her own fruit, if a helping Hand be afforded her by Art.

Before I put an end to this Treatise of the signature of Salts, I think it fit to point out in what degrees of Dignity, those two Words *Sol* and *Sal* differ, and are distinguished.

The word *Sol*, containeth two Circles and the half part of a square, O. is a whole Circle; S. hath two femicircles, which being conjoined, make an entire Circle; this being cut in the middle, and the half of the section turned upwards, towards the right hand, and the other half downwards, towards the left; giveth two femicircles forming the Letter S. L. is the half part of a square.

The word *Sal* hath only one Circle, to wit, the Letter S. consisting of two femicircles: Also one square, constituting the Letters A and L, which argueth that the good which is in Salt is partly tempered with the other Elements, and partly combined with Earth. The Sun far exceedeth Salt in purity, nevertheless it is not absolutely perfect because the Letter L containeth the half of a square, which sheweth that it cannot be endowed with an absolute and perfect purity, neither is it as Telescopes at this day demonstrate, by whose help those solar spots have been observed in those times. Neither also ought it to have an absolute perfection, the which belongs only to God, and not to any creature, in the number of which is the Sun: Nevertheless that he is the purest of all creatures, there is no Man dare deny. Hence it came to pass, that the ignorant Heathens attributed to the Sun Divine Honour, thinking that besides the created, there was as yet another uncreated Sun; That is, the Omnipotent God himself, the Creator of the Elementary and shining Sun, which according to the Words of Christ shall also perish at the end of the World. By a like reason there is a twofold Salt, viz. one Eternal, Divine and Celestial; the other Terrestrial and fading. And as the Holy Spirit proceedeth from the Eternal Light, and Divine and Celestial Salt, for the warming and enlightening the Hearts of Men involved in darkness, and for the defending our souls against the crafts and deceits of Satan; so also from the Elementary Sun or Fire, and the Terrestrial Salt, proceedeth that most noble saline spirit for the strengthening of humane Bodies, defending them against various Diseases, and preserving them in good Health. Therefore there is an Eternal and Divine *Sol*, a Celestial *Sal* and Holy Spirit; and also an Elementary, frail Sun, Salt and Spirit. But it is our Duty to Love, Praise, Honor, and Adore the Eternal Sun, and to him to commend the health of our souls. And to use and enjoy temporal and fading things for our necessities, with thanksgiving.

The Explication of the Words *Sals* or *Sal*, by Bernhardus Gomelius.

BUT before we undertake to expound such excellent places, it behoveth us to invoke the divine Being; that, that which cannot be fore-known by any Augury and Divinations, we not erring, but being led by the Divine inspiration and instinct, may at length expound;

ound; seeing that in the treating of things so Divine and unspokeable (that being wanting) if we should erre, it might be unpardonable, but if we shall piously and happily prosecute the matter, universal thanks and praise may be given to God alone, and to Christ the great giver of Salt. First, therefore we are to shew what the Celestial Salt is, and by what means it may be distinguished from the Terrestrial Salt, of which Christ speaketh in the Gospel. And because the Evangelical Words of Christ will be of great force to us in the speaking of it: And seeing that Christ when he would grace the Apostles with a high Title, called them the Salt of the earth: we think it not improper to call him the pure and undefiled salt of Heaven. For there is scarce any thing of so many preparations of an inferior nature which excels the (as it were) Divine strength and efficacy of Salt in this part: For Christ and his blessed Humanity is the only Salt that is placed upon the Table of the Blessed. In whom Salt is the fullness of his infinite, inexhausted, and never-ending divinity; which abundantly filleth both Heaven and Earth and all things therein; and then again making himself palatable to us, he exhibits himself to be tasted most sweetly by all Men. For from that all things that are, and ever were, and that shall be hereafter, have both received their being, and are made perfect, and without it could not be, for his Divine seasoning, or become palatable to the seafoner.

So this salt endeavours to express his, in whose name are both in Greek and Latin three Letters in one syllable; or rather to adumbrate this one and the same Divinity common to the three Persons. For tho' the Divine mystery and sacred things are shut up in Letters chiefly with the *Chaldees* and *Hebrews*, because GOD spake by them: Yet they don't always want the Elements of the tongues, especially the *Greek*, which was both derived from them, and words constructed from these things are not imposed from their power but from their propriety, as *Plato* the greatest of the *Greeks* supposes; For that the divine infinity and Immenity is express'd and explicated in Greek letters, is shewn in the *Apocalypse*, Cap. 1. where *John* saw and heard our Lord Christ preaching of himself, I am α and ω , the Beginning and the End.

For as the sun, when it lightly touches with its perspicuous light, by that its image and splendour it is forthwith given: So the Heavenly and Infinite Divinity, with all Goodness, as it were His Brightness, does not only leave His impress Image in the things themselves, but also in Letters, with which those things are enlightened and made perspicuous. The like we have found in Salt, design'd in Greek notes; for that which in Latin is called *Sal*, in Greek is called *αλς*, express'd by the same Letters, though chang'd in order, and extended in three Letters, but one Syllable; but the Greek word expresseth both more plainly.

For the first Letter of it is α , which by its infinite roundness, as with two Horns, seems to be brought into the following Letters; which note plac'd with the Holy and Divine Trinity, signifies the first Person of it, to wit the Immenite Father: Who as α does, is an infinite beginning in himself; so the same pours out and infinitely communicates his Nature to other two Divine Persons proceeding from himself: in one of which by Generation the Son; but in the other by inspiration he produces the Holy Ghost. And further, as α shews it self, its certain divine Operation follows that Eternal, Infinite and never ending Power of the same Mighty Father, which also he sometime pour'd out from his Almighty Infinity, to procreate the Uni-

verse. As also in two horns, I mean Benedictions one is found to be in Creatures by the Creation of things; and the other in their Preservation; both by the Wisdom of the Omnipotent Son, and by the Goodness of the Holy Spirit.

But the middle Letter λ , is a Note full of sweetness: which is express'd with a Face, round, and compos'd for Mirth; and its Figure is not unlike a Circle. For from the superior Angle two sides stretching backwards, seem to make a Triangle, yet without a base and without end, as the Letter it self expresseth. Which note again relates to the same Trinity, and represents the second Person of it, to wit the Son, or Word proceeding out of the most sweet Mouth of the Father: In which, two eternal Relations, as they call 'em, as to Infinite sides, are found: the one whereby he relates to the Father, from whom he proceeds by his eternal Generation; the other whereby he is Related to the Holy Ghost, whom he breaths together with the Father by an eternal and infinite habitude, and without any intermission.

But this note λ , I mean Christ the Son of GOD, and Mediator between GOD and Man, is never when time presents, wanting in his most beneficent Actions: that he who had taken the Human nature to the Divine, and was made the Corner stone, might (as he has done) connect the two Walls, to wit the *Israelites* and *Gentiles* as two sides, when he built in himself a strong and safe Sanctuary for them both, that flying to Him, they might escape the fearful sentence of everlasting damnation.

Lastly, the Letter ρ , concludes this Monosyllable. This note is design'd with a certain sinuous and Circumflex line drawn from hence and thence, which going from the two extremes in the middle, designs as it were two distinct semi-circles: out of which is shewn that they are made and constituted. Which lineament compar'd with the Trinity it self, adumbrates the third Divine Person, to wit the Holy Ghost. For that spirit proceeding out of the Bosom of both the Father and of the Son, by one and the same Inspiration, so knits those two distinct Persons, to whom he is co-equal and co-eternal, by an Infinite tie of Love, that he remaining a distinct Person, might agree with them in their most simple, individual, and immense nature.

But as to the other Persons, so also his Communication is attributed to the Holy Ghost in time; which is wonderfully express'd by the shape of this Letter: Yet if we consider its lower extrem, which seems as it were to arise of the former Letters of the Monosyllable, that is how it comes to be stretch'd chiefly towards the right hand: then from right to left, is wrestled a little by ascending by a sinuous derivation: and thence at last, with the like following obliquity it ends again on the right hand. For the same Holy Spirit proceeding from those two eternal and infinite Persons, as from an immense Fountain of Infinity, whilst from time to time he communicates his Gifts to the World, first those on his right hand, that is into the hearts of Men, he pours out to them that are illustrated and endued with the Divine Light of Nature: Then the same Light remaining, as it were bending from the right, ascending a little to the left, he brought forth the Mosaic Law written with the Finger of God, that is Dictated by him to the *Israelites*. Lastly, leaving the Mosaic Law on the left, he return'd to the right hand, and season'd the Evangelical Law deliver'd by Christ our Saviour, with his most Wife and Loving salt of Grace.

From

From all which, that which pertains to the business, appears from those three Letters of *Sal*, making one Syllable; and again, this unfolding it self in those three Letters, shews us, that there is in *Sal* a certain impress or image of the Sacred and Individual Trinity, which we worship, Three in One, and One in Three. Which Trinity we should have had, as an infinite, eternal, and inexpressible thing, commonly unknown, and incomprehensible, and as a most remote Salt, never heretofore put into an lumaue or Angelick Saltfeller, we should have left untouched; unless at length the Divine Person of this Trinity, the Word, in taking the Humanity to himself, as it were Salt into a Saltfeller, had presented to our taste so much Divinity; for this very Saltfeller, both in figure, is covered with the eternal splendour of the Father, as also pointed and illustrated with the embroidered Notes of His Passion; and likewise adorned with the Unction of the Holy Spirit is always placed upon the Heavenly Table of the Blessed, to season their Food and solemn Banquets, after an eternal and ineffable manner: for in him all divine, and most sweet relikes and excellent tastes of His eternal Wisdom are season'd anew; for Christ himself is not only the Heavenly and most Wife seafoner of the most opulent Feast, but also the very seasoning, and shing seafoned, and the Food which is so placed; for by Him his Heavenly Father, the King of kings, and magnificent Lord of lords, who out of His Goodness, and as He loves His good things, gives most liberally to all People a very large measure of Salt, that is, the help of His Grace to seek Him, and ask of Him Heavenly things.

True, that they who are called to the Heavenly Banquet may prepare themselves to come in this measure, and most happily sit down in it; but if (like fools) they refuse to come, the Measure being taken from them, they will be plung'd into eternal punishment. In which respect they may be likened to Flesh and Bones put into a Pot together, and water and salt put to them, hung over the fire to boil, and afterwards brought to the Table: Of which the Bones, which will be neither seasoned by salt, nor softened by water, are thrown under the Table, to be broken by Dogs; but the Flesh, because it is made tender by heat and water, and takes the seasoning, is again sprinkled with a purer salt on the Table, and eaten with the greatest pleasure: For as Bones are to Flesh, so are Evil men mingled with Good: Of which these, when they will neither relish the Salt of Divine Grace, nor be washed nor softened by pure Water, nor warmed by the heat of the Heavenly Word to be willing to divine things, will by the severe Judgment of the great Taster Christ, at his magnificent Table, be refer'd to the most exquisite punishments: Which obdurate and unseason'd Fools, He, for their hardness, finding unworthy his heavenly Table, plucks out from among the Righteous, and throws 'em down into Hell, there to be torn in pieces and devour'd by those infernal Dogs, to all Eternity.

But the Good, who have been seasoned not only with the former, but also the later Salt, I mean with antecedent (as we say) and consequent Grace, and are not only adorned with Virtue, but have suffer'd all crosses and afflictions of this Life for Christ: These, as Flesh worthy His Table, the divine Taster offering to God the Father, He seasons with the new Salt of Glory; and though Aliens and Strangers, places them among the Angels and Citizens of Heaven, and

with these Commands an equal Mansion of blessedness to be given to them, though nevertheless they both come to the same felicity, by a different way of meriting it. For from what those above Angelical Citizens, from the very beginning of things, and since first a full desire seiz'd them, they have preferred the Heavenly Suppers of Christ to the mid-day Dinners of the most insolent *Lucifer*; they have deferred to follow those Oppipary, and (as they call 'em) Princely Banquets seasoned with the most sweet Salt of Grace, and made repleas'd with the shining light of glory.

But the Inhabitants of the Earth, and Men, Strangers of Heaven, oppress'd by the great weight of a Body, and involved in the thick darkness, have made so long a Journey to the Country, by a far more tedious way of travelling; for the Universal occasion of desert is not to be snatch'd by those in the Journey of Life it self, and those under the terminative moment following the Creation; but they ought rather studiously and laboriously to take this by a continual and daily period of life, even to their death: Besides that, the Journey to the Country is so hard and wearisome, and expos'd to so many dangers, brings so many anxieties upon Strangers every where, leads them into so much anguish of mind and troublesome solitudes, that it is plain, that not humane ability, but divine grace must cause, that Strangers are not deficient in the way, or that they do not wander from the true scope or end of their Journey: Which would be the fortune of every one in the World, unless Christ, by divine Counsel constituted the *Prophet* of the whole World, who giveth to his Strangers every where Salt and Wood, doth recreate and refresh them, and also lead them into the way that directs to the same Heavenly Country.

This may suffice to be spoken of the signature of *Salts, Metals, and Planets*, at this time. He that diligently weighs it, will search Nature deeply enough: If God grant me life, I shall publish a Tract of the *Signatures of Vegetables, Animals, and Minerals*; also in which I shall deliver many things good and profitable for all sorts of Men.

O Eternal, Almighty, Bountiful, and Merciful GOD and Father, the Heat, Light, and Sun of Justice, enlighten and warm the hearts of all men, overwhelmed with a sleepy numbness, shadowed with thick darkness, and made rigid by an horrid coldness, that they may see, know, love, and fear thee, and give thee due Thanks and Praises for all thy Benefits, and at last awakened, they may receive that sight they had before lost.

O Eternal Word of God, most sweet, wholesome, and palatable Salt, Jesus Christ, recreate and refresh our sick and miserable souls, by thy Divine Virtue and Efficacy, that we being corroborated, neither Death nor the Devil may hurt us.

O Holy Ghost, the only Leader to Truth, who proceedest from the Eternal Fire and Heavenly Salt, comfort all the sullen and dejected Sheep, wandering this poor'd Marsh and Valley of Miseries, among devouring Wolves, and corroborate them, that they may patiently endure their Crosses; and hereafter separate them from the sinking Goats, and bring all the Elect into the green and heavenly Pastures, that there they may continually behold the eternal Light, taste the heavenly Salt, and enjoy the fullness of Joy, Peace, Grace, and Mercy for ever. Amen.



THE
CONSOLATION
OF
NAVIGATORS.

In which is Taught

How they who Travel by Sea may preserve themselves from Hunger and Thirst;
as also from Diseases, which are wont to happen to them in long Voyages.

Written for the Help, Comfort, and Solace of all those who make long Voyages for the Good of their Country.

THE PREFACE.

Reader,

OUR SAVIOUR CHRIST hath prescribed to us this Doctrine, that we should behave our selves towards our Neighbour, as we would that he should do to us; yea, that we should love him as our selves: This He hath earnestly commended unto us, as the indispensable Will of God, contained in the Law and the Prophets. But although there be few who consider this, and all men seek only their own, yet one or other is still found, who calleth this duty to mind, and as far as he can, taketh every opportunity or occasion of serving his Neighbour. Although also there may be some who bear a love to others, and desire to assist them with their counsel and help, and yet are destitute of a power of giving them any thing; and yet no man can distribute more than he hath. Moreover, Covetousness and Envy so far governeth some, who have plenty enough to bestow upon others, that they will do good to none but themselves; of which sort there are many now to be found in the World, and hence Charity towards our Neighbour is wholly vanished.

Seeing therefore that the Almighty, of His singular Grace, hath bestowed on me a small Talent, in searching out the Secrets of Nature, it is, without doubt, to the end that I should thereby do good to others; which Talent I would not bury, but have put to use in writing particularly from year to year, for the publick Good, and being assisted towards my Neighbour, have made them publick. I have also determined, if time shall permit, to publish yet more and better things of this nature. But after that some described Voyages to the East and West-Indies, and other far distant places, had happened into my hands, I perceived, not without great admiration what innumerable dangers occur on the Seas, not only from Robbers and Pirates, but also the adverse flux of violent Winds, (to pass by many other Calamities in silence) by which the Ship, toge-

ther with all in it that draw breath, are overwhelmed, and perish: And when I further contemplate those things with an intent mind, nothing seems to me more grievous and intolerable than Hunger and Thirst, or the want of Meat and Drink, which sometimes happeneth to Ships by adverse Fortune: For when they are overcome by the hand of an Enemy, they are wont indeed to suffer the loss of their Goods, but the Lives of the men are for the most part saved; which loss of Goods they may again easily repair by Merchandizing; and although they should be adjudged to death, yet their pain would quickly have an end. But if through an ill fate of necessity one be destitute of Bread and Water, and be forced to tear another in pieces to eat, that is of all the highest misfortune, and death it self were more desirable, than to sustain extremities and miseries of this sort. And although the want of Food doth not so frequently happen, yet the want of Water often falls out, whence Seamen are grievously tormented with Thirst, to whom, as in a most urgent Calamity, Mercy and Christian Compassion ought to be administered; but, Who can carry them succour afar off, and in a tempestuous Sea? And seeing that the Prosperity of Maritime Countries (where for the most part there is no Wine, no Fruits, no Meats, as in the upper Germany, and other places) consisteth only in Navigation, it were very well worth the while that this should be promoted to the utmost. I have therefore diligently considered the matter with my self, and have found that a Remedy may be applied to this Evil, viz. the want of Meat and Drink, by providing in time an Apparatus, or certain matter to be carried in Ships, which is of far greater efficacy in mitigating Hunger and Thirst, than common Bread and Water; yea, it is able to prevent and expel that Disease which is so familiar to Seamen, to wit, the Scurvy, which is often a great hindrance to Sailing: So that this matter may be carried together with the usual Provisions, as a Preventative, and in case of necessity,

ry, as if the Ship be overmuch harass'd with Storms, or be hinder'd by other infelicities, or detained longer in the Voyage than expected, it may be taken and used. It were indeed to be wished, that these materials might never be wanted in any Ships, but as the old Proverb hath it, A superfluous Caution never doth hurt; therefore it is always better to have a thing in readines, which we do not use, than to want it when its use is necessary. But what those materials are, of which I speak, and how they are to be used when need is, I shall communicate to my Neighbour, for the publick Good, not at all doubting, but that this invention will prove highly profitable to many who use the Seas.

The Reader now understands what hath moved me to write this Treatise, viz. the love of my Neighbour, and that I have not compos'd it only for the sake of some few, but that I have emitted it to the publick, to the end, that those highly profitable Inventions might afford help and comfort to all Mankind, and especially to all that use the Seas, and such who are injur'd in their health: Nor do I doubt but that this my sincerity of mind will be a great preventative, comfort, and relief to those who pass the Seas, when they are in danger, by the benefit of which, they may escape various Chances and many Misfortunes, or beware of them for the future: For by this means which I shall here produce against Hunger and Thirst, or other Diseases which are wont to afflict Sailors, it will be found, that what I ascribe to them may be fully deduced to the desired effect. And therefore many Thousands of men may thence receive Fruit and Profit, as long as the World shall endure; so that all who travel the Ocean, and are afflicted with any Disease, ought to rejoice, and give Thanks to God.

Now, if any one should yet doubt of the success of this matter, (which nevertheless is shew'd from so clear and irrefragable Fundamentals) I leave him to his freedom, whether he will put the matter into examination, and certify himself of the Truth, before he give credit to it:

Which also may be proved in a small quantity, and not only on the Seas in Voyages, but on the Land also in the House, among both the Sound and the Sick. Therefore let no man wish what he doth not understand, but let him commit the thing to trial, and see its reason and quality, before he contemneeth it, or pass an immature Judgment, lest his curiosity or imaginary Wisdom from a vain insight, deceive him, or confound him with shame, when the proof shall shew it to be better than he could persuade himself.

But that in some places I have used obscure words, and have not propos'd all things so clearly, as that every man will be able to understand them, let no man wonder at this: For I have certain reasons for so doing; for no man will have any prejudice or injury thereby, seeing that nevertheless there are such points of this sort elucidated, which will remain after me safe and sound: Therefore whatsoever the Reader shall here find written, let him esteem it worthy to be received and embraced, as the Gift of God; and which, if I find to be gratefully accepted, more (God willing) shall follow. Also to all those who shall have need, I offer the Medicaments aforesaid, profitable against Hunger and Thirst, and all Sea-faring Diseases, a good quantity of which I will cause to be prepared, that every man may use them that will, and thence satisfy his desire.

Wherefore it is the interest of any to whom I have committed the Preparation of this Medicine, to betake himself to it, and when need shall be, he will not be unwilling to use it. I have not sought my self in these things; being content to serve my Neighbour out of Christian Charity. And although this my good Will shall not be accepted by foolish and ungrateful men, nevertheless God shall have the praise, who hath committed to us a mutual participation of love and good will, which also in his own time will grant the benefit of this to be derived and redound to my Children after me, by some pious Souls, of which I make no doubt; and therefore readily acquiesce in my present condition.

THE
Consolation of Navigators, &c.

NOW to come to the Work it self, we will point out the Remedies, whose use is so necessarily required in Navigation, and which is able to preserve us not only from the pressures of Hunger and Thirst, but also from the injury of Diseases; and they are no other than Corn and Water concentrated, or reduced into a more compact and narrow compass, the one for the extinguishing of Hunger, the other of Thirst; and how they are both to be concentrated, and administered in case of necessity, I will exactly describe and teach. And,

I. Of the Concentration of Corn or Grain.

AS for this, it is sufficiently explained in the First Part of the Prosperity of Germany; so that it might be here pass'd over; nevertheless I will make this short repetition.

Make a Malt of Wheat, Barley, Oats, or any other Grain, as is usual for the brewing of Beer, [See the

full Description, Prosp. Germ. p. 1. cap. 2.] and extract all the strength with Water, as if Beer were to be made thereof: Afterwards boil this Liquor away gently in broad and shallow Vessels or Coppers, to the consistency of Honey: The Dregs or Grains serve for Food for Cattel, but the inspissated liquor or juice may be commodiously carried by Sea; and at pleasure may be made into Beer with a mixture of Hops and Water. And because for the most part eight Tuns of Grain afford one Tun of the inspissated Juice, every Tun of Grain maketh a Tun and an half, yea, two Tuns of Beer, for every Tun of Liquor maketh at the least eight, ten, twelve, or more Tuns of Beer, according as you will have it stronger or smaller. Therefore it is easier and cheaper to carry in a ship one Tun of this Juice, than ten or twelve Hogheads of Beer, which easily corrupts and grows fowre; but on the contrary, this Liquor being kept from the Air, retaineth its goodness; and this is of singular advantage, seeing that good fresh Beer may be made of this Juice. To this also belongs another great Commodity, viz. that

that if this Juice be mixed instead of Water, with Wheat-flower, and baked, it makes an Efficacious Bread, which affordeth far more nourishment to Sailors than their common Bread, and containeth in it self so great power, that it can refresh and cheer the Sick: For which reason our Ancestors did not in vain use to temper fine Flower with clarified Honey instead of Water, and make Bread thereof, which they called Cakes of Life, because they were a great support to the Humane Body: and as it were excited the Life it self: But in our daies all things being subservient to *Avarice*, you may see those sweet Cakes, made up with common, impure, and unclarified Honey, which cannot generate much good blood, or juices; but this our Bread will approve it self to be of a greater sweetness, nobility, and efficacy, inasmuch as the elicited Juice of Grain, affordeth a far better nourishment than Honey. But if any desire to proceed farther with it, this concentrated Liquor of Corn will yet afford a greater utility, *viz.* if being inspissated or brought to a thick consistency, it be mingled with fine Flower of the best Mault, and Bread made thereof, which after it is baked, is to be cut into pieces, and again put into the Oven, till it be dry and hard, and then put up into Chells or Hogheads, to preserve it from the Air, and so carried to Sea; for then this Bread, when necessity requires, may be infused in warm Water with a few Hops, and excited to the separation of its feces, and it will acquire the substance of Beer: But that which doth not pass into the Liquor, nor become Beer, may be heat in a Kettle, and some Butter put to it, which will very much comfort the languishing stomachs of Seamen, as well, or better than the eating of Bread softened in Beer. But in regard that bitter Potions are not agreeable to all Palates, it may also be made into Beer without Hops, by mixing the bread with good water only, and afterwards boiling it for the evaporating the more phlegmatick parts, which will have a pleasant taste. But this Bisket also, or twice baked Bread, may be ground small in a Mill, and put up close in Casks, and preserved on shipboard. Afterwards, when need shall require, you may temper it with warm water, and in an open Hoghead (which yet must have a bottom) suffer it to settle, and clear it self; so the flower ascendeth upwards, and the water attracteth the sweet liquor, and hence becometh excellent and wholsom Beer, which if it be drawn out at the bottom of the Hoghead runneth as clear, as if it had been made some Months; for there is now a separation made of the pure part of the Bread, from the impure or gross, and when that which is fine is drawn off, the gross part may also be drawn out of the Vessel, which being boiled with butter, affords a singular pleasantness to the taste; yea, also is of a greater salubrity, and better digestion in the stomach, than Pease, Beans, or French Barley boiled: So that here is nothing lost, Bread or Meal of this sort affording good Beer, and also a wholsom Food to eat. And thus on shipboard one may at any time of the year not only have good fresh Beer, but also thence may be made good Vinegar. And this may suffice to have briefly taught the manner of mitigating Hunger and Thirst by concentrated Corn.

I shall now treat of the Cure of Diseases, to which Seamen are liable, and which often bring death.

Now, if you regard the Nature of Man, you shall generally find, that he useth no measure or mediocrity in eating and drinking, but rather puts down so much till his belly will hold no more. Which Vice one man obtrudeth upon another, under the view of kindness

and good-will, from an old custom and enormous abuse, although in this one offends more than another. Therefore while the Appetite is more liberally indulged, than admitteth of a good digestion, the Liver allumeth a Chyle which is scarce half concocted: Whence also a gross blood is generated; and so in process of time the Viscera are filled and obstructed with crass and viscous humours; hence they cannot perform their office as they ought, but rather many and divers Diseases do arise, according as the heap of crudities encompass the Flesh covering the Joints, obstruct the Veins and Nerves, and deprave all the *medicums* of nourishment; therefore when the Evil cometh to that pass, and grows prevalent, the whole body is sensible of it, but chiefly in that place where it fixeth its seat: And hence necessarily one part suffereth by the hurt of another, till at length all the powers go to decay, and the whole body languisheth, and cannot help it self, and unless succoured by Art, dyeth.

For these causes Physick was invented, that those Diseases arising from intemperate eating and drinking, might be met in the way, the perverse Enemy or primordial Vice of the body be removed, the viscous and phlegmatick *Sabura* of the depraved humours dissolved and opened, and the oppressed Members expurged, that so the body may again recover its former healthful estate; the which is wont to be done by divers means, and in various manners, according as the Physician understandeth the Disease to be, so he also affords his help, *viz.* taking it away by Evacuations upwards or downwards, by Sweat or Urine, or by other means, as the nature of the Disease requireth. But by which waysoever the recrements of the malignity be dissipated and expelled, and the inward parts be freed from them, it is well, and the Physician hath performed his Office, also meriteth Thanks and a due Reward. Therefore whoever well understandeth the nature, rise, and birth of diseases, and also possesseth a good Medicine, or can obtain one, is fitly qualified for a Physician; but he who knoweth not the disease, nor is also furnished with fit and efficacious Medicines, nor knoweth how to obtain them, grievously erreth by trying Experiments so long, till the Evil more and more encreaseth, the Sick at length expires; the which is so well known that it needeth no proof; so that many who have contracted diseases from immoderate eating and drinking, are afraid to commit themselves to an unskillful Physician, but chuse rather to cure themselves by abstinence and fasting, which way is indeed safe, although it be tedious and full of delay.

Others again use vulgar and trifling Medicines, and yet recover their health, tho' late, thinking that this happened by the use of their Medicine, when nevertheless the length of time, and the sparingness of their meat and drink, during their illness, whence the superfluous pravity of humours hath gradually wasted, hath effected this; which also sometimes happens to those who take no Physick; but by how much the greater the pravity of the humours is, by so much the longer it will be before Nature will be able without help to overcome and expel them. The which, if it take 4, 5, or 6 weeks to accomplish, a Physician (by the benefit of good Medicines) might effect it in 2 or 3 days. So great is the difference between a Cure which Nature performeth in a long time, and that which is quickly done by Art.

But here it may be objected, that all diseases take not their beginning so much from an evil and superfluous humidity, as from manifold other causes, one being

being derived from this, another from another cause. To this I answer, that all those affects of the Body which exist in the skin, and do not proceed from external accidents, as wounds, bruises, falls, &c. whence the bruising of the body, and also Death, at length happens, do draw their original from the intemperance of eating and drinking, which admitteth occasion, and furnish matter to noxious humours, which hence occupy and infect divers Members; for one part affecteth another, till the whole body abounds, and is imbued with a multitude of viscous humours. When the Stomach is over-gorged, and its tone is spoiled, it contracteth cold crudities, and falls into a dangerous estate, How then should it rightly digest the Food? and, What good can it transmit to the Liver? And seeing the Liver receiveth nothing but what is evil and depraved, What can that procreate of good, and diffuse throughout the whole body? Therefore as I have said, one Member must suffer by another, till the error become common. Whilst a Tree or an Herb in the ground remains temperate, that it be neither too wet nor too dry, its root draweth from the earth virtue, and imparteth it to the trunk, and the trunk to the branches, leaves, flowers, and fruit, and is able to produce fruit conducive to health, for many years. But if the root be ill placed, the Salt being ill disposed, whatsoever the stock there finds, it associates to it self, and also communicateth the same, and no better to the branches: And if it stand too wet, it brings forth an insalubrious Fruit, which by reason of too much moisture, falleth off before it is ripe, in whose head fungous protuberances arising from putrefaction, spring up, and such Plants do not endure long.

Again, if the Root stand too dry, it cannot thence have Juice sufficient to nourish the Tree, and bring forth Fruit, but will by degrees wither away and die. So also it is with Men, and their Diseases; for according as their Bodies are treated, they are healthful and fruitful, or else diseased. Now seeing that I have proved Diseases from redundancy or humidity, or from dryness, it will be easy to provide preventive Remedies against them; or if any error or delay should happen in this, it may be amended in the curative part, by which the Evil may be abolished. These are required to be of that nature and property, that they attract the superfluous and pernicious humours from all the Viscera and principal Internal Members of the whole Body, into the Ventricle, conciliate a new concoction or digestion, separate the pure from the impure, adjoin the one to the Liver, and eject the other by Scige: And so the body is not only freed from depraved burthenfom humours, but also recovereth its strength, and is cured of all Infirmities. Which manner of Curing, at this day, the more the pity, is known but to few; seeing that it is not to be effected with common Herbs, but somewhat better is required, than what the Philosophy of old Women prescribe: Nevertheless there is a great efficacy in certain Simples; as may be seen in *Hellebore* or *Helleborus*, by whose benefit the Ancients prolonged their lives, by the daily use of a certain dose of it. Moreover, Tabaco where it cometh to maturity, effecteth things to be admired, being rightly prepared and administered; yea, even that which (being crude) is taken in Pipes, cooleth and refresheth the body, and also in some measure relieves against Hunger and Thirst; which common experience daily witnesseth. But whence this Virtue happens, Tabaco takes neither know nor care, but acquiesce, in that they either

receive pleasure or profit by it: Therefore, if Tabaco, or any other vulgar Plant can perform so many and so great things, being yet crude, without any preparation, What would not an Extract or concentrated Essence of all the Vegetables do, being rightly made? which nevertheless ought to be of that nature, that it may not only dispel every heap of malignant humours, but also strengthen the inward parts, and preserve from all things which may happen in the generating of a Disease.

Such a Medicine is that which I here present to all those who continually use the Seas, and besides the Scurvy, undergo many other Diseases; by which they may not only efficaciously protect themselves against the assaults of Diseases, and hinder their progress when already begun, but also under the present want of Meat and Drink, may make found an infirm body: But how, and from what Ingredients this Euphorist may be made and prepared, needs not to be manifested to every one. This is a great Gift of God, which ought to be honoured, and not prostituted to the Unworthy. Let it suffice at this time, that such a Medicament may be obtained at a small price; I will not suffer it to be buried with me, but will leave it to others, who may keep it, and sell it to those who desire it at a reasonable rate.

This is given in form of an Electuary, and may be taken for a Preservative, daily, or every second, third, or fourth day, as occasion requireth, in the quantity of half or a whole Pease, upon an empty stomach, fasting two hours after it, if need be, but if not, Food may be taken presently after it, although it is better to abstain some hours: But when a Disease hath already invaded a man, whether it be *Fever*, *Scurvy*, *Head-ach*, *Cutarrh*, or any other Disease infesting Seamen, let the Patient forthwith swallow down this Electuary the magnitude of an ordinary Pease (for it hath no unpleasant taste) and sweat if he can; if not, let him keep however a very moderate Dye't all the day, and in Summer time, as much as he can, avoid the intense heat, and in Winter, the extremity of Cold; the next day let him take the quantity of a Pease or two, and so let him encrease or diminish the dose, according to the state of the Disease. These things being well observed, all Sicknesses will give place.

If a man carry with him but half an ounce of this Medicine to Sea, in a long Voyage, he will possess a *Panacea*, both for the preventing and curing all Diseases incident to his body.

This is of very great use and profit especially for Masters of Ships, to whom I also highly recommend it as such, and not to them only, but also to all the Inhabitants of the Earth, to whom it promiseth no less success. If a Medicine can be invented, (besides that universal one of the Philosophers) accommodated to all diseases, truly this is one, and will perform all, or even more than I have attributed to my *Catholicon* in the *Second Part of my Pharmac. Spagy.* that is a Powder, but this, of which I now discourse, an Electuary prepared of certain good Ingredients and Sugar. I affirm again, That there is no disease, whether internal or external, for the curing of which this Medicine doth not suffice; for it doth not only resist the *Fever*, *Scurvy*, and *Pox*, but even the *Gout* and *Leprisy* it self, provided they be not too much fixed and radicated; yea, although they be very inveterate, and cannot be thoroughly rooted out by this Medicine, nevertheless it gives relief in them, and renders them more tolerable, and hinders the accession of the daily fits, and keeps it under. Certainly where this Medi-

ine can yield no help, Nature must be wholly ruined and tired out. What I have here written, is the Truth, which I am able to prove by experience; however it is free for every one to believe or not believe me, as he pleaseth: Christian Charity to my Neighbour hath compelled me, if it be well taken, it is well, if not, I have done my part, and discharged my Conscience. Nor will I insist any farther on the praise of this *Praxia*, I have said enough to those who believe, or can understand me.

And thus I have set before the whole World, that Medicament which can preserve from, and cure the most grievous Diseases accompanying Ships and Voyages, and also relieve in the extremity of Hunger.

This being done, there yet remains another Remedy whereby the Body may be relieved, and refreshed in extremity of Thirst, when drink is wanting; and this is done by Water concentrated, which is of so great virtue, that it giveth such a refrigeration to a thirsty Palate, that in the whole World there is not the like. Seeing therefore that in long Voyages Water is often wanting, and putreth and stinketh, it will be very necessary here to declare and shew, how Thirst may be refrained and rendered tolerable in time of necessity. Then also how common Water may be preferred from corruption; moreover, that one Tun may effect as much for the quenching of Thirst, as otherwise 2 or 3 Tuns of common Water can. Which is not only my saying, but the Truth it self; as I will here prove by manifest testimonies: And this is to be done as I have said, by Water concentrated and coagulated. But what that is, I will first shew, and then by what means it is to be prepared and used.

To explain the genuine Property of concentrated Water to many, may seem unnecessary, in regard that Seamen are not skilled in such discourses, nor careful about them; and that they rather belong to Philosophers, and the Contemplators of Nature, that they may render the knowledge of them familiar to themselves: But this Treatise without doubt will come into the hands of wise and experienced men, as well as into those who use the Seas, and therefore perhaps I shall not lose my labour, if I somewhat more exactly describe the nature of that water.

It is sufficiently evident to all those who have saluted but the Thresholds of Nature, that the Omnipotent God, in the first Creation of the World, hath separated the Elements from the rude *Chaos*, as also the Elements from one another, placing the Earth in the bottom or foundation of the Center, and over that the Water, over the Water the Air, and over the Air the Fire; so that every of them holdeth its own receptacle and seat, from whence, without the will of God, it cannot recede. Nevertheless, we find that one always participates of the other, and none is found without another, although one be predominant and visible; but the rest exist in it invisibly, and by the skill of an Artift, may visibly be deduced from it. So from the Earth we elicit Air, Water, and Fire; from the visible Water, natural Earth, Air, and Fire; again, from the Air, Earth, Water, and Fire; and from the Fire, Air, Water, and Earth. Hence the Elements are continually circulated from one species into another, which indeed we do not observe or perceive, and no Element can want an Element, but draweth its life and nutriment from another. The Fire cannot burn without Air; the Fire operateth upon the Water, and of it maketh Air; the Water resteth in the Earth, and moisteneth the same; the Fire impregneth the Air; the Air insinuateth the Seed into the Earth; the Earth

nourisheth and cherisheth the Seed unto perfection, and afterwards bringeth to light what it hath conceived, and carried in its belly.

These things are only hinted at by the way, and not without cause.

But to return to our concentrated water, that we may explain its nature, know, that water is the *principium* or beginning of all the Elements; which thing is sufficiently manifest, and may be seen daily, especially in the *Subterranean* Mines of Metals, whose inward bowels are so penetrated, that there is not only water, but we also see it to be quickly transfused into various forms of Mineral Bodies, the which without is familiar; and the more limpid or clear the water is, the brighter Stones and purer Minerals it generateth: Of which you may read more in that Treatise, [*The Second Part of the Mineral Work*] where I have described the generation of Minerals; also that Flints and Sand, in the Earth, Rivers, and Seas, receive their increase from water, is sufficiently manifest; for all sand was primitively water only, and hath passed out of water into hard sand or Stones, and into which it may again be changed. But this is not to be used as a Remedy against Thirst, because it is now too hard, and difficultly returneth to its first matter, *viz.* Water, except by the benefit of another subject, which is a *medium* between Sand, Flints, Crystal, and common water, *viz.* Salt, which hath an agreement with the nature both of common water and that of stones, and may be easily changed into either of them; as you shall hereafter hear. But this concentrated water, which I here propose for the vanquishing of Thirst, and refreshing of the body, is salt prepared and concentrated, either of the waters of Mountains, or of the Sea, which are of the same goodness: Of which afterwards is prepared by Art a water so excellent, that for refreshing of Thirst and refreshing a languid body, there is no Remedy in the world may be compared to it.

Here some one ignorant of natural things may object, and say, How can it be that Salt should repel Thirst, seeing that when it is eaten, it excitheth and encreaseth the same? To this I answer, That common salt, as it is first extracted or boiled, can in no wise restrain the Appetite of drinking, but rather provoke it, except its pravity be first corrected and depurated; for every salt seems to have laid aside its nature and property, so long as it contains earthy and gross faeces, which nevertheless may be removed from it by solution, filtration, and coagulation; whence also it is bitter, astringent, and hard; but this harshness and terrestrity being removed, the salt remaineth no longer hard, but is reduced into a soft and fluid Liquor, not sweet, but pleasantly acid, tasting like an Apple or the Stones of Grapes. And this purification must be made by the force of Fire, *viz.* when the salt in distilling is sublimed in earthen Vessels, by strong Flames; and then the purest and most noble part only ascendeth, and the more gross and earthy remaineth in the bottom, and is of no use; but the purer part is of great power and virtues, not only against Thirst, but is also very necessary for many other things, as shall hereafter be demonstrated. That otherwise in impure common salt a great Virtue is latent, let no man doubt, seeing that it may be daily observed: Wherefore that excellent Philosopher *Plato* writeth, *That in salt there is somewhat divine*; and according to the opinion of other great and wise men, GOD hath openly manifested Himself in Fire and Salt, and the ancient Philosophers were hence taught to prepare their

their *Universal Medicine*; which Art of preparing they have called *Alembic*, or *The melting of Salt*; but I speak not this by experience, in regard that I never yet durst attempt so great a Secret, being contented with smaller things; but this I know, and have divers times done, *viz.* that by a certain Artifice, I have precipitated from common Salt some corporeal Gold, although without profit, and only to see the possibility, which without those precipitations remaineth spiritual, and at length by them obtaineth a corporeal substance.

Indeed the greatest Mystery of the whole World consisteth in Fire and Salt, and with those two (after God) nothing may be compared; for the Flame raiseth Light out of Darkness, which otherwise none but God can do. It is also fit to restore life to the dead, no otherwise than the warm Sun or Oven reviveth Worms, Frogs, Serpents, Flies, and other Insects, which have been killed by the Cold; of which I have made mention in the second part of my *Pharmacop. Spagy.* as also in *Miraculum Mundi*, and its *Explication*. Many men use Fire, yet know not what they have or use: So also it happeneth with salt, all men use it out of custom, but observe not what they taste. Salt is a thing of great moment; by it we give strength to resist Corruption, both to the living and the dead.

And so it is, that if men had not salt, or at the least those Plants and Fruits, in which it dwells, they would putrefie while yet living. Which would also happen to Cattel, if they did not eat Grass, which contains in it self its own salt, and sufficeth them in feeding; nevertheless if something better were given them with it, it would be very profitable for them; for if to horned Beasts, as also Hogs, some fatness were given with their meat and drink, they would thereby acquire much strength and fatness.

Seeing therefore that Salt, whilst it is yet gross and rude, and defiled with many impurities, performeth such things in living Creatures, and preserveth Flesh and Fish, as also all Herbs and Grass, long from Corruption; What could not such a salt do, which by the help of Art hath received a greater purity than Nature hath bestowed upon it? For the Fire containeth a power of correcting and purifying salt, and converting it into a finer and better substance. The common salts which we daily use, do indeed give a relish to all Edibles, and preserve them from putrefaction; yet nevertheless they dry, astringe, and bind the belly; also excite Thirst; but salt being rectified and depurated, communicateth a sweet and grateful taste, also more powerfully resisteth Corruption than the other, neither doth it bind the belly, but keepeth it soluble, expelleth Urine; nor doth it cause Thirst, but rather taketh it away both from the sick and sound: So great a difference is there between the common and corrected and depurated salt, which Rusticks little understand. The nature and property of common salt is known to every one, as far as concerns the Kitchen, but the rectified is known to few: And the Spirit of Salt, which is in use in Apothecaries shops, and which they also sell, being for the most part not rightly prepared, effecteth little, and therefore not frequently used: But if it were made and rectified as it should be, it would not only have a pleasanter taste, but also a better operation. So many things bear Names which are not agreeable to the thing, and therefore cannot perform what is expected from them.

The Ancients have ascribed great Virtues to Spirit of Salt in Medicine, which it indeed hath, if after its distillation it be well rectified and dephlegmed; but if

it be admistrd so crude as it ascends the first time, it may perhaps do more harm than good, inasmuch as a great deal of terrestrity comes over with it, which in the rectifying remaineth in the bottom of the Glass, as an insipid, bitter, or astringent salt. And although this be well enough known to some, nevertheless they abhor to rectifie their spirit, because the spirit in rectification loseth a great part of its weight, by separating its superfluities.

I taught, many years since, how to prepare the spirit of salt in quantity, whose description is also exactly set down in the *first and second part of my Furnaces*. It also demonstrateth its utility in Metallicks; as manifestly appears in the *first part of my Mineral Work*, where the manner of extracting Gold from Stones, by its help, is taught. Altho' the spirit for that work should be prepared after another manner, than that which is to be used at Sea, or on shore, for the curing Diseases or repelling of Thirst; wherefore I'll first teach the way of making this, and then also shew its Use.

As for the manner of anatomising Salt by Fire and Art, and transfusing it into a pure and sweet spirit, it is various, for one useth this, another another way, as I also have taught divers waies, in the *first and second part of my Furnaces*; but here I will appoint another, which is the best and most commodious for the uses treated of in this Book, and is thus to be performed.

Get some strong Retorts made of good Earth (but Glass is better) fill them with the following mixture of Salt and Earth, then according to Art, delil thence a spirit gratefully acid, which duly rectifie, and it will be prepared for Use. The salt is to be thus prepared for distillation: Fill a great Crucible with Sea-salt; put Cover over an earthen Cover, and by degrees put Fire about it of flaming Coals, encreasing it, until the salt be all over red-hot; this being done, presently remove it from the fire, and let it cool; by this means, if any greasie fordes, or other combustible impurities, adhere to the salt, they will be consumed and vanish. Dissolve the salt in common water, filter or strain it through a fine close Linnen Cloth, that the faeces may be separated; the clear Liquor evaporate in an earthen glazed Vessel, till the Cuticula appear, then make little balls of clay and sand, about the bigness of Walnuts or Pigeons Eggs; dry them, and heat them red-hot in an earthen Vessel, and so the fat spirit of the Earth will be burnt away; then imbibe those balls with your strong salt water, by letting them remain in it for some hours, that they may drink in as much of it as they can, then take them out, and dry them: With these fill your Retorts, and administer Fire by degrees, and at length urge with the strongest flames, so long, till they emit no more fume, for then all the spirit is come forth: The Receiver must be of Glass, and very large, in whose bottom must also be a little water, to attract and condense the spirit. The Distillation being finished, the spirit is to be rectified by it self in a low Cucurbit in sand, and first the water or phlegm will come over, (which you may keep for another distillation) then the pure and sweet spirit will rise limpid and clear, and an unpleasant salt will remain in the bottom, which is to be cast away, and the spirit to be kept for the uses to be shewed hereafter.

But if you desire to have the spirit yet more pure, and efficacious, you may rectifie it again upon calcined or powdered Flints, which will retain in the bottom whatsoever is yet gross or impure, and the spirit will be rendered very pure and subtle; for the Flint at the

first was Water and Salt, and hence both contain in themselves so freight a communion. This may be seen among the Glass-makers, who reduce Sand or Flints into clearness by melting, that thence they may make pure Glass; for Salt in the Fire dissolveth Sand, Flint, Crystal, and together with them receiveth the Essence of Glass; yea, and these very species and matters, by the help of an *Alkali* Salt, are resolved into a diaphanous Glass, which being put into common Water, melt like Salt; of which I have discoursed in the *Third Part of my Pharmacop.* When we destil the aforesaid rectified Spirit of Salt again from powdered Flints, from the innate love which it hath to the Flints, it carrieth some part of them upwards with it self, and is made better for use in all Diseases, especially in the *Dropsie, Stone, and Gout* it is an excellent Medicine. The Flints remaining in the bottom, yield a water which dissolveth the hardest Crystals, and is acid like the spirit of Salt, and nothing else but part of it coagulated with them, and may be administered in all cases as the Spirit of Salt.

Let no man wonder that I ascribe more to this Spirit rectified with Flints, than to any other common spirit of salt; for few know what Virtues are latent in flints or sand. All Birds and four-footed Animals use sand. Many men administer the powder of Flints and Crystal, for the corroborating of weak stomachs. Hens devour Sand and small Pebbles, that they may thence have matter for their Eggshells, and being debarred of it, lay Eggs without shells. Wherefore I affirm, That this spirit of Salt, abstracted from flints, to be better in many Diseases than the common spirit, and especially the Crystals, or spirit of salt coagulated, of which we have above made mention.

Let this suffice concerning the Preparation of spirit of salt. Now we will also teach, how it is to be administered either at Sea or on Shore, for the repelling of Thirst, and the Cure of Diseases: To what other purposes the spirit of salt serves, besides Medicine, I have shewed elsewhere; here my intention is only to signify of what great use and profit it may be in Voyages to Sea, which was the only occasion of writing this Treatise.

Of the Use of Spirit of Salt in Ships, against Thirst, and also the Scurvy.

IN the first place, this spirit is profitable to the body, when a small quantity of it is put into the Hogheads of Water, whereof Seamen and Soldiers drink, to which it gives a grateful acidity, like that of Wine, and is far more effectual in quenching of Thirst, and in less quantity than other Water, and besides preserves the Water from corruption and stinking, which otherwise in long Voyages it is wont to suffer, contracting a muddiness, blackness, and breeding Worms, which generate the *Scurvy*; for the Water containing the spirit of salt, cannot corrupt; which spirit also preserveth other things, both living and dead, from putrefaction. And because the water with the acid spirit of salt extinguisheth Thirst more than any other, it necessarily follows, that so great a quantity of water need not be carried for a Voyage, as otherwise is usual. Moreover, seeing that the spirit of salt resisteth all putrefaction, it suffereth not the *Scurvy* to take root, it refresheth and exhilarateth a man with great vigour, corroborateth the stomach, and all the mem-

bers of the body, it consumeth pituitous matter in the Reins and Bladder, expelleth Urine and Stone, keepeth the Belly soluble, promoteth digestion; it fufferech no Disease to grow from corruption of the Blood, to which otherwise Sea-faring men are subject: Moreover, it exercech its salutiferous Virtues, if a little of it be mingled with Wine and Beer, in Ships, which will long preserve it in its goodness and sincerity, causing it the better to repress Thirst, and therefore to go the farther in use. Also Beef, Mutton, and Veal may by it be preserved a long time, if they be put into stone pots, and powdered or conduced with some salt, dissolved in the spirit of salt. Nevertheless it behoveth that the Fleth be without any Bones, and that all the Legs, Thins, or Thinks be cut off. Moreover, a very small quantity of the spirit being added to the water in which Fish is to be boiled, maketh the Fish eat firm and close, and of a much foldier relish than when sprinkled with Vinegar. So also Raisins being put into water impregnated with spirit of salt, will grow soft, and swell, and will recover their strength and sweetness, as if they were fresh plucked from the Vine, which will afford a great refreshment to those who frequent the Seas.

In a word, this spirit may commodiously be used, not only in Water, Wine, or Beer, but also in all sorts of Food in Ships; for it giveth a very pleasant taste to all meat and drink, and correcteth them so, that they become more wholesome. It hath also another very profitable use, viz. If in hot weather but one drop, or so small a part of the coagulated spirit, as the magnitude of an Hempseed, be mixed with sugar and held upon the Tongue; for it cooleth the mouth, and allayeth Thirst, that there will be no need of bad Water or Beer, by which the body is more violated than corroborated, through drinking often and much of them. Nor is this the least of its virtues, that when in a long Voyage there is a want of water, a little more of the spirit of salt may be put into it than will serve for a grateful acidity; for so it will quench Thirst for a longer time, and in a less quantity than otherwise a greater quantity of water can do. Yea, although the Ship should be cast away, and the men forced to betake themselves to their Boat, or broken pieces of the Ship, as it often happens, if they have but an ounce of the spirit of salt in a Glass, or half so much of it coagulated, in defect of Drink, they may sustain their lives and health therewith so long, till it please God to afford them a means of getting to shore; nor will they be forced to drink their own Urine, or Sea-water, which is pernicious.

These and the like Virtues the spirit of salt sheweth in Ships, which for brevity sake, are not all declared.

I have also meditated how the *Sea-water* may be made sweet and drinkable by precipitation, which would be very desirable in want of water: And so far I have attained, that I can precipitate a good quantity of the salt from the water, which also becomes much sweeter, but yet not so fully, but some saltness remains in it. Although in case of necessity this water may be used in Ships for the boiling of Pease and Beans, as also for the fermenting of concentrated Corn. What I now know concerning this precipitation, I will make manifest for the good of my Neighbour, and shew a good beginning how *Sea-water* may be made fit to drink.

There is a certain kind of Mineral called *Mary's Ice*; it is not the *Muscovian* Glass, as perhaps some may think, but another thing; when it is heat red-hot

in the fire, and so cast into *Sea-water*, it is presently reduced to a tender and white powder; which being done, the Water will be agitated and moved hither and thither; then the Powder attracteth to it self part of the Salt from the Water, and setteth to the bottom of the Vessel, and the Water groweth clear, which may be poured out, and if this labour be once or twice repeated, the Water, by this precipitation, will indeed be made sweeter, but not altogether potable. Also the salt or solution of *Satur* dissolveth much of the salt from *Sea-water*, yet by that it is not rendered drinkable. The best way which I now know, is this which follows, but it is somewhat costly: Nevertheless when necessity urgeth, sweet and good water profiteth a man more than a Bond of an hundred pieces of Gold. Hence this Art deserveth to be honoured, although it be costly; for a man ready to die with Thirst would give all he hath for a draught of Water to save his Life: Wherefore somewhat of this precipitation may be committed to Ships, for their preservation, which may be used in great necessity, but if no such be, it may be brought home again, and kept for another Voyage, seeing that it will in no wise decay, but be as good after an hundred years, as the first day of its preparation.

But what this is, there is no need openly to divulge, but he who desreth it, may come to me and have it: But for the information of those who are skillful in *Chymistry*, I will intimate this; That the precipitation of Salt from Water, is necessarily to be performed by a singular sand, which doth not only drive salt downwards, but also all Phlegm, Sordes, and Impurities; so that although the water should be like to a Fen or Dunghill in litch and stink, by the benefit of this precipitation, in a few hours, it should become like clear Fountain water, because the evil odour and taste would also be precipitated.

The same may be done in all Waters, how nasty and muddy soever, and not only in Waters, but also in all potable Liquors, as Wine and Beer, although the Wine were red, seeing that the precipitation catcheth to the bottom all muddiness, colour, and stink. And hence not only those Liquors, which are changed red by corruption, or other accident, but also Crystals, which are red by nature, may be reduced to a peripetuous clarity; which is a thing very profitable for Vintners; for otherwise the *Sea-waters* become sweet when they are carried far through common sand, which imbibeth their salt; for those two have a mutual communion and communication, seeing that both are generated of Water; hence also, by the fire, they are resolved into a dry Water, or pellucid Glass. Whence any man knowing in the nature of things, may apprehend, that this precipitation of *Sea-water* is built upon a foundation agreeable to Nature.

My *Alexipharmac*, or Mineral-Electuary, before mentioned, as also the Spirit and Crystals of Salt may be administered, as well at Land as on Sea, against the *Scurvy, Fevers*, and other Diseases.

And although in the *Second Part of my Pharmacop.* I have already described a certain Mineral Remedy, under the Title of a *Panacea*, and commended it against all Diseases, by which admirable Cures are every where done, yet I prefer my Mineral Electuary before that, because it is more accommodated to use, seeing that when need requires, it may be taken out of a Box with a Knife only; neither is there need of any Vehicle, as Wine, Beer, or others, which are necessary to be used with the *Panacea*; neither is there need of weighing it, but may be proportioned by the Eye, according to the age and strength of the sick. Those who are of full age and strength, may take as much of the Electuary upon a fasting stomach as will equal the magnitude of a Pease, and fall some hours after it, if time and opportunity permit; also let the Patient avoid the cold Air, and the heat of the Sun in hot seasons. It is to be taken twice, four times, or oftner, in a week, according to the necessity of the sick, to which it must also be proportioned by encreasing or diminishing the Dose; for if one grain should not work, the Patient may take two, ascending to 3 or 4, if not be. When a small Dose is administered, it works insensibly; if a little more, then it worketh by stool, and sometimes by vomit, when it findeth diseasie matter in the stomach; if it findeth depraved salt humours, it catcheth them out by sweat, spitting, or urine, and thoroughly purgeth the body from every evil. In brief, I say, it greatly purifeth the Blood, openeth all obstructions of the internal principal members, as the *Liver, Spleen, and Lungs*, beyond all *Phlegmagogues*: It hindereth the growth of all *Aspersiones* both within and without the body; it consumeth *Fluxes* and *Catarths*, which fall upon the Eyes, Ears, and Teeth; it exterminateth the venereal *Pox* in a short time; it also cureth the *Dropsie, Leprosie, Gout, and Falling-sickness*, both in old and young; expelleth the *Stone* both of the *Kidneys* and *Bladder*; cureth all sorts of *Fevers*; and lastly, it healeth all inward and outward *Wounds* and *Ulcers*, being taken inwardly, and a due Diet observed.

This is a safe and approved Medicine in the cure of all curable diseases, nor doth it fail to help in inveterate affects, viz. when a disease hath been long growing, and is now firmly rooted and fixed, that it cannot be totally expelled, as the *Gout* and *Stone*, yet then this Medicine mitigateth the pain, and maketh the Fits slower and more tolerable, and suffereth not the *Disease* to encrease, but to be more and more abated and diminished. It cures all *Scabs* and *Ringworms*, or *Tetter*, proceeding from an impure Blood and Liver, only by taking it inwardly, without any outward unctious. What shall I say more? This Medicine cannot be sufficiently praised, seeing that it operateth universally against all the diseases both of Men and Beasts: But I must forbear, for if I should shew all its Virtues, this Treatise would swell to too great a bulk.

In *Maritime* Towns, and other places where the *Scurvy* is regnant, a better Medicine than this cannot be found, for it removeth all pravity of Humours, from which such diseases proceed; it preserveth from the *Plague*, and other Contagions, and happily cureth their Infections; it strengtheneth the Memory, Heart, and Brain; preserveth from the *Palsie* and its Concomitants: In time it restoreth those who have their Members contracted, and their Nerves repressed and immovable, after the being anointed with Mercury, for the cure of the *Pox*. He that will take it every week or once in 3 or 4 weeks as a preservative, shall not have the *Tooth-ach*, nor shall his Ears be troubled with ringing or other noises, nor shall his Eyes be troubled with sharp Rheums, but by the benefit of this, the conventional inveterate Corroders of the Body, *Catarth, Fistula, Cancer*, and other almost incurable symptoms, are thoroughly cured.

Hence both Rich and Poor, and those especially who go long Voyages to Sea, and want Physicians, ought to esteem this *Alexipharmac*, and provide themselves with it against a time of necessity. If any man carries with him half an ounce of it, it will be sufficient for preservation and curation for more than a year, in many diseases. If a Ship going to the *East* or *West* Ind

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dies, carry with them half a pound of it, they may save the Lives of many men; one of which is of ten times more value than the price of the Medicine, by help of which the lives and health of many Hundreds of Men may be preserved, and being sick, may be reduced to their former health.

Now it is farther necessary to describe the Virtues which the Spirit of Salt sheweth on Shore; for that which is profitable to the sick on shipboard, is not hurtful for those who dwell at Land: For this spirit may be used in all Houses in their usual drink, as Beer or Wine, especially in these moist Regions, where the Scurvy commonly reigneth; so that there is scarcely an House to be found, in which there is not one at the least infected with this Disease; for the drink is hereby made clear, so that it well dilateth the Urinary passages, moreover hindereth the growing of the Stone in the Kidneys and Bladder; it also gives a pleasant taste to the Wine, removeth its superfluous Tartar and precipitath it to the bottom, so that *Spanish* and *French* Wine acquire a clearness like to *Rhenish* wine. In Summer time, after Liquors have once wrought, it suffereth them not to fret, grow mucous, or work again, but keepeth them from many Accidents. *French* Wines, as sold in many places, have neither odour nor taste, but good Wine is endowed both with a Vinous relish, and a grateful odour; and when these are wanting, the name agrees not with the thing. But the Spirit of Salt, with the Essence of Wine, conciliates to *French* wine the smell, taste, and colour of *Rhenish* wine. Hence also being so meliorated, it will, like *Rhenish*, keep many years, which otherwise will hardly hold good two years. Moreover, by the spirit of salt that quality may be taken away from Honey, which renders its taste somewhat ungrateful, and its hidden impurities may be precipitated, so that an excellent wholom drink may be made of it. Which is a famous Art to be used in those places where there is no wine; for when Honey is well deperated, and the unpleasant taste taken from it, it becomes as a comforting Balsam to Man; as that old Souldier had experienced, whom *Alexander* asked what he had used to prolong his Life to so great an Age, he answered, That inwardly he had used Honey, and outwardly Oil. And it is evident to many, that there is a great virtue in Honey, but by reason of the unpleasant taste, it is loathed; which yet is removed by the Spirit of salt, so that a drink prepared of such pure Honey, is as wholom as the best wine: which hath also this benefit, that every Housekeeper may have this drink at his Table, at any time of the year. This honied Nectar also holdeth good many years, after the manner of the best *Rhenish* wine, and is made for a small charge, and will be a great comfort to those who are not able to go to the price of wine. Moreover, every one may make his own drink as strong and as sweet as he pleaseth; which is the principal head of the Art, to take away the ungrateful taste from the Honey, which being removed by the spirit of salt, the drink will become clear, to which you may add a little *French* or *Rhenish* wine for taste sake. You may thence also make good Beer, which will hold its goodness 10 or 20 years, or more, viz. if instead of common water you take the water of Hops, to dissolve the purified Honey, to which (if you please) you may give divers tastes, by putting into it divers Herbs, as is wont to be done in wine and beer. But this you are especially to regard, That for this business you do not use unrectified spirit of salt, for such would spoil the taste, and corrupt the drink, but always take that which is well rectify'd, which I have

sufficiently taught the manner of doing of, both in this Treatise, and divers other places of my Writings.

NB. There is no need to put the spirit into a Vessel of Wine or Beer, but it sufficeth to keep it in a small glass, and as often as you have occasion to put some drops of it into a Bottle of Wine or Beer, and so to drink of it. Every one therefore may make his drink as he will, by putting in more or less of the spirit, according to his Palate; which doth not only serve to make the wine and beer clear and diuretick, but may also be used in Fountain-water, in hot weather, for the allaying of wine: For if some drops of it be put into a bottle of water, it giveth it a grateful acidity, not much unlike to the natural Mineral acid waters, and in hot weather allayeth the over-great heat of the Blood, and quencth Thirst, so that there is no need of burdening the stomach with much wine or beer. Also all those drinks, as wine, beer, and water, which are mingled with the well-rectified spirit of salt, are far wholom than other ordinary drinks. If a little pure Steel be dissolved in spirit of salt, and then put to fair water, it will have almost the same taste with the *Spain*-water, and if some quantity of it be drank, it looseth the belly, and evacuateth black Excrements, whence a man grows lively and vigorous, as if he had drank of the *Spain*-waters.

And this benefit may accrue by it to all Travellers, who carrying with them a little spirit of salt in a glass, may at all times, and in all places, correct and amend their beer or wine in their Tuns, and give it a better relish: But because this spirit is more liable to be lost in a liquid form by any accident befalling the glass, therefore being coagulated into a dry form, it may be more commodiously carried about in a Paper or Box, of which the magnitude of a small Pease drank in one cup of water, quencth Thirst better than a great quantity of water alone. This spirit or salt will be serviceable to men of all sorts, but to none more than to Seamen or Souldiers, in war-like expeditions, of which sometimes more die through want of water, than by the sword, who also for the most part contract their Diseases from the filths in Ships, which might easily be prevented. What will it profit a Captain of a Man of War, or the Commander of a Merchant-ship, to have many men for his defence and service, if they are disabled by a Disease? Were it not then better to use all diligence to preserve their health, and to restore it when lost? Which may be done with small Labour and Cost. A General brings an Army some time into the Field, of 10, 20, or 30 Thousand Men, and seeing that those observe no due order in eating and drinking, and being destitute of Medicines, if the Plague, Fever, or *Bloody-Flux* comes among them, they drop off one after another like Flies in Winter; when notwithstanding they might be succoured and helped in those Diseases by my Electuary, [This Electuary I think to be the Panacea Antimonij made up with Sugar.] Salt of Salt, or Spirit of Salt, inspissated or thickened with Sugar. The spirit of salt hath always been highly esteemed, both by ancient & modern Physicians, for its great virtues which it sheweth both inwardly & outwardly; besides which, it is of great use in other Arts, as I have shewed in the first and second Part of my *Furnaces*. And that the Reader may see that I am not singular in what I have ascribed to the Spirit of salt, I will here set down the Experience of that no less learned than famous Physician *Comradus Kurrath*, of the spirit of salt, as he hath expressed it in his *Medulla Destillatoria*, printed at *Hamburg*, Anno 1638. In these words, Part 1. pag. 59.

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The Great and Effectual Operations which are attributed to the Spirit or Oil of SALT.

THE Spirit or Oil of Salt is not of so acrimonious a taste, as Salt commonly is: Nor hath it so great an acidity as the Spirit of Vitriol, but it tasteth almost like the juice of wild Apples, with somewhat of sweetness intermixt. It dissolveth, dissolveth, consumeth, and dryeth, yet it doth not heat too much, but hath a temperate nature, mitigating and comforting the natural heat, which it also encreaseth, and dispelleth all things contrary to Nature, mitigating the heat of sound humours, whose vicious Saburra of humidities it consumeth, taketh away Catarrhs which fall from the Head, and preserveth from all Diseases which arise from a noxious Pity, Mucor, and Fluxes. Yet, those who use Labour and Study, Mucor, and Fluxes, those who use Labour and Study, shall perceive their Strength to be restored by it, and as it were renewed.

Experience, the Mistress of things, witnesseth, That it is a present Remedy against the Falling-ticknels, being administered in good Aqua-vita: Against the Apoplexy, Palsie, or loss of Speech; as also the trembling and beating of the Heart, and all dejections of Mind; as also in the time of the Plague, or in any infectious Air, it may be administered with profit, by mixing half an ounce of the Spirit or Oil of Salt with two ounces of the Juice of Violets, and as much of the Electuary of Juniper-berries, in a Stone or Glass Mortar, and the Patient taking the quantity of a Filberd in the morning upon an empty stomach.

This Compound-Medicine being given to Women with Child, facilitateth the Birth, and is highly profitable against various symptoms of Women in Child-bed, without any danger. If any desire to preserve their native heat, let them often use this Alexipharmack.

Whoever is burdened with superfluous moisture, let him take this Spirit or Oil of Salt daily, in Wine or some other Vehicle.

In Colic's, and continual Fluxes, which stop up the Breasts, it conduceth much, and taketh away inveterate Coughs and grievous Asthma's, which are stirred up by those Fluxes. It dissolveth, consumeth, and dissipateth depraved humours, collected and indurated in the stomach; and although of itself it communicateth little nourishment, yet it excites the Stomach to a good Appetite, and disposeth the Meat to a good digestion and passage through the body.

It helpeth in the Tartarous and indurated Obstructions of the Liver and Spleen, which it openeth and relievereth, and hence removeth and taketh away the Jaundice, Dropsie, Hypochondriack Melancholy, and pains and affects of the Ribs and Viscera, and also whatsoever ariseth from Wind and Flatulency, and other symptoms proceeding from the said causes, it especially abjecteth the Anasarca, or Water under the skin, and thoroughly removeth watery Tumours in the Genital Members or Legs, which for the most part happen to those who are Hydropical, Phthisical, or labour under a Distemper of the Liver. It also taketh away the great Thirst in those, which otherwise in this kind of diseases doth not lightly assist, so that the Patient shall have no desire of drinking, but may remain some daies without. The same is also a Remedy against all putrid Fevers.

In tormenting Pains of the Belly, and Cholick, which are excited by the viscosity of humours, or intemperature of flatulency, or force of cold, and a dense and tough Phlegm driven into the Intestines; this spirit resolvethe and consumeth, and so openeth the stop passages of the Bowels, and looseth the Belly, that it ceaseth the Liack pains, whether it be taken at the mouth, or administered Clysterwise. In

the Lientery, Dysentery, or Hemorrhoid, it is to be given in Clysters; in like manner in Nephritick Diseases, and the dolorous Stone in the Bladder, which it dissolveth and exterminateth.

In Ruptures, as the Hernia and Enterocoele, let some drops be given daily in good Wine; let the Tumour of the Scrotum be also often anointed with this Spirit or Oil, and cherished by a fit Truss, or some other bandage, and in a few daies the sick will recover his former health.

It killeth all Worms in the Body, casteth them out, and prohibits their breeding again.

It is a most effectual preservative against the contagion of the Plague; and also is very conducing to those who are already infected. It also wonderfully prescribeth such as have eaten Poisonous Mushrooms or Opium, as also those who are hurt by Serpents, Vipers, Spiders, and the like venomous Insects, it is accommodated both to inward and outward use, because it consumeth virulent humidities. For the stinging of Wasps and Hornets, it is to be applied topically.

For fat Women, and those who are troubled with impurities of the Matrix, from a superfluous phlegmatick humour, it is very profitable; for by the benefit of it, every redundancy and incommodity of Phlegm is purified, consumed, and dried up, so that the seed may more easily rest in the Womb, and fertility be greatly promoted.

In prouderant Excessencies of the Eyes, Films, Cataracts, Blisters, Pustles, or Spots, Dimnels, or Darkness of sight, it is to be used in a good Collyry, or other commodious Vehicle. In Blows, Bruises, or Falls, when the Blood is congealed, (which we call black and blue) in the Eyes or Face, let a bit of a Sponge or Lint be wetted with the Spirit or Oil of Salt, and applied to the place affected; or else dissolve in the same a little red Myrrh, and with the Dissolution mix a little Honey, and anoint with it. It driveth away noise and pain of the Ears, also when the Ears send forth an ulcerous and purulent matter, the same Medicine may be administered with a happy success. And in these Symptoms it is to be mixed with Wine-Vinagar, and dropped into the Ears, and rubbed upon the diseased parts.

In the Thrulls, and other sore mouths of sucking Children, also in the glandular or kernelly Swellings of the Neck, foulness of the Tongue, swelled and rotten Gums, Scurvy in the Mouth, Tooth-ach, superfluous humours and filths adhering to the Teeth and Gums, this Spirit or Oil of Salt is an excellent Remedy; as also in preserving from those Evils, it is to be conjoined with clarified Honey, and the Mouth, or parts affected in it, to be anointed therewith. Against the evil Affects and Ulcers of Women's Breasts, some linen rags are to be humcted with the Spirit or Oil of Salt, and they will be quickly healed. The most Itch, Tetters, Ringworms, and other contagious Affects of the Skin, are happily cured by both the inward and outward use of this Spirit. Ulcers and fungous Tumours in the Venereal Disease, or others, if we would bring them to a suppuration, the Oil of Salt will effect it, being applied either alone, or mixed with other convenient Remedies. For the healing of venomous Ulcers, which pierce the Bone it self, as also all virulent Apostemes, the Spirit or Oil of Salt is to be mixed with White-wine, and Barley-Flour, into the consistency of a Plaster, which is to be applied to the Sore.

Also in cancerous, eating, and spreading Ulcers, it is very profitable, being mixed with the Juice of Rue, and applied.

That I may summarily express its use both inwardly and outwardly, it resisteth all fluid and corroding Vices, and layeth the foundation of their Cure. In Inward, shortned, or contracted members and joints, it assisteth

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present help, being used alone, or joined with fit Fomentations or Elixirs.

In the taking away of Warts, this Spirit is to be mixed with the Juice of Marigolds, and applied to them: It also taketh away Corns, if after they are listened with warm water, they be well cut and anointed with this Oil. In the Erysipelas, St. Anthony's Fire, this being mixed with Elder-Vinegar, and applied, is of great virtue.

The Hands or Feet being corrupted or chapt by Cold, are recovered by the benefit of this Medicine. This Spirit or Oil greatly conduceth to help the weariness and weakness of the Feet and other Members, restoring to them their strength and vigour, if they be well bathed therewith before the fire.

Moreover, in the dolorous Gout it is a famous Remedy, and a profitable Anodyne for allaying the pain, if besides its internal use it be also applied topically: For to this our Medicine are to be joined Oil of Turpentine, Oil of Wax, Oil of Camomile, or also Oil of Cowslips, with which the parts affected are to be well anointed. But where the members are contracted by Fluxions and Catarrhs, fit Fomentations are also to be used, and besides our Oil or Spirit, the dulcified Oil of Vitriol, and pure Oil of Turpentine, are to be mixed together, and the parts to be therewith anointed before the fire. And hence the Nerves and Joints are so comforted, that they will not so easily admit such Fluxions again. Also if there be Tophes or Nodes in the Joints, they will be dissolved beyond relief; being duly anointed with this Oil, mixed with the dulcified Oil of Vitriol.

It is also used with great profit both inwardly and outwardly, against the Cramp and Convulsion of the Nerves by Cold.

In external Wounds and Symptoms there often happens a Putrefaction, and also proud Flesh sometimes starteth up, and causeth great pain. These Prouberances being anointed with this Oil or Spirit, are presently dissolved and consumed, and also prevented from future corruption.

In brief, this is a most excellent Medicine, overcoming many Diseases. Moreover, the Reader is to know, that this Spirit or Oil of Salt, (besides those Virtues which I have described) if it be diligently prepared, and rightly prescribed, may be used for the preparing of many excellent and precious things in the Chymical Art; for it dissolveth Gold, Gems, and other Stones, Pearls, Corals, &c. so that they are reduced into excellent Medicines, in a liquid or potable form, highly useful for Mankind. But how these Processes are to be instituted, I shall here pretermitt. But be that hath drawn a good foundation of working from that information which my Medulla Destillatoria hath faithfully propounded, let him weigh the matter with an accurate mind, and put his hand to the Work, there is nothing in it so tedious, but he will easily conceive; moreover, let him associate himself with honest, sincere, and skilful Artists, and take their counsel, then he will find out many Secrets of Nature, and singular Arcana's, and will see that his care and diligence hath not been in vain: Then let him use that Experience to the Glory of God, and the help of his needy Neighbour.

The Virtues or most efficacious Operations of the Spirit or Oil of Salt, in which Gold is rightly dissolved, according to Art; or, when it shall be made an Aurum Potabile.

Philosophers and Physicians, endowed with the great Exercise and Knowledge of Things, have attributed to the Spirit or Oil of Salt, in which Gold is rightly dissolved, or the Aurum Potabile made with it, very great operations

in the body of Man, inasmuch as in all Diseases and Infirmities of what nature soever, it giveth present help, and in all dejections of the vital spirit, although they tend to the fatal period, it giveth such relief, that life and vigour may be yet somewhat further protracted, if two, three, or four drops be administered as occasion shall serve in a good Aqua vitæ or Cordial Water. In like manner, if three drops be administered once a week in generous Wine, or Aqua vitæ, or other fit Vehicle, it renovateth a man, makes him youthful, changeth gray Hairs, produceth new Nails, and Skin, preserveth from various and diverse symptoms of Diseases, and preserveth the body in such a state, even to the prefixed hour of the Divine appointment.

These are the very words of that famous Philosopher and Chymical Physician Conradus Kunrath, in his Medulla Destillatoria; as the Reader may there see.

Now any may easily conjecture, that although this learned man had found out many things, yet that he knew not all, but what was known to him, that he divulged. But that as yet more might be done by that Spirit or Oil of Salt, than what he had set down, easily appeareth from that which he sheweth at the end, concerning the Oil or Liquor of Gold, prepared by the Spirit of Salt, which words are Truth it self, and much more may be done by the benefit of that solution. He hath written what Experience hath taught him, the rest he hath left to the study and searches of others.

Seeing therefore that I also (not to speak boastingly) have often handled Furnaces and Coals, and among others, have found this Liquor of Gold or Aurum Potabile, made with Oil of Salt, to be of great virtue, and knowing its great use, power, and virtue by experience, I will describe it in an open stile, lest to noble a Medicine should be buried. Such a Liquor of Gold as is here mentioned, is compounded of the purest Sol, and the most highly rectified and again concentrated Spirit of Salt: The Sol is to be first melted, and thoroughly purged with Antimony, then to be dissolved in Aqua Regia, and precipitated with ℞; to be educated and brought into a subtile Calx, which must be heat red-hot (to free it from the ℞) and then dissolved in strong and well-prepared Oil of Salt; being dissolved, abstract part of the spirit of salt from it, and a very yellow Liquor of Gold will remain at the bottom, which yet is not, fit for use alone, seeing that the Oil of Salt containeth too much Acrimony; therefore a drop of it is to be mixed with a spoonful of Beer, Wine, or warm Broth, before it be administered to weaken the spirit of salt; but if any desire to have it sweeter, instead of Wine, Beer, or Broth, it may be mixed with melted Sugar, or syrup of Roses. The Dose for a man of ripe age, is two or three drops, which if he shall perceive not to operate sufficiently, he may encrease to three or four drops, so long, till he shall find an evident operation, which appearing, let him encrease the Dose no longer, but rather diminish it a drop; and when the Oil of Gold rightly performeth its operations, these signs will appear: In the first use, a certain loathing or nauusefulness of the stomach, will be perceived, when the Oil of Gold findeth there a vitious pituity, and endeavouring to expel it, driveth it downwards, and ejecteth it by stool. 2. The Excrements are as black as a Coal, and during the use of the Medicine, the sick maketh a discharge by stools at least twice, sometimes three or four times, without any impediment or fence of necessity, as is wont to be in the working of Purges. The Urine will also be thick and turbid, because the Medicine dissolveth the Tartar and Phlegm in the Reins and Bladder, and by

degrees expelleth it. NB. That by the black Excrements, it is manifest, that Gold may be radically dissolved in the stomach of a Man, which some think to be impossible. The humane stomach hath a greater power in the destruction of things than the strongest fire, as may be here seen by the Gold: Yea, all things which are eaten or drank, in the space of 24 hours, it thoroughly dissolveth and transmutheth into a new form of Excrements.

If the stomach of a man can effect such things, why not Art also? Yea, hence it is expressly proved, that the colours of Gold, at length, when it is radically dissolved and destroyed, do appear, and may be known, seeing that in Colours Blackness hath as it were the first and chief place, and containeth all others hidden and concentrated under it.

NB. That these black Excrements should not be cast away, but the radically dissolved Gold ought to be separated from them, with which perhaps some great thing may be effected.

Some time since administered this Oil of Gold, for eight or ten daies successively, to a certain Infant, for the freeing his body from Mercury, which had been imprudently given him for the Worms; I ordered the Excrements to be saved, for some Experiment, which nevertheless, because they stood long and bred Worms, I could not use, but commanded them to be put to the Roots of a young Vine, which had not yet born Grapes, being but of two years growth, which produced a small Grape with large stones, which had golden spots like Stars, admirable to behold. This Example is worthy of a profound consideration. It also seems to me, that the Urine of those who continually use the aforesaid golden Liquor should be auriferous, although it appear not in the colour. The thing is out of doubt, seeing that men, in the use of the said Medicine, attract only a certain hidden virtue from the Gold, and again send the rest forth of the body, that that Gold is better than other common Gold: The Benignity of the Divine Being hath disposed and ordained every thing in the World for the best.

Seeing that in the Stomach of Man or Beast the Food is destroyed and putrefied, Nature taking a little from it only for nourishment sake, casteth out the rest by sweat, which yet is not of so abject a condition, as to want its virtues? for if these Excrements be mixed with any Earth, moistened with Rain-water, and exposed to the open Air, there will thence spring forth divers Herbs, without the addition of any seed; but if the seed of any Herb be adjoined, then is also brought forth fruit of the same substance and quality; so that these Excrements may degenerate, and be converted into whatsoever Fruits we will: From which Fountain the multiplication of Herbs and Metals may perhaps take its original. Therefore it is necessary, that putrefaction should go before Multiplication; which our Saviour himself told his Disciples, saying, Except a grain of Wheat shall fall into the Earth, and die, it remaineth alone; but if it die, it bringeth forth much fruit. The Axiom of Philosophers is, Where Nature endeth, and leaveth the Work imperfect, there Art ought to begin. But the manner of proceeding farther they have involved in silence. Nature from the beginning hath furnished a Mineral Ens, or first matter of Metals, as much

as it could, and brought it to the royal seat, or highest perfection: Art hath destroyed the most perfect body of Gold by corrosives, and being destroyed, hath again dissolved it in the body of Man: But if any know the manner of proceeding farther with it, he may easily reduce that Essence of the dissolved Gold into a better, and multiply it: But I would not have this taken for an Oracle, seeing these are only my Cogitations.

The Use of this Medicine is to be continued till the body is freed from all ill symptoms; nor are any other Remedies to be intermixed with it, that its operation may not be hindered: But before this Medicine be administered, a Dose of two of my *Pomacea* ought to be given, (of which the Second part of my *Pharmacop. treateth*) for then its effects are to be admired.

This Oil of Gold, or Aurum Potabile, is of much greater force in all those Diseases, in which the simple spirit of salt is conducible, because the Oil of salt hath double the strength of the spirit, and also dissolveth its virtues much better, by reason of the Gold which is anatomized in it; the which, because it is of a hot and dry property, agreeth very well with the Oil of salt, whose nature is hot and moist: and hence it effectually resisteth all Corruption which may arise in the humane body.

Besides, the Virtues which the spirit of salt, and especially the Oil of Gold prepared with it, manifest both within and without the body; it is an egregiously preservative against Drunkenness, which is the root of many Diseases, and the Spirit of Salt, a Remedy against Drunkenness, which by which many evils enter: For a strong Wine or stale Beer being drank, suffer nothing in the stomach, because it cannot restrain their subtile spirit, which presently lieth up into the Head, and disordereth and confoundeth all the senses. But if in the drinking, a little spirit of salt be mixed with the Wine, it openeth the Office of the stomach, and suffers not the spirits to fly upward, but restraineth and bindeth them, also mitigateth and represseth that unnatural Thirst, which otherwise the Wine causeth in excessive drinkings: Nor doth the Wine, which is mixed with spirit of salt, so easily hurt the Liver; for as the spirit of wine heats and inflames the Liver, so the spirit of salt corrects and cools it. Add that the spirit of salt permits not the liquor to lie lurking in the stomach, but presently casteth it out by Urine: and the sooner the superfluous Wine is cast out of the body, the less hurt it can do. But this is to be understood of the spirit of salt well rectified, and subtilely prepared.

In short, I might sooner want Paper to write, than matter to express what good the spirit of salt coagulated can do, being taken in drink; I have said enough for the present; in my *Vegetable Work* I will more fully discourse of this matter, in which I now acquiesce: Whatsoever I have here written of a Medicine against all Sea-faring Diseases, and of the concentration of Corn and Water, against Hunger and Thirst; as also of the most efficacious use of Spirit of Salt, against Drunkenness, and of the melioration of Wine, Beer, Water, and other Drinks, is built upon the pure foundation of Truth, which Experience it self will sufficiently testify; with which I put an End to this Discourse.



A True and Perfect
DESCRIPTION
 OF
 Extracting good **TARTAR**
 FROM THE
Lees of Wine,
 And that after a Plentiful Manner.

To the most Reverend **PRINCE JOHN PHILIP**, Lord Arch-Bishop of Moguntina, High Chancellor of the Empire, and Elector, Bishop of Herbiopolensis, Duke of Franconia, &c. my most Honour'd Lord.

I presume, you remember (most Reverend and Noble Lord Arch-Bishop and Elector) that about Two Years since, I crav'd Your Lordship's Licence, to Extract *Tartar* from the Lees of Wine; which your Highness was pleas'd to grant me. From which Work, seeing I have been hitherto hindered by the multiplicity of other business, and the great Waste and Loss which is daily sustain'd in the Electorate of *Moguntina*, and Bishoprick of *Herbiopolensis*, proceeding from the Ignorance of the Lees, daily troubles me; I have determined to dedicate this gainful *Extraction of Tartar from the Lees of Wine*, to your Electoral Reverence, under whose Patronage I may be safe, and for this Reason especially, Because none of the Princes of *Germany* enjoy a greater Vintage than your Reverend Highness; to whom not only a good part of the Tract of the *Rhine*, but almost the whole Jurisdiction of *Manc*, together with *Franconia*, by Divine Providence, belongs; being very fruitful in Wines; where also much Lees are cast away, thro' Ignorance of the way of extracting their *Tartar*, for the Good of the Country, from which a good Spirit of Wine might first be drawn by Distillation; the *Tartar* contained in the thick Lees, and remaining

in the bottom of the Still, is by all Men cast away, as unprofitable, a few excepted, who with great Labour dry them, and of them make clavellated Ashes: Which Waste or Loss of the Lees, seeing that it makes every year an incredible Loss of *Tartar*, I have thought fit to expose the Knowledge of this Mystery to the Eyes of all Men, for the Good of my Country, by which some being instructed, may set about the *Extraction of Tartar* with great Gain, not doubting, but many, when they shall see this Labour to be profitable to others, undertaking the same, will bring great Profit to their impoverish'd Country.

Therefore I trust, this Little Work will be acceptable to your Reverend Highness. And I pray the Giver of all Good Things, to furnish both your Soul and Body with His Gracious Benefits, who study to be

Your Highness's most

Humble Servant,

J. Rud. Glauber.

A

A True and Perfect Description of Extracting good **TARTAR**,
 from the **LEES** of **WINE**, &c.

First of all, we must know what Dregs are, or what is their Essence and Nature, how they are resolv'd into Parts, and the Good separated from the Unuseful, because without the knowledge of the thing we can't give a right judgment of it, but must erre: Therefore it is necessary that we know what we have in our hands, that we may the safer handle it. For this cause I shall shew the Ignorant what are properly Dregs, and which way the better part may be extracted, that hereafter to great a Good may not by ignorant sluggishness be laid aside, but converted to the profit of all.

All thick matter, whether it be of Wine, Beer, Vinegar, or the like, when it has stood a little, sends the earthy, heavy, and more thick part of it, to the bottom, which we call Dregs or Lees, upon which the clearer part flows, to be separated from the impurity, as in the making of common drinks may be seen.

There was no use of these Dregs heretofore, except the making Brandy with 'em, and the rest to be thrown out of doors, in which was much Virtue, which Men did not think of: But that all things are not unprofitable which the Vulgar pronounce so, and that there may be great Virtue in ordinary Matter, I shall demonstrate by this Excrement of Wine.

When the Juice out of the Winepress is put into Hogheads, that there working, the dregs falling to the bottom, the clean Wine may come out, the superfluous Salt of new Wine, while it is squeeze'd out of the Grapes, with the same labour is separated, part sticking to the sides of the Vessel, which we call *Tartar*; but the greater part of this Salt or *Tartar*, imply'd in the turbid dregs like Sand, sinks to the bottom. Besides, this is the property of Salts, that by a hot humour they make a thin water, the humour growing cold, not being able to keep all the dissolv'd Salt that is compell'd to separate, which excluded the Vehicle, seeks a new place. If you put into the Solutions Sticks or Strings, that Crystalline Salt, in a cubical or angular figure agreeable to its nature, will stick to them; or otherwise it cleaves to the sides of the Vessel.

'Tis beyond all Controverſie, that the Grape above all Vegetables has much Salt, not sensible, unless it is fermented with a minute heat, which working by Nature, endeavours a separation, while the purer and more liquid part retains so much Salt as the Wine has need of, the thicker Salt being exturbated, part of which incrassates the sides of the Vessel, part of much thickness sticks, and subsiding with them, gets the appellation of dregs, from which the vulgar are wont to distill a Spirit or Brandy Wine: But these dregs are not a useless matter, as they have been hitherto thought, for much *Tartar* may be extracted out of 'em with little cost.

But he that shall search more narrowly into the thing, will find a way whereby poor and decaying Wine may be made good.

In some places, as suppose in *Franconia*, *Alſatia*, *Aufria*, and the *Rhenish Tract*, most fruitful for store of wine, these lees of wine are made nothing of, but are given to Swine and other Cattel to drink, by which

means the Tartar in it so purges 'em, that they are soon fat; they seldom try to draw the Spirit thence. Otherwhere, where wine is not made, especially where they fetch their wine a great way, they are much effected, not only because wine may be drawn from 'em, but also put in small Hempen sacks, are pressed in adapted Presses, a good mixt wine flowing thence saleable to others; yet this being but a small wine, many have destin'd it for Vinegar, to which it best agrees; but he that knows how to restore to it what it lost in pressing, may make a palatable strong wine, not inferior to what it was at first: But this Secret belongs to another place, I shall here only treat of Vinegar and Spirit of Wine.

In *Holland*, *France*, *Italy*, this pressing of the dregs and preparation of Vinegar is of frequent use, and very profitable to many, who get nothing but what they squeeze out of the dregs they have of the Vintners, and convert the Wine into Vinegar; the residue of the dregs they put into Barrels, and sell it to Hatters, which being boild in water, they thicken rough Hats with it; for Wool is brought into a little compass by hot water, and by how much the hotter that is, the Hats are made the thicker by it: For since it is the nature of Tartar to make the water wherein 'tis diluted hotter than fire, and since there is much Tartar in the dregs, by virtue of which, water acquires a more intense degree of heat, which the ignorant Hatters ascribe to the limosity of dregs, rather to be attributed to the inherent Tartar, hence they put so much dregs in every pot as they know to be needful to the consolidation of the wool.

And this is the use to which press Lees are put, but if they have a greater quantity than the Hatters use, sometimes they are corrupted, part turns to Worms, and afterward to a most stinking dirt fit for nothing. When they sell them to the Hatters, then the Vinegar made of the wine press out of them, which cost them little, brings 'em great profit, otherwise they would not gain much by their own Art, if they were not eas'd by the Hatters taking the residue.

But after what manner Vinegar may be made, I shall briefly shew: Vinegar-makers dispose many Hogheads upon Stands a foot high from the ground, under which a pot to receive the Vinegar is set, erected in a hot place, the upper head being taken out, about the middle of the Hoghead they place two pieces of Wood across, sustaining another foraminous bottom, upon which they put the Vinous dregs, filling the Vessel even to the top, then they cover it with the head or some good square Cover, that little Air may enter; when in two or three daies, by putting in your hand, sufficient heat is perceiv'd, the wine which before was press'd out of the dregs, is to be pour'd to it, so that the wine may be above the dregs, so the Hoghead close covered is left, till on the opposite row another Hoghead can be filled with the like dregs and grow hot; then the Wine being drawn out of the first hoghead, is pour'd into this, till the dregs in the first hoghead begin again to be hot, which are again to be macerated in the first Wine. This mutual affusion and depletion

of the Wine is to be repeated till a just acidity follows, which may be done in the space of two or three weeks, according to the heat of the Air; which will be good and permanent Vinegar, to be kept for sale in another Hoghead. Presently the first dregs being hot, fresh wine is to be pour'd to them, doing all things as before, till this wine also shall become good Vinegar. If you have many Hogheads, you may make Vinegar all Summer only, but if you will also work in Winter, the place may be made hot by the help of a Furnace.

After this manner in France and Holland many Families are maintain'd and enriched, by the dregs of Wine press'd and converted to Vinegar.

And now I shall produce my Invention, a good Gift of God, as I take it, to good men; 'Tis certain, that in Vinerous Countries, where much dregs are bought for a small price, they may obtain a profit to themselves not to be despis'd; for which (next to God) they are beholden to me, who by unwearied toil have found this Science, and let 'em shew their gratitude towards Needy Persons, lest they incur the displeasure of God, and so turn this Blessing into a Curse.

First of all, let there be a good Press, with a long Beam, from which hang weights, let there be put in small bags at least 5 or 6 Firkins of Lees, and them foundly press.

The wine that comes out by pression, you may turn to Vinegar, either by the help of other Lees, or some other method; pour as much of the thick in the sacks with a due proportion of water into a Still, let it not boil in stilling, the Head being on, apply the refrigerator, manage the distillation as otherwise Spirit of Wine is wont to be drawn, keep the Spirit proceeding thence till there is a good quantity of it, which you ought to rectifie or clarify by several distillations: (tho this Spirit is not abundant in the dry dregs, yet there is sufficient to pay for the making of the Vinegar and Tartar) when there comes an infipid water, take out the fire, open the Pipe or Cock coming from the Still, let the water with the dregs run through the Channel into a great sack put to the Press, when 'tis close ty'd, press it, that the moist may be separated from the dry: the Liquor cooling in a peculiar Vessel, and congealed into Tartar, will stick to the sides, the rest falls down like sand: Take out the dregs remaining in the sack, dry them in the heat of the Sun, burn them under a Still as wood, and you will have very sharp ashes, commonly called clavellated ashes, useful for Dyers, the price of which (at least) exceeds the pression and preparation of Tartar. When you have finished one distillation with the Press, fill the empty Distillatory with fresh water and dregs, as before, and while you draw spirit thence, press the first dregs, and continually put the distillation to the same Press, which coming out hot, don't put it to the former, but give proper Vessels to each distillation. The day after, put the first water from which the Tartar went to the bottom, to the third distillation, instead of fresh water, that is, by dissolving and distilling new dregs in it, as I have taught: Let the feces of the fourth distillation be pour'd in the second water, which hath let fall its Tartar, and so afterwards, by which Compendium you will make no waste of Tartar, but what remains in the water, may take increase from the new dregs to which it is pour'd, and it will give its Gain: But if you will, you may animate that acid water from which the Tartar is separated, and with a small charge, by Grain and Fruits of Trees, give it life and foal again, that it may again be made Wine, not unlike the first press'd from the Lees, after the same method it is turn'd into Vinegar, (because 'tis already sharp, the life or soul only that preserve from Corruption being wanting) the way of proceeding will bring great Gain to him that understands it.

If you know not the administration, do as I have order'd, and instead of common water, dissolve the hard dregs in this acid, and you will have good Tartar; but that languid water may also be adhibited to other uses, which I shall set down in the end of this Book: This do, that the feces be not burnt by too great a fire, nor the spirit stink, and the still be spoil'd, which you may prevent if you anoint the bottom with Lard before you put in the heavy water, and draw off the spirit. Here I might shew a Compendium whereby the dregs, tho' dry, should not be in danger of burning, but it would be long and tedious to the Reader. But if you mind diligently what I have written, you will get enough.

When you have gotten a good quantity of Tartar from the Lees, not neat to outward appearance, but very like dirt or sand, purge it yet more, that either it may be reduc'd to a very fair Cryfal, or till it cleaves in great Fragments to the sides of the Vessel, which you may effect by the following Way. Fill a Vessel with limpid water, almost to the top, put a little granulated Tartar into that water, foundly boiling to dissolve, putting a stick to the bottom, you may see when it is dissolv'd, add more by degrees, till no more will melt in the water, which you may thus find out: Fill a Pewter Saucer with this Liquor, if it contracts a little skin or cream, it shews that it has enough Tartar to produce Cryfals, but if not, add more Tartar, till you see this sign in the pot; while it boils, add the scum taken off with a perforated Brass Ladle, to the dry Lees, which by reason of the Tartar adhering, when burnt, conduces to the clavellated ashes; when the boiling has drawn Tartar enough, let it be let out thro' the Pipe of the Still into a clean Receiver, where while the water cools, the Cryfals will incrustate on the sides; apply the rest of the water to the same uses, you will do better; if you shall change it into Wine or Vinegar, let the Cryfals remain in the Vessel, for if you add a new boiling, greater and fairer sorts of Cryfals will be made, because by how much the thicker this Tartar is, so much the dearer 'tis held; and thus you may conciliate thickness to your Cryfals. When it shall seem enough, pour the rest of the Solutions into another Vessel, in which the first Tartar has concreted, let it dry of it self, afterwards strike the sides of it with a great blow, and great Fragments of Tartar will fall down, which you may sell for profit, put the vessel to the same labour again.

This is the exact description of producing good Vinegar and Tartar necessary for many Arts, from the basest dregs, and of justly getting much profit with little pains. Now I proceed to make the Wine which some call Adult, or Spirit of Wine, of the Lees of Wine, without any Coals. After the defecated Wine is pour'd out, put the feces into the Still, add as much water as the dissolution of the inherent Tartar requires, kindle a fire, stir it at the bottom with a wooden Ladle, that it may not burn to; when you can no longer bear the heat of the water with your hands, and the spirits break forth, take out the Ladle, put on the Head, and distil till you perceive no spirit, but meer Phlegm; the remaining Liquor draw out into a sack close ty'd, work it in the Press, and you will have spirit of wine by distillation, and also Tartar by exprellion, concretion, crytallization,

ful to endeavour a livelihood this way, or that, is attested to by a laudable example, in both the Old and New Testament.

This is the true way of pressing wine from Lees, and reducing it to Vinegar, and drawing out Brandy and Tartar, and incinerating the refuse.

It remains that I set down the uses to which the rest of the water from the Tartar may be adhibited with profit; but we must know by the way, that the soursness in that water is nothing but Tartar dissolved, which does not take a Crytalline form at the sides of the Vessel: therefore this acid water performs whatsoever is effected by Tartar diluted in common water.

Since there is no man but knows how to dissolve Copper in tartarified water, without the help of salt, as in the dealbarion of ordinary Coins and Silver Vessels among the silver-workers may be seen, who take away the Copper sticking in the superficies of money or silver-vessels by boiling, the silver appearing as if it had nothing of copper mix'd with it: to this work the aforesaid water may be very profitably applied; and seeing that a great quantity of it remains in the working of the Lees, it can scarcely be better employ'd than by the following method. If the vitler Marcafites of Copper, every where obvious, and which cannot otherwise be melted with profit, as also the Scorfa or dross of Copper, which is thrown away, be boil'd in this water, it will attract the Copper to it self; cast in Filings of Iron, and they will be exalted into Copper, and the extracted Copper will be precipitated from the water by the addition of the Iron. This gradation of Iron into Copper being done, which in outward appearance will be like a dirty Mudd, it is to be decolorated with clear water, and then thoroughly melted by the force of fire, which will yield a very fair Copper, no way coming short of other Copper in goodness. Which Labour is very profitable, because a great quantity of tartariz'd water proceeds from this Work, but that it may the more easily act upon the Copper, in extracting it from the stone or Marcafite, a little salt is to be added in the boiling.

But if the Marcafite or Copprious-stone abound with too much sulphur, which yet seldom happens in the more ignoble Marcafites, they must first be torrefied, that the sulphur may be burnt, then to be ground, and boil'd with the tartariz'd water, and precipitated with Iron; which way more Copper is acquir'd than was in the Copprious-stone it self, because while it is precipitated, part of the Iron is exalted to Copper, part turns to Vitriol unlike to the natural in hardness; for a green solution remains, whereby Cloth and Yarn are made as black as with common Vitriol; also it affords the best Black for Shoemakers to colour their Leather, and is naturally adapted with Oak to conciliate a black colour to Wood.

If this vitriolated Water be boil'd in an Iron Pot till it be dry, and the residue melted in a strong fire, you will obtain a most tenacious or tough Iron of wonderful virtue, if not to be prefer'd to good Copper, at least to be compar'd with it. And so the common Coppric-stone of Iron is better than the filings or scales of Iron, if with the Lees of wine it be reduc'd by the spirit of the world into small Balls, when you melt them, a very ductile and pure Iron will come out, fit for more uses than common Iron; which labours if any will enter upon, they will reap fruits not to be despis'd.

It would not be beside the matter to annex the manner how you might use both your Tartar and Ashes at home, neither that you might be fore'd to sell them abroad, but it would be too long, and rather hurtful than profitable to the present business. This I think to treat of farther another time, by the Grace of God.



THE
FIRST PART

OF THE

Prosperity of Germany:

Wherein is Treated of

The Concentration of Wine, Corn, and Wood, and the more profitable use of them, than hath hitherto been.

T O

All those Patrons that Love GOD, and favour their Country,

HEALTH.

To Pious, Prudent, and your Country-loving Patrons.

THE Most Excellent Glorious God, and our most Merciful and Bountiful Father, hath (out of his great Love unto, and Fatherly Care of us, from Eternity) set Nature before our Eyes, that he might signify to us his Will; which said Nature, is no other thing but the proper, eternal, and only Will of God. To this Nature, God hath (as to his obedient and faithful Instrument) absolutely delivered, and committed his Will and Command to be by her faithfully and diligently performed; he accomplisheth the Task imposed on her, without intermission, nor reflecteth the one moment of time from doing the Divine Will with her utmost study and endeavour.

Therefore, deservedly ought we to learn to know, worship, and love the Creator above all things else whatsoever, seeing the Creator is known by the Creatures.

If his Creatures be great, and unperceivable to our sight, and so wonderful; certainly it of necessity follows, that the Creator is far greater, and far beyond all Human Understanding; and this, every one may easily understand: 'Tis therefore clearly and evidently manifest, that God Created all things for the service of man, that he might thereby acknowledge the Divine Bounty, and Honour, and fear the Creator, and bestower of all good things, and yield him due Thanks for his Gifts.

But seeing that it may be, that the most just God will sometime or other, at last (being provoked by

the perfidious malice of men, avenge himself on the most Impious living of this perverse World, by bringing Scarcity of Food, (War, and the Plague); and seeing that it may so be, as that the small Company of the Pious, lying hid amongst the Impious Crew of the wicked, may partake of the same punishment: Therefore I thought it very expedient, with a cheerful mind to publish (to the Honour of God, and my Country, and for the comfort and solacing of its Pious Inhabitants) the Talent that God hath vouchsafed unto me, by the help of which, very many such Calamities as may come, viz. Famine, War, and the Plague, may be prevented.

But the way I have pitched on to serve my Country in, doth chiefly consist in the manifestation and Revelation of those most great Treasures that lie hidden in Germany, being such as by the regardlessness of Men have been hitherto unknown, unfought, and not gotten forth. I have therefore endeavoured, faithfully to manifest in this present Treatise, by what means those Treasures are to be sought for, and rightly ordered for the profit of my Country; and withal, to open the Treasures of the Noble State of Germany, wherewith it is most abundantly enriched, beyond all the other Countries of Europe, and hath hitherto enjoyed, and used (but not so well as it should have done) viz. Wine, Corn, Wood, Minerals, and Metals. For Ungrateful Men have extremely wasted unprofitably, the most wealthy, and rich Benediction of God, who hath bestowed Wine and Corn on them, in abundance, and the Relicks (which they spent not) have they suffered to corrupt and perish with lying.

Not

Nor is there any body that doth in the least entertain any thoughts, by what means such an abundance of so great Gifts, might be kept and preserved for future years, which may be accompany'd with extrem scarcity and Dearth. Every one shifts for himself and his, with that plenty of Goods he enjoys; and leaves another to take care for himself, and to see for time to come, that he provide himself for things necessary whereon to live. And it is come to such a pass, that the overplus which remains of the abundance of the Blessing of God, is merely cast away through a careless disregard, and so nothing is preserved for after times. And yet our Lord Jesus Christ himself when he fed many thousands of Men with Bread, commanded his Disciples carefully to preserve the remaining Crumbs, that nothing might be lost; the which without all doubt he did for no other end, but that we might have the Gifts of God in high esteem. But where shall we find such as will imitate, and do the same; certainly no where, which is inexorable with God and good Men. Certainly such a largess of Divine Gifts, is not bestowed on us, that they should miserably perish, or be cast away; but we should rather labour and take care of diligent laying up and preserving (like so many Laborious Ants) all that overabundantness which we cannot make use of. Let it be but considered, I pray, in what great heaps Corn lies heaped hoarded up, and is spoiled. And is it not the same with Wine, which being gathered in such over-great quantities, is become vile and abject, or cast away?

What, cannot there be store laid up out of this very plenty (which now is grutch'd at, as 'twere) as so many great Treasures for future Calamitous Years?

Well however, though as yet this hath been left undone, yet I am confident, that some good Householders will be found, that will not despise this Instruction and Admonition of mine, but will condense the so much superfluity of Wine, and Corn, and preserve it against future Years scarcity. Nor do I at all doubt, but that others, after they have by this Book well learned the manner, will turn the superfluous, and cast away Wood (which lies and rots, and is reduced to nothing) into Salt-petre in great quantities; that by its help the Enemies may be resisted, and the Inhabitants defended. But in the three following Parts, which treat of the Concentration of Metals, and Minerals, wherein all kinds of Medicaments resisting natural Diseases, shall be taught, I know that every one will find refreshment, and help, against the future Plague, and Contagious Diseases. So then, when we have Food and Drink necessary for a Livelyhood, and Salt-Nitre to defend us against our Enemies, and Medicines serving for the preservation of us in Health, there remains nothing else we can desire, save a little Gold and Silver, by which we may exercise Trade, or Merchandise, and furnish our selves with Outlandish Wares. The which, that we also may get out of

those Mountains, we every where meet withal, and out of those abject, and given-over Mine-pits, I question not, but (God permitting) to effect it, and clearly to shew it in the three following Books of the Concentration of Minerals and Metals. Upon this account I would no longer keep by me this small Book of the Concentration of things, but publish it to the Honour of God and my Country, (it being a Talent vouchsafed me by God.)

I do therefore Dedicate it to all Pious, Faithful, and Good Householders, hoping that my sincere Admonition, and Instruction, will find some place, and not be rejected.

The three Parts I promised, shall shortly follow: Furthermore, I offer my most faithful help to every one in the opening and revealing the said Concentration of Wine, Corn, Wood, Minerals, and Metals; for all things being in a readiness, I can easily shew the manner of Concentration. And seeing I am ignorant, how long a time the most Merciful God will vouchsafe unto me, the use of life and light; I would not willingly bury with me a Science so eminent, so Noble, and so profitable to my Country. But if now it should so fall out, that few or none should at all mind it, yet have I done my part, and satisfied my Conscience: Though indeed I do not in the least doubt, but that there will be some good and faithful Householders, by whom these Profitable Inventions of mine, will be regarded, and be made use of for God's Honour, and for the Conservation of the Country, and its Inhabitants.

This I certainly know, that if this Counsel, or Direction of mine, concerning the Concentration of Wine, Corn, Wood, and Minerals (which proceeds from the simplicity and sincerity of my mind) shall find any place of entertainment, that our most praiseworthy Country of Germany, will in a few Years space become most exceeding happy, and be so enriched, that both high and low will be much joyed, and praise God, and give him thanks.

But I easily conjecture with what various and different Judgments this Off-spring of my Brain, will be expounded. One will haply give credit to the things I have said; but another will condemn and disdain them, as mere Impossibilities, and Dreams. But however, the truth will at length break forth, and the work it self will purchase to its Master due Praise, and herein I content my self. The most Blessed, most Merciful God, and our Father, that great Householder, bestow on us his Divine Benediction, that so we may institute in most places of this our most dear Country this Concentration of Wine, Corn, Wood, and Minerals; and may by the help thereof obtain such Treasures, as may serve for the sustaining of our life, in time to come, and for the resisting of our enemies, and for the Glory of God, and the help and succour of very many needy ones in Distress.

THE

The PREFACE.

IF the Proverbs of the Ancients are to be embraced as wholesome Doctrines, then certainly this (being none of the least) is not to be rejected; and is thus, That he that will not hear, 'tis fit he should afterwards feel. The meaning of it is this; If so be anyone be regardless of a warning, and so come to damage, every one is wont thus to say of him, He is but justly rewarded, why did he not yield to a faithful warning? who will help him now?

But however, I have endeavoured (for the Honour of God, of the Magistrate, and of my Country, and the benefit of my Neighbour) to shew, by good Admonition, and by a profitable Testimony, by what means, that great plenty we have in these as yet prosperous times, wherein we have abundance of Corn, Wine, and other things in great plenty throughout all Germany, may not unprofitably be lost; but be preserved for Support in those years of scarcity that are next to come, according as Joseph that most excellent Steward mentioned in Holy Writ is said to have done.

And now that there may be as much prevention as is possible, that the Wine, and Corn perish not with lying, but be preserved against a future scarcity, I have published this little Book for every ones view, concerning the Concentration of Vegetables, Animals, Minerals, and Metals, in which, the prosperity and felicity of all Germany, and indeed the Universal Treasure and Wealthiness of the whole World, is seated.

And because such an abundant plenty of all these things begets a nauseating and loathing, as it were, of those Minerals, Metals, Wine, and Corn, wherewith Germany exceeds all the other Countries of Europe; I judged it well worth while to constrict, or concentrate this plenty into a little room, and preserve it from the loss and destruction of the same, arising from Negligence and Contempt. For when such vile, or cheap things are driven into a small compass, the baser and unprofitable part goes off, and the nobler and better part is driven together, and preserved, and doth not so easily become corrupt as afore, when both good and bad are commixed together.

And this is to be understood of the Minerals, and Metals, and of Wine, Corn, and Wood. For where the Water is separated from the Wine and Beer, and the more Noble Parts are concentrated, as it were into a Centre, you may even preserve them as long as you list. And when you need either Wine, or Beer, the concentrated parts may be relaxed by the addition of Water, and be enlarged, insomuch, that one Vessel will hold six Vessels of Wine; and this, taking up but one place, and yet contains six times the quantity, there will not need so much coasts, nor will so much Wine be spoiled by vapouring away, as would be by six Wine Vessels, which must always be kept full. Besides, this further benefit ariseth herefrom, viz. That out of such concentrated Juices (if they be at hand) there may be made every Autumn new Wines sooner than ordinary, 4, 5, or 8 weeks time or more, and be sold at a bigger rate, than in the very Autumn Season, when the Grapes are ripe, and every Body furnished with Wine.

NB. For such a work there is requisite a certain peculiar Instrument, and artificial knack, by the help of which the Juice may be helped to a speedy fermentation; there are also other Concentrations which arise from these thus

concentrated Juices, which for Brevities sake we here omit. So likewise Beer being after the same manner concentrated, doth bring a many more Utilities than ordinary Beer. For that Corn which eight Barrels were scarce sufficient to contain afore, need no more but one here, the which being put in the Beer Vessel, will not turn into Vermin; nor will it stie out of the Barn, but may be used after 10 or 20 years. Such Artificial Fartitious Ales, being they are (in their condensation) boiled a longer while, are far better than the common sorts which are made of dried Corn, or Malt. Whosoever therefore shall in a great plenty of Grain, buy up Corn, and condense it by such Artificial Concentrations, and so lay it by, till a scarcity comes, will gain abundantly, and will not only get to himself an honest, and to others no ways injurious profit; but will wishal (being thus studious of Charity and Mercy) deserve exceeding well of his Neighbour, if he helps him in his great necessity, and he will readily pay him for his Corn, whereby he may get Money to sustain his Family and be a profitable gainer.

So then, no body is injured by this condensation, and concentration of Ale, or Wine, but both the Buyer and Seller are Gainers, and this should of right, be in every Mans heart, what condition sooner he be of. It would be well done of Noble Men, Princes, Kings, Emperors, and other Magistrates and Common Wealths, if they would provide in their Store-houses for Warfare, such kind of condensed Liquors, and Juices, that so the poor may in a time of scarcity be made partakers of that plenty, and they will have no loss thereby, but rather benefit.

But the Condensation of Wood, and turning it into Saltpetre or Nitre, is far more profitable than that of Wine or Ale; for wood may be had even as it were gratis, and be with a very small Cost transmuted into Nitre; the which may be kept without hurt in the Storehouses for a long time, seeing it is not wont to corrupt or perish, and be there preserved until it be made up into Gun-powder with Coals and Sulphur, both which are also not subject to corruption; so that it is not so very necessary (nay, rather it is hurtful) to have such vast quantities of Gun-powder in their Castles and fenced places. There are examples enough of Towers in which Gun-powder hath been stirred up, which either through negligence, or else by lightning, being fired, have in less than a moments time destroyed whole Cities, and slain abundance of men. Now this mighty inconvenience may easily be prevented by this only Remedy, viz. If the Powder be not made up, but the matter thereof (viz. Nitre, Sulphur, and Coals) be only kept in readiness, wherewith the said Powder may be made, as necessity requires: Besides, herein also doth the concentration of Wood exceed (as to profit) the condensation of Wine and Ale, not only because there lie vast heaps of Minerals in Germany; (which not containing a fixt and corporeal Gold, are therefore distinguished) that admit of a separation of their better part, and fixation of it by Nitre; but wishal, the meaner Metals (their superfluous Sulphur being burnt up) may be transmuted into better; and the perfect Metals, viz. Gold and Silver, may (by the help thereof) be destroyed, and be enforced or concentrated into a better part; the which thing the following Second, Third, and Fourth Parts treat of.

So then, this Transmutation of Wood into Saltpetre or Tartar of both which not only great quantities may be sold,

but may be also applied to sundry uses, will bring to our noble Country of Germany (in which there is an incredible quantity of Wood to be had almost every where gratis) a most notable increase of Power and Strength, not only against its future, but its present Enemies.

Whosoever therefore shall have abundance of Wood, shall likewise be enriched with store of Wealth, provided he will but set his hand to the work, and not fear that ever Saltpetre will be such a Drug, as to be of no value, and not vendable: And yet if it should so be, yet in the Explication of my Miraculum Mundi, already published, I have manifested so much, and will, in the three following parts of this Book, manifest such things as concern the use of this Salt, that there will never want such, as penetrating into the knowledge of these Secrets, will not full well know its Use.

He that hath Eyes, let him look about and use them, for the time comes, yes, and by little and little approacheth, in which Knowledge will be a profitable thing; and it will be well for those who are seasoned with the knowledge of things profitable. Verily, Knowledge is better than store of Goods; for no body can carry them with him, nor (in some cases) help either himself or his Friends with them. Happy is he that can lay with the Philosopher, All that is mine do I carry with me: How injuriously do they speak of the most bountiful Lord God, who accuse Him for that He hath furthorn the bestowing of Wine, plenty of Corn, Pome-Citrons, and Gold on some Countries, and yet fully as great Treasures are to be found there, if the Eyes of the Inhabitants were not darkened? If there were nothing else, yet certainly there is Wood to be found, which without any labour, cost, or trouble of Rich or Poor, doth grow night and day, and offers it self unto us, and as it were, saith unto us in these words; What I am I of no use? Do not I come forth to thy view, that thou maist by contemplating on me acknowledge the Divine Bounty, and make use of me with thankfulness? There is not therefore any reason why one Country should exalt it self before another, because it is better; or contrarily complain, that the Divine Benediction less regardeth it than other Countries; no, each Country hath enough, if it would but be content with what it possesseth. As for those Countries which are even destitute of Wood, they do nevertheless abundantly enjoy the Divine Benediction; witness Island, and other cold Northern Countries, which have their Corn, and other Necessaries for Life, brought them out of other Countries. But now on the other hand, these Countries afford Cod or Stock-fish dried; and so, though they want Trees, Fruit, Corn, and Wine, yet they do not want, and are equally as well nourished by the Divine Bounty as the rest be. Though they want Wood, yet have they Pit-Coals; for the Earth there is very sulphureous, and at the Mountain Hekla it burns perpetually, and casts out fire, smoke, and ashes, and yields to the Inhabitants a great quantity of Brimstone, which they dig out and sell to our Country Mariners and Traffickers, thereby sustaining themselves.

Some one or other may object to me and say, Seeing that Saltpetre is to be accounted of as an Universal Subject, and to be found in all things, it must necessarily be, that seeing Island has no Wood at all, the Saltpetre is to be found in the dry Stock-fish, for otherwise this Salt can't be said to be Universal, as being not to be found in such or such a Country.

Well then, to clear this doubt, I do affirm, (as I said before) that Nitre is in Fishes also, though not in such plenty as in other Subjects, viz. in Wine, Wood, and Corn: But it is found far more plentifully and potently in Stones, with which these Countries are well stored; and any one may easily guess what Riches they would produce, were they but versed in the knowledge how to extract it; for in Stones

which by burning are turned into Lime, (the which may be done without Wood, even by dried Turf or Pit-coal, and that easily) Nitre is as abundantly hidden, as in Wood, and in other Vegetables: Nor is there ought else requisite, save the knowledge of the way of its extraction.

If therefore that harsh and wild kind of Country, where in nothing grows, be put in the Philosophical balance, with the most rich Country, it would (seeing it contains hidden in its Earth and Stones such great Treasures) easily exceed it, and obtain the chiefest place. There is therefore no reason why any one should complain before God: A small man doth usually exceed, as to swiftness and agility, one that is big and tall: A weak man may oppose the acuteness of his wit against the strength of the lusty: A poor man enjoys Quietude, and patiently undergoes his more hard fortunes; but contrariwise, the rich is involved with cares. And this may be also understood of other living Creatures. These things being well considered, every one may understand and perceive, that God hath satisfied every one, and that there is no Creature that can justly complain.

It is reported of the Peruvian part of America, that it is enriched with the most abundant Silvery Mountain Pot-ashes, seated in a part of that Region, and is about some 50 German miles in compass, and that it doth by its exceeding cold Air hinder the growing of any Vegetables, and yet notwithstanding, there is such a notable power and excellency obtained by the Riches of that place, that the City there founded doth abound with the best Wine, Corn, Sugar, and other such-like necessary things, and is scarce inferior in bigness and fair Buildings to any City of Germany, and from this very Mountain only receiveth it this felicity. It is hence evident, that all such things are not unprofitable, which (by reason of the meanness of the outward shape) are not so well known to every body; for sometimes a Countryman throws a Stone at a Cow, which is far more worth than the price of the Cow is, and yet it is contemned, because unknown.

The external and superficial Figure therefore of a thing is not alwaies to be regarded, but its inward parts are to be searched into and viewed; and that we may attain hereunto, Alchemy points out to us the way, (the being the Instrument of the true praise-worthy Philosophy) and opens the Gate, whereby we may search into the inmost bowels of every thing.

He who well knows the fire, and the use thereof, will not be distressed with want. And he that has no knowledge of the same, neither will he thoroughly search into Natures Treasures: From these things it is evident what Treasure we Germans do unknowingly possess, and yet convert them not to our use; And were not foreign parts as ignorant too of these things as we our selves are, they would readily have upbraided us Germans, that we spend more time in eating and drinking, than on good Arts and Sciences.

Now as concerning my writings about the concentration of Wine, Corn, and Wood, and the condensation of em, I shall never be better able to prove and confirm the Truth of the same, than by producing it to manifest light, that so the Eyes seeing it, all admiration may cease, and all incredulity vanish. There is credit therefore to be given to all the things mentioned in this Book, as to an experienced Truth, and which are not made publick for any other ends, save only that those natural Sciences may tend to the utility and benefit of my Neighbour. Whoever therefore shall believe them, will purchase Honour and Profit; and contrariwise, he that will not believe, will get only disgrace and detriment.

I will therefore predict or foretell, that this one only Artifice of making Saltpetre in such great plenty, and the way of using it to metallin works, will bring incredible Treas-

sure to our Country of Germany, if we be not too negligent, or let it slip by a sluggish slothful drowsiness. I do verily believe, that if God doth yet vouchsafe me one years life, that this said Artifice of Salt-petre will be profitable to very many; but if so be that it shall not please the Divine Majesty to prolong my life so short a time, it may however be accounted of, that God hath indeed shewed us Germans, as heretofore he did to Moses, the Land of Promise, but hath, by reason of our sins and incredulity, shut up the passage against us.

But that I may absolutely serve my Neighbour, and that he may have no cause to complain, as if I had served him but by halves, in that I have not described the Preps for Wood, together with the appertaining Instruments, I do now therefore certify every one, that all the things necessary and requisite for the concentrating of Wine, Corn, and Wood, are to be seen in my custody in perfection.

If now any one be desirous of receiving benefit from his Wine, Corn, or Wood, and that he find it highly to concern him to get this knowledge he will well know, by the inspection of the Work presented afore him, wherein lay the defect as to the getting this thing, and what means the said defect is to be holpen by; but the Instruments that I have mentioned, shall be no longer to be seen, than from the Calends of March to the Calends of September, this present year 1656. viz. six months time; for I have purposed to my self, not to render my life burdensome always unto my

self, by carrying such troublesome burthens about to and fro, but at last to get a quiet seat and abode. So then it will, by this here spoken, be evidently manifest to every one, what he is to do as touching this matter.

The three other Parts concerning the concentration of Minerals and Metals, shall (if God permit) shortly also follow.

But because Nitre is the alone Instrument of that work, and that no body can get any eminent profit, unless he can have Nitre at a very cheap rate, it is wholly necessary that some labour be bestowed about the procuring it, which if you can get good store of cheap, then will the hoped-for profit be perceived, both out of Minerals and Metals: If not, vain will it be for you to make your search into that Mineral kingdom.

Well, I do affirm, That by the benefit of Nitre, things wonderful may be effected in Metallick Labours; yea, ten times more than what I have described in my small Treatise, called Miraculum Mundi, or dare to describe for the future; for all things requisite to true Alchimy, may be perfectly accomplished in it, by it, and with it.

Herewith I conclude this Preface. Whatsoever is here wanting in this Treatise, for brevities sake, being demonstration visibly exposed to view, will afterwards compleatly recompence, inasmuch that any one will easily vind himself out of all doubts. And here we rest for this time.

THE FIRST PART

O F

The Prosperity of Germany, &c.

IN the Name of the most Holy Trinity do I begin to describe the most great Wonders of God, that I may manifest to every one (without concealing ought) His Grace and Mercy, which He embraceth Mankind withal; and I pray God, the Father of us all, the merciful Creator of Heaven and Earth, to guide and direct this Work, that it may serve to His Divine Honour, and tend to all our welfare. Amen.

We will enter into *Franconia*, and see what a wealthy and large Benediction of God is to be found therein: And I will first begin with Wine, none of the least of the most noble Creatures of God, and will demonstrate how ungrateful we shew our selves to the bestower of all good things, and how basely we abuse His Goodness.

Every one knows what a noble Creature wine is, how strained from the Grape and made, and therefore this thing needs no further description, forasmuch as others have heretofore sufficiently enough done this task and daily Experience is an abundant testifier of the use of the same. It is behoveful here, that we only signify how it ought to be handled better than it has hitherto been, and may so likewise bring a greater profit and utility to the tillers thereof than hitherto. Every one knows, that wine is the noblest amongst all drinks, and most conducive to health, and may and ought to be called the Purest drink: It cherisheth old men, and heats the cold, but such as are of a tender age, should

deservedly shun wine, because being drunk too soon, it easily inflames the Liver, and dries it up, and stirs up various Diseases, and at last causeth Death it self. So then, there is nothing so good, but may also do hurt, nor is any thing so evil, but doth sometimes bring some benefit, according as the difference of the use is which it is applied unto: as is here evident in Wine; the which being drunk moderately, and at due seasons, doth not only excellently well digest and concoct the Meat in the Stomach, but likewise evidently strengthens the Heart, Brain, and Vital Spirits, and generates pure and sound Blood and Flesh. Contrariwise, being immoderately taken, it overflows as 'twere the Stomach, Lungs, and Liver, fills those Vessels with many evil humours, and obstructs them, so that they cannot well perform that office whereto they are destinated by GOD and Nature, but are overwhelmed with whole Troops of Diseases; for the Heart and Brain is set upon by their spiritual efficacy and hot nature and property, and is weakened, and the vital spirit is overcome and suffocated, as we see in the fire, the which when greater doth alwaies suppress and overcome the lesser.

Hence it comes to pass, that men that load themselves with daily drinkings, do little differ from new-born Calves and Geese, and are wont to be neither profitable to God, nor to Men, nor to themselves.

Ja

In the Name of God, therefore we will proceed on in the matter we have propofed, and see by what means more profit may be reaped from Wine than hath hitherto been.

In the first place, he that aims at the bettering of any thing, must know what the thing is which he studies the amending of, and of what parts it consisteth.

Therefore, as concerning Wine, it consisteth as well as the other Vegetables of three principles, viz. of Salt, Sulphur, and Mercury (that I may use the Philosophers terms). The Mercury is its insipid moisture, and the Sulphur is that burning Spirit which is extracted or drawn out thereof. You shall thus know the thing, by this following Experiment. Put a Cucurbit full of Wine in a B. and with a gentle heat draw off what will come, but yet so, that the parts which in the distillation alter or change themselves, be each of them received apart in its peculiar Receiver. For example; If there were 12 parts of wine, or 12 measures, there ascends first only one part of spirit, which is the soul and life of the wine; after it, come ten parts or measures of insipid water; the remainder in the bottom of the Glafs is a thick and aultere or harsh matter, which being the Tartar or Salt of the wine, is also almost one part or measure of the wine. Of these three parts all wine is compounded, but yet partakes of one or the other of the Principles, more or less, according to its being more or less mature, or its growing in such or such a place. As for example;

The Aultere Wine hath alwaies more Tartar and less Spirit than the Ripe Wines; and contrarily, the ripe wine doth abound with more Spirit than Tartar, as the Spanish and other extraneous wines witness, which do alwaies abide sweet, and plainly have no Tartar in them; the reason is this, because in those warm Countries they are brought by the Sun to meer sweetness, and are ripe; so that the aultere Tartar or Salt is thoroughly changed, and concocted into a sweet Sugar. Hence it comes, that the said wines do not in the afore-propofed Examen leave any aultere-ness, as our wines in Germany do, but rather yield twice as much spirit, and scarce the half part of insipid water: Whenas aultere Wine yields about a twentieth part of spirit, the ripe German wine yields almost a twelfth part, and the Spanish a sixth part of spirit, four parts of water, and one part of faeces without Tartar. So that from good German wine there comes (as I said afore) one part of spirit, ten of water, and one part of aultere or fowrth matter.

He that knows these things, will easily contrive and prepare for himself by the help thereof, at all times, be it hot or cold, good and constant, or durable wine. Neither is there any room left a man here of complaining, as if God shewed greater bounty to men one year than another. The fault of this defect is not to be imputed to God, but to our own selves, who know nothing, nor are willing to know, nor study how to help Nature; for Art can bring an assistance and help to Nature when she is impeded in her work, and is unable to bring her Fruits unto a maturity, provided the Artill removes away that which the wine naturally abounds withal, and addeth thereto what it is destitute of.

For example, Let us examin a thin wine, which being not sufficiently concocted and ripened by the Sun, is endowed with too much sharpness and water, and contrarily has but little of spirit; if now to such a wine, when it begins to boil or ferment, some spirit shall be added, so that it may work together with it, it will be even as well ripened in the wine-vessel, by the

benefit of this fiery spirit, as if it had been ripened by the Sun, as it hung upon the Vine; inasmuch, that by this means there might be made excellent wines every year, if any had but the knowledge of thus helping them.

NB. But now such a spirit must not be such an one as that common Aulter or Brandy-wine is, but a grateful and pure Essence of wine; the manner of making it I have described in my *Vegetable Work*. Now by how much the more this spirit shall ferment or work with such a wine, so much the stronger and more efficacious doth the wine become: Forasmuch as all the Virtues of all the whole wine consist in the spirit only, and the Tartar or Salt doth by its muchness make it aultere and sharp. But Musts being by such an Artifice made stronger and more efficacious, do keep a longer time afterwards without corrupting, and may be carried or transported whithersoever one please; whence it comes to pass, that they are never spoiled, as they are otherwise usually wont to be, when 'tis not of ripe growth.

From these things 'tis evident, that out of one Must, grown in one and the same Autumn, there may with ease be made wines of 3, 4, or more kinds, according as there is more or less of this spirit added to the Must and fermented with it.

There is also another way, by the help whereof every aultere wine is easily corrected and amended, thus: In the Vintage time, let the liquor of the Must, or of the expressed juice of the Grapes, be so boiled in peculiar Vessels, that the unprofitable moisture or tasteless water do exhale by little and little, until thou hast as much as thou wouldst, or as the efficacy of the wine, or the degree thou wouldst by correcting reduce it to, shall require: For, in the exhalation of the superfluous moisture nothing goes away, save that insipid water; but the sweetness and the aultere-ness remains in that thick and condensate juice, like to Honey; so that that boiled malth comprehends all the strength and virtues of the wine, concentrated as it were, and condensate, and will again disclose them, if it doth again work, with water thereto added in a due proportion; but the use of this condensate Must, which as yet hath not wrought or fermented, is this, That it can be at all times carried, and most profitably sold in far remote Countries, which thing could not afore be done.

For every one knows, that when there is a cold Summer, Wines become immature and acid, and are not wont to keep; for as soon as they come to be a year old, they are covered over with a stinky skin, and being mouldy, corrupt, because they have not in them spirit enough. From whence it comes to pass, that many times Vintners, or Vineyard-keepers, suffer great loss, after that they have diligently betook themselves to dress the Vineyards for an whole year, and have lived sparingly and hardly, and working hard, have sustained their lives with Bread and Water, hoping that upon selling their wine they should scrape together a little Money, to buy them some Clothes and other Necessaries for their Family's supportation; for the expected plenty of the wine hoped for, and of the profit accruing by the store of Money for it, when sold, hath prop'd them up with this hope; but now the wine fading and deluding their hopes, and turning into an acid and aultere taste, they cannot sell it, seeing 'tis scarce worth the carriage; or if it be sold, 'tis at such a mean rate, as scarcely sufficeth to discharge the Cost of dressing it; and what shall now be done for Food, Drink, Raiment, and other Necessaries to sustain the Family?

And

And yet the Vines must be dressed for the next year too, and more Monies laid out upon them; but from whence shall Monies come for Food and Raiment, in the mean time? Alas, what course will they take if some such like years should follow one another together? Either the poor miserable men must, together with their Wives and Children, famish, or else turn Souldiers, and be kill'd, or be made so desperate, as to betake themselves to thieving and robbing, and so finish their daies by a Halter: For the present world is so much estranged from Mercy, that one will not use so much Christian Charity, as to help another in his necessity.

And besides, the ingratitude it self of men doth sometimes make others slow and fearful of administering and affording a mutual help; forasmuch as very many, when they are rid out of their incumbrances, do refuse to restore those things, or by labour to requite or make amends for the things by which they were delivered out of their Straits.

Hence it comes to pass, that he who does a friendly good turn, for such an ingrateful man, loseth his Money, and by reason of that so ill placed formerly, abhors the lending his helping hand again.

Now, that such great inconveniences may be removed, and the Vine-dressers somewhat holpen so as that they might every year sell their wines at a beneficial price, and may never be oppressed with that fore-said detriment; it may very conveniently be done by the help of this concentration or condensation, by evaporating the *Must* to the consistence of Honey, the which may profitably be carried into far distant places, in which no wine is accustomed to grow, and be there sold. Such now as buy up such *Must* thus condensed by boiling, do now know how by diluting it with Water, to reduce it again into good wines. This Artifice therefore being so laudable, will be helpful to both, to the Vine-dresser, in yielding him presently ready Money for his *Must*, and to the Merchant, in easier furnishing him with Wine, and quitting him of so much Charges in the Carriage.

But that the business may be yet the better and more clearly understood, let us see by making computation, what the benefit and profit of this condensation is.

Let us suppose then, that a Wine not ripe remains acid and weak, and that a *Franconian* Uln, or half an Hoghead of *Frankfort* measure, yields scarce a Florin, or a Dollar at the utmost. Such a Wine as this will not quit the Coists of the Carriage, though but for 12 miles; [a German mile is three of ours.] for it degenerates by the carrying it, and becomes mouldy, as *twere*, and turns sower, so that the Hucker can't sell the fame, and he'll have a care how he buys such wines another time; and the Vineyard-keeper is even enforced to keep them to his great loss, forasmuch as all his safety or dependance is built thereupon.

As for the Rich men, tho' they have some acid wine, they are not undone by the loss, for they have still by them other better wines, which they mix those worse and more acid wines withal, and so sell them off; or else they keep such thin wines till the Autumn comes, with more plentiful and riper Grapes, and to the *Must* proceeding from them, do they pour this thin Wine, and let it work therewith anew, and by this means it becomes vendible. But yet the Gain arising hencefrom, is sufficiently poor and mean: For by how much the thinner the acid wine is than it ought to have been, tho' it be mixt with good Wine, yet doth this become so much the worse; nay, it sometimes happens, that both are corrupted and lost; for as much of help as the acid Wine gets from the good wine, so much of goodness doth depart even from the good wine. So that

such a kind of bettering after what manner soever it be instituted, cannot be very profitable or advantageous.

For example, that I may be the better understood, let us instance in two pieces of Gold, each of which should be the value of 25 Imperials: Let them be put in the Balance and examined, and being examined, let one of them be the due weight, and let the other be less in weight or price the value of four Imperials. If now you are minded to take so much away from that piece which is of current weight, as to make them both of alike weight, you may indeed so do, but yet you are no waies benefited thereby, but rather suffer loss: Forasmuch as you took away from that piece that was of due weight, and added unto the other piece that wanted of weight, so much of its value is departed, and both pieces will be unfit to go in payment, as wanting their due value and weight. What profit therefore can hence redound unto any man? Even so is the case with the Wine, for if one should get some two load of wine, and could sell one of them for 20, and the other but for 10 Imperials, and yet should not be accounted of as vendible Wine, and now the Merchant should mix that thin wine with the better, that they may both be equal, would not that better wine become worse, and that thin wine be rendered not much the better? For my part therefore, I cannot see that such a kind of meliorating can bring much profit.

But as for my bettering and correction, it is always profitable, whereby the acid wines are not corrupted by the acid, but the good and superfluous humidity only is separated by the benefit of Art, and the good part being condensate in it self, and by it self is reduced into a narrower compass.

N.B. He that is so minded, may separate from the sweet *Must*, a fourth part only, or a fifth or sixth part, by evaporation, and presently bring it to such a pass, as to work or ferment; for they become so much the better, by how much the more water hath been consumed by evaporation: If the Quintessence of wine be added to that working *Must*, the wines become the better, and the more generous. This kind of way may be made use of in those places in which the wine doth for the most part remain acid; for there needs not this Art to those Vines that Nature hath ripened.

Besides, the wines may be condensate to the thickness of Honey, that they may be thereby rendered the fitter for Transportation. Six Hogheads, or *Oma*, of *Must*, may be so condensate, that one Hoghead will hold them; the which (if need be) may again by the apposition of 5 Hogheads of water, which quantity it lost in the condensation, make 6 Hogheads of wine of the very same goodness and efficacy as it would have been of before the condensation, if it never had been condensate, but been presently put out of the Press into the Barrels, to have fermented and work'd into wine after the usual manner.

N.B. But now if any be desirous of making his wine better and more noble than it would have been afore the Concentration, then he must not put five, but only 4 parts of water; for should he add but three Hogheads or parts, it would be yet better and nobler by one degree than the others. Hence is it manifest, That it is in the hands of the Artift to make and alter these wines at his pleasure, and to render them strong, stronger, and middling, and by the addition of water to give them even what efficacy and what virtues you list. But now, to all the mixtures he may add the foul of wine, if he has it, that the wines may thereby be the fitter clear and pure. For the Quintessence of any wine being conjoined with new *Musts*, and working with them, brings them in a short space of time to clarity

clarity and purity, so that they become transparent, but principally when they are tartarized, or full of Tartar, for the Spirit of Wine brooks not any Tartar, but precipitates it in the fermentation to the bottom, or drives it away from it self, and so by consequence makes the Wine clear and transparent. But as concerning what means the Tartarized (Spirit or) Essence of Wine is to be artificially prepared by, 'tis needless to repeat here, forasmuch as it is already described in divers of my Writings hitherto published, but especially in the Vegetable Work.

Besides, it is not so convenient, that every one should know, by what means the concentrated *Musts* may be prepared with water, and the Tartarized Quintessence. It is sufficient in this place, to know how the *Musts* are to be concentrated, or brought into a narrow compass, that so they may be transported and sold. Let this be the care of the Merchants to know how to use them when they have bought them. For the Brains of the Vineyard keepers are incapable of these things: Yet nevertheless, there will be some Men who will know how to make a due use of such boiled and condensed *Musts*, if they can but get them, and every one may be Master of this Affair, if he has but Coppers and Kettles, necessary for such an Operation; whereby he may make store enough of Juice. But yet every Countryman can't get such Kettles, neither will it be worth while, forasmuch as a small Portion of Wine, will not be able to quit the Coists. But whosoever bestows his Study and Moneys in exercising this Artifice, will reap thence from a great deal of Utility and Advantage. But whether he does these things, or does them nor, he neither benefits, nor injures me. 'Tis sufficient, that I have evidently demonstrated to the Vineyard Masters, by what means they may always sell their Wines, whether they be ripe, or have come short of their Maturity.

But for the better instruction of the Courteous Reader, I will compute the Charges of this Operation, and show, what gain is to be expected from the Condensation of these *Musts*.

In the first place therefore, let us buy some *Musts* in those places, in which they are thin, and are sold for a mean price, *viz.* twelve Urnes, or six Hogheads, or *Oma's*, for 2*ij* Imperials; [an Imperial is about 4 l. 6 s.] this *Must* we will condensate to the Consistency of Honey, so that there may be but one Hoghead, or *Oma* remaining. Let the Coists requisite to this Concentration (always provided you are furnished with the Copper Vessel) be valued at half a Dollar, or thereabouts; and the charge of the Wood we'll count an Imperial for. The Wine Cask which is to be filled with this condensate Juice, we will value at half an Imperial, its carriage forty Miles, we'll reckon six Imperials for: All which Charges being summed up, make nineteen Imperials and an half. And so much will be the Charges of one Hoghead, or one *Oma* of this Condensate *Must*, and its Carriage forty Miles. This *Must* now being brought into such a place where Wines are dear, you may at any time of the year, by the addition of Water, and by Fermentation, transmute into good Wine. And that one only Hoghead being the condensate Juice of six Hogheads of *Must*, will yield thee so many Hogheads of such Wine as the *Must* would have been afore its Concentration. And if thou desirest to have thy Wine stronger and nobler, than as it comes out of the Press, and than it could be afore this Condensation, you may omit the putting thereunto so much wa-

ter as it lost in the Condensation, and lessen it proportionably, that so those six may make no more than four Hogheads, and they will be the more generous; the which thou shalt far better have by this means, if *viz.* You know how thereunto to adjoin a Quintessence.

If now, that one Hoghead of Juice, which afore its Condensation was six Hogheads, doth again yield four [and no more] it must of necessity be much better, and more noble than otherwise it would have been, had it been made after a Natural manner, (*viz.* just as it came from the Press.) And by this means too, it will last the better, and may be the easier transported and sold.

So then, if in such a place as is 40 Miles distant from Wine-making Countrys, an Hoghead, or *Oma*, is sold but for twelve Imperials, and you have of six Hogheads of thin Wine, made four of better, and each of these you sell for but 12 Imperials, yet you shall have 48 Imperials, out of which subtract your 19 and 3 Charges, you shall have clear Gains 28 Imperials, and 3. But I have set a most low price on this Wine, for in such places which are about some 40 Miles from those Countrys, in which abundance of Wines grow, an Hoghead, or an *Oma*, is not usually sold at the Rate of 12, but of 24 Imperials. The gain therefore of about a Wayn-load of such a thin Wine, which haply would have corrupted with lying, and never yielded any profit, doth at the least yield above fifty Imperials.

Every one now may easily see how much Gains this Artifice of the Concentration of *Musts* doth bring. For besides this Commodity arising from this Labour, *viz.* That the *Musts* being presently sold, yield ready Money; there is this also, that the Money being again presently disburs'd, opens the way for the next years profit. The Merchant also has this benefit by this Labour, that he is not enforced to pay so much Water's carriage so long a Journey; and that he may even at his pleasure make his Wine more or less strong and efficacious; for what a deal of profit is this, for to have all the Wine of six Hogheads, carried in one Hoghead.

Besides, the Merchant doth not only gain the price of the carriage of those five Hogheads, but also is quit of the fear of the Carter's corrupting, or spoiling that Juice by the way, as is usual with them to do with Wines, drawing it out, and filling up the Vessels again with Water. This danger these Juices are not subject unto; and may be kept in great plenty in fruitful years of Wine, until you need them. For they are not wont to be corrupted, if they are but kept in pure, and well shut Vessels. By this means every Vintner may in such exceeding plentiful years, furnish himself with a great Treasure, and store of Wines, and so afterwards, when a dear year comes, reduce his Juices into Wine, and enjoy a great deal of profit.

I have to this end described this so famous an Art, that the common Vine-Masters, may have present sale for their *Musts*, and not be enforced so long to keep them, till some Carrier comes and enquires after Wine; but may presently get their Moneys, and may profit themselves by bestowing them to the use of their Family. So then, it fares not only well, which the Vine-Masters, and the Merchants, but also with all such as dwell in those places which yield no Wine, because by the benefit of this Medium (or Artifice) they may also drink Wine at a cheaper rate. For if any Honest Citizen provides himself with an whole

H h h h Hoghead;

Hoghead, or half an Hoghead of this Juice, he may turn it into stronger, and weaker Wines, and all times of the Year make new, and as yet fermenting sweet Musts, whensoever he pleaseth, and as oft as his need requires, and may by the application of Spices, or Herbs, make Aromaticall, or Phisical Wines; which thing cannot be effected without these Condensate Juices; for as much as Sweet Musts, cannot be carried by Land to any other place, for that they presently ferment, and boil up, and will either break out of the Vessels, or rend the Cask, and be lost, which (by having these Juices) is not at all to be feared. I do therefore think that I deserve exceedingly well of very many, by the faithful manifestation of this Artifice; which deed of mine, whether it be praised, or dispraised, yet will not be despised by such men as shall apprehend, and perceive the benefit and Commodity of so great an Artifice.

It remains now, that we also describe, and set afore your Eyes the Instruments and Vessels serving to this Condensation, (without which, this Concentration cannot be effected) and withal shew the manner of proceeding, which is to be thus ordered.

In the First place, provide a Copper of such a bigness as you shall judge needfull for the great, or less quantity of Juice you have; let it have a plain and even bottom, and let it have the sides about a Span high, and get it well Tinned over in the inside, and not Leaded, the which Vessel you must put in a Furnace of a fizeable bigness, and so order it, that being set in the Furnace, the Flame may come but only to the bottom, and not be able to touch the sides. The Walls of the Furnace are to be some two foot high, and must have an Iron front, or Stone Door, serving for the putting in the Wood, and regisling the Fire, by opening and shutting it. At the backside is to be an hole of such a bigness, as may suffice for making the Fire burn by the access of the Air, and for carrying away the Smoke and Flame. But it must be so ordered, as to be covered with a broad Stone, if need be, that so the fire may on such wick be registed, that the Juices may not boil over by the overmuch fire, or taste of burning. These Juices are to be so long boiled with the wood, until they begin to wax thick, and then more new Must is to be therunto added, this addition is to be so long made, and so often repeated, until the Copper be almost filled with those thick Juices. Then the holes of the Furnace that serve for giving air, are to be shut both above and below, that there may be no flame under the Copper, but the bare heat of the fire, and a sweet and gentle warmth, which will bring the Juices by a sweet decoction to the consistence of Honey, and will condense them without any adulation, inasmuch that they will become as sweet as Sugar.

These Juices, you may let out by a Pipe, or Cock placed near the bottom of the Vessel, and shutting it again, pour in more to be condensed after the same manner, until all the Musts are condensed; but you must not presently put the Condensate Juices, also as ever they come hot out of your Copper, into your Barrels; but let them run first into some wooden Vessel, and be there left so long till they are cool, then put them up in your Barrels, and shut them up tight, and you may keep them whole and found, and free from Corruption, even as long as you list: For if you should put them hot into your Barrels, and so shut them up, the Barrels would burst, or else when you open them, would (by reason of the pent-up Vapours, which can have no exhalation) break or run out.

NB. And here comes a notable Secret, which I think good to add. When the Juices have rested some two or three weeks, and be afterwards dissolved with warm water, the residue of the Tartar which would have made the wines acid, will fall down undissolved to the bottom, in the form of small and big Crystals, and being washed with common water, may be used instead of Tartar for as much as it is nothing else than a meer absolute Tartar. Now this separation of the Tartar, is of great concernment as to the Wine, for it thereby becomes much better than if those Crystals had remained dissolved with it. Nor is any thing lost by this means, for that the Tartar is of as much value as the Juices: And besides, the Wines will be by this means freed from their acidity, and rendered better and sweeter; which thing verily deserves to be esteemed of as a great and profitable Artifice; and which, many there are that will know to use it to their great profit.

Verily, he that is of so dull an Apprehension, as not to be capable of understanding these things, that are so clearly, and evidently manifested, will not be any whit the better by larger Discourses. But he that has a desire of setting about this work, will insinuate, or work himself by a farther Meditation into the inmost centrality as 'twere of this so great an Artifice, and will with a far juster mind bear with me, in that I have not so much time at present, as to use a more prolix, or larger Stile.

But if so be, any do desire to have this Artifice declared unto him, by a more clear delivery, let him read my Explication of the Appendix adjoined to my Fifth part of the Philosophical Furnaces; as also the Vegetal work, and there he shall find more such Artifices. Or if haply it concerns him, he may see in my Laboratory, the Furnaces and Coppers requisite to such a work, together with the Manual Operations.

I am even constrained briefly, and as it were by the bye, to infer thus much, that if some more than usually unskillful Men cannot understand those things which I have declared concerning the three Principles, viz. That all Wine must needs consist of the same, to wit, Salt, Water, and Spirit; I dare boldly and confidently avers, that he who knows how to conjoin (according to art) these three Principles, may every where make good Wine.

NB. But yet I would not have such an one persuade himself that he can do any good, if he mixeth Tartar, Water, and Spirit of Wine together, no, no, that is not the way for him to be Master of his desire. There are far other-wise Manual Operations, requisite to this Artifice, and such as I think it inexpedient to manifest in this place. Let every one be content with the things at present shewn him, haply God will sometime or other bestow (on him) better.

CHAP. II.

Treateth of Corn: Shewing what means it is to be Concentred, and Condensated by, so as to be Exported in great Quantities into other Countries, whereby both Gain and Moneys may be thereof made.

I Have instructed you in the foregoing Chapter, after what manner such Wines as are of a mean price,

price, may by the help of Concentration be conveniently transported out of one Country into others more remote, where no Wines grow, and produce good profit. The which Artifice may be of most great benefit to the Inhabitants of such Countries as abound in Wine, and want sometimes Chapmen or Merchants for the same.

'Tis very well known to every one, that in most places of Germany (but especially in Franconia, and in the other Countries adjoining) Corn is so exceedingly plenty, and of so vile a price, that the Inhabitants know not what to do therewith; and for that reason it lies and rots in their Barns and Granaries, the exceeding abundance thereof either hindring the sale of the same, or the great costs and charges of Carriage hinder the Transportation of it into the lower Countries of Germany, where 'tis dear enough.

Hence comes it to pass, that the miserable Inhabitants have indeed Wine and Corn enough, but want Moneys to pay the Tributes due to the Magistrate; so that tho' they have such plenty of the Divine Gifts, and so much Riches, yet for all that they are in great penury and want, in that they cannot sell off so much as to pay their Family's expence, viz. Men-servants and Maid-servants wages, or so much as to sustain them. Verily, this is a punishment from the hand of God, and a singular one too, by which he corrects us ungrateful men. In time of the Wars, when a huge Scarcity pinched the Inhabitants of Germany, then the common outcry went up to Heaven, and promised largely an amendment of life; but when the War was over, and all quiet, and a most wish-for Peace returning, then all men generally became worse, and more wicked, tho' the goodness and bounty of God had bestowed on them such a great plenty of things so exceeding necessary: And now such great Fulness being enjoyed, they now gape after Money too, and murmur against God, as the Israelites did, who loathing, as 'twere, the plentiful abundance of things necessary, murmured at Moses.

The reason why Corn is so exceeding plenty, is this: After the making of Peace, and sending away the Soldiers, many Commanders being weary of warfare, and abounding with Money and Horses, bought (or rather squeeze'd out) of the poor Inhabitants, every where destitute of Money, most notable Farms, for a very mean price, and did set themselves with the utmost of their Industry to till the Earth, which had lain fallow a long time; which Lands became so fruitful that it even amazed all men. The poor Inhabitants too, who now had gotten a little Money, they also set their hands to the Plough, and used even the utmost of their endeavours in the tillage of the Earth: From hence it came to pass, that they were so furnished with such a vast deal of Corn in a few years space, that they knew not at all what to do therewith. As for carrying it into far distant Countries, the troublesome and charges of the Carriage were too great an hindrance: To lay it up in the Granaries, that the Air will not suller them to do, tho' in the time of Joseph such a thing was done in Egypt, where the Air being Nitrous, dry, and not so easily subject to corrupting, as ours is, preferred the Corn from Corruption.

What I have here written, hath proceeded forth from a good mind and sincere intention, and I hope 'twill do more good than hurt. I know that the eyes of many will be opened to see what a Babylonish Confusion the present World is in; I pray God to be an helper to the Good, and to be a reducer of the Wicked from the course of their Impiety, into the Right way.

The Process of Concentrating Corn is this:

IN the first place, you are to make a Malt of your Barly, Wheat, Oats, Spelt, or any other kind of Grain or Corn, the which dry either in the Sun or in the Air, or else in an Oven heated a little, and not to be scorched and parched as it were after the Brewers custom; for so the sharp fume of the wood would stick thereunto, and make it black and bitter, and it may easily be conjectured, that there would be no good come of it, for by this means the smoak of the wood would stick on to the Corn and the Sprouts it has thrust forth, and are moistened, and so would make the Ale that is boil'd therewith unwholesome, and of an ungrateful bitter favour: But now such Malt as is dried in the Air, Sun, or in a warm Stove or Oven, has no such ungrateful taste as comes from the smoak of the wood, but remains sweet and pleasant.

NB. Else you may do thus; The Corn, after it hath sprouted and hath been thrown abroad on some Floor, open to the air, and thereby been a little freed of some of its moisture, may be dried purely and quickly too in the Brewers great Coppers, in which they are wont to boil their Ale or Beer, provided it be continually stirred about with some wooden stick without ceasing, that it may be all over hot, and so become dry. But yet you must have a care that your fire be not too strong under your Copper wherein you dry your Malt, and so burn the Corn, and make it taste untowardly; this done, the dried Malt is to be ground as other Malt which is used to make Ale which is wont to be, but yet so, that it be not too finely ground nor too grossly; for if it be too gross, and the Grains be unbroken, the water cannot sufficiently get out the Virtues and Juice in the boiling, but that the best part will remain in the boiled Grains, and so be thrown away on the Beasts in their nutriment; but if it be ground too small, it will run into heaps, and hinder the straining out of the Ale; therefore a mean is to be observed, and care taken that no error be committed, by either excess or defect. The Malt being on this wise prepared, every one may boil his Ale according to his custom, and so much thereof as his Vessels, Coppers, and Coolers will admit of: Some do pour boiling water on their Malt, and mix them both by stirring them well together, and then let them settle for some time that the water may take into it self the strength of the same; then they draw out that water by a Tap, and pour on more, and repeat the Infusions so often, until the water can get out no more sweetness, and there remain nothing but the insipid Husks, the which are nourishment for Cattel.

NB. Other some that have no Vessels to extract the Virtue out of the Malt in by boiling water, do put the prepared Malt in wooden Vessels or Tubs, and pour thereon warm water or cold, and stir it very well about, and leave it so for some hours, that the Malt may be macerated; then do they put it in a Copper, and pour thereunto so much water as may keep the Malt from burning to in the boiling; and having boiled it for half an hour, they pour it out upon a bed of straw, fitted for that purpose, and placed over a Cooler, and so strain the Ale: This Labour of pouring on, boiling, and straining, is so oft repeated, till the water sucks no more sweetness out of the malt. This manner of boiling Ale is used by those only who want store of Vessels, and pretty large ones: The former way is not only better and more commodious, but likewise more fit for the boiling of a greater quantity of Ale.

NB. This

NB. This is to be observed in this place, when the best and first Juice or Extraction is drawn out of the Vessel by a Tap, and fresh boiling water poured a second time on the malt in the Copper, and again drawn off by the Tap, those two waters in which the chiefest Virtue of the malt is, may be boiled and thickened by little and little in a plain or flat Copper. The third and fourth pouring on are indeed as yet good, but yet not fat enough, and seeing they are not very strong, are not worth the boiling away, for they won't quit the coals of the Fire, and therefore are to be applied to some other uses. Now when a man is about this work, he may so order his boilings, as to have several of them one after another; and then those pourings on, *viz.* the second and third, remaining of the first course of boiling may be poured on the second course of boiling, in the stead of bare water: And so is to be handled, that always the first and second pouring on (and which contain in them the chiefest Virtues of the malt) may be boiled to the consistency of Honey in a Copper made for that purpose, of Evaporation; and the third and fourth pouring on may be always kept for the next following course of boiling, and be poured on the malt in the room of bare water, and so are to be condensed by evaporation in a Copper, as the first and second pouring on were done withal in the first course of the boiling; and so always the 3^d. and 4th. pouring on of the former course of boiling, is to be the first and second in the next following course of boiling; and this way of proceeding draws out of the malt its best and chiefest Virtues, and lessens the charge of the boiling: For the Coals would be far greater, if the third and fourth pouring on were to be boiled off *per se*.

NB. The Coppers and Pans necessary for the thus reducing these extracted Juices to the consistency of Honey, are already described, where mention is made of the Concentration of Wines. He that can't well enough understand me, may take the pains to come and see my Furnaces, Coppers, and other Instruments appertaining to this work; as likewise the manual Operation, for I cannot help him any other way. And as for a larger description of these things, my time will not permit me at this instant to make it. The Juices being condensed, are to be drawn out of the Copper by a Tap fastened therein, or laved out, and being cool, put them up in Barrels, and shut them up tight, that the external air may not get thereinto; for thus may you keep them uncorrupt, even as long as you please.

NB. In your boiling them you must be very diligent that the Juices be not burnt to, by the overmuchness of your Fire, or that by being heat too hot, they boil not over; all which may be prevented by Registers (as the *Chymists* call them) destinated for the regulating of the Fire. This is a most commodious way of extracting the Virtues out of Corn, and of reducing them into a narrow room, the which if you order according to Art, that nothing of your Juices be spilt or lost, 8 Barrels of Malt will yield you one full of Juice, and which contains all the Virtues that were in those eight Barrels; the residue serves to fatten Beasts withal.

NB. He who knows how to convert those remains to his use, in another kind of way will do better, and extract thereout of so much as he is constrained to lay out in buying his Corn, inasmuch that he can have his Juices as it were even *gratis*. But of these things more hereafter.

As touching these Juices, they comprehend in them the whole Virtue of the Corn, out of which you may

when you please boil Ale, make Adult or Brandy-wine or bake spiced Cakes; for if it be used to them instead of Honey, it makes them much the sweeter. These Juices therefore are to be prepared in those places in which Corn is sold at a very mean rate, and which cannot be exported to foreign parts, and is there in such great plenty, as that the Country-men know not what to do therewith, but there it lies in great Stacks and rots. Farther, they are yet prepared with greater benefit and more gain where the plenty and cheapness of wood is, the which yields no small increase and addition to the Gains.

But that the nature and condition of this Labour may be the better understood, the following Computation will shew. Suppose I take 8 Barrels full of Corn and bring them into Malt, then boil it into Ale after the aforesaid way, and condense it into a Juice, where-withal I fill one Barrel: This one Barrel now is far more commodious to be carried into foreign places either by Waggon or by Ship, than those 8 Barrels, and will bring me double or treble the profit that 8 *Medimni* (a Measure containing some six bushels, or the eight bushels) of Corn. Why? because the greatest labour is already over, and there remains but very little to boil the Ale out of the Juice, as the following Example will demonstrate.

I buy me eight barrels in that place where Corn and Wood are to be had at a mean rate, and there passeth some River or other by the place, as the *Moenne* in *Franconia*, *Nicer* in *Suevia*, *Vismigis* in *Hassia*, and the Dukedome of *Brunswick*, *Albis* in *Saxony* and *Misnia*; for in all these places there is abundance of Corn, and store of Wood, and the price of each, may be enough in confidence. If now one *Medimnis* (or six bushels) of Corn be esteemed at the price of one Imperial, eight *Medimni* will yield eight Imperials; the Wood will cost one Imperial, the Labour one Florin: The juice out of the 8 barrels of Corn may be put in a Fir-Cask, as they use to do with Honey, that so in paying the carriage, it may not be accounted for Wine or Ale, but some dry Goods, and so valued by the hundred, as other dry Wares are priced; so then the Barrel will cost the Carriage by Water to some of the Maritime or Sea-coast Cities, two Florins. Now if we sum up all these Expences upon the Corn, Carriage, Fire, and Labour, they come to 12 Florins or 8 Imperials. But now, out of that one Barrel of Juice there may be made eight Barrels of the best Ale, and if you will have it somewhat smaller, then 'twill make 10 or 12, according as you boil your Ale to a stronger or weaker degree. However, this is certain, that one Barrel of Corn will yield more than a Barrel of good Ale; so that out of one Barrel of Corn may be made one and an half of strong Ale. Now then, if one of those Barrels of Ale yield three Imperials, the eight Barrels, which cost the buying, and reducing into one Barrel, and the transporting it, eight Imperials, may there be sold for 24 Imperials; from which the eight being subtracted, the remainder of the Gains is 16 Imperials, which verily is enough upon those 8 Barrels.

But put case the Corn were dearer, and the Carriage of the Juices to those places did cost more, and that those 8 Barrels of Corn, or one Barrel of Juice, did yield (besides all the costs) only 8 Imperials profit, yet would this be profit enough, and may well content a Man. I forbear to mention the other benefits and profits arising over and above besides this Gains; for by this kind of way is saved and made vendible that Corn which would else be spoiled: Besides in a plentiful time the mean-priced Corn may be bought up,

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concentrated and kept till a scarcity come. Nor is there any cause of fear that it will be devoured by the Mice and Rats, or be spoiled with lying, or wax mouldy, or be any other way corrupted.

Nay more, it occupies less room than the Corn would; for where one Barrel of Juice lies, there should have lain eight Barrels of Corn.

Besides, the Magistrates and Subjects may by this means reap much profit and help. The Magistrate may be satisfied by taking Corn of the Inhabitants instead of tribute. The Subjects may by the benefit of this Medium satisfy the Magistrate, and there will not need the selling his Cattle, or Sheep in the Fold, or to borrow Money upon use, and to give his Wife and Children for pledges. For there is requisite no other labour than that the Magistrate appoint a place to boil his Ale, in which the Corn may be malted, boiled and thickned into Juices. As for Wood, that he has himself and needs not lay out a farthing upon that. So now, by this means may a Country be brought to that degree of happiness as never to want Money, Corn, or any other necessary things. For where the Juices can be but brought to the Sea-towns many thousand Barrels full may be sold to those Magistrates and Merchants which send their Ships into the *East* and *West-Indies*; in which Countries may be made good Ale at any time of the Year, even in the midst of Summer, or in the Dog-days themselves, if you have but Hops and Water at hand; the which is far better and more profitable.

For in the room of this one Barrel of Juice, there must have been stowed 8 Barrels, and yet that sometimes turns four too, and is spoiled, the which never betides these Juices. Now such Ale prepared of the Juices by means of Hops and Water are much wholmer than the common Ales are, because that the Fire hath consumed all the Crudities; in the boiling of the Juices or hath corrected them, and this every one will readily believe or assent unto.

Nay more, these Juices may (and that with very great profit too) be sent into those places wherein (by reason of the abundance of People there) Corn and Ale is much esteemed, as in *Holland*, and the bordering Countries. If the Ale-brewers could but once get such Juices, without doubt they would not be at the costs to brew it out of the Corn, for they would not need so much time to brew in, nor such Coppers, nor so many Mens help, all which they must necessarily have in the common way of brewing. In these Juices, there is much sparing of Fuel, (the which makes the common way of brewing Ale, more costly,) and of Men's labour which doth likewise prove chargeable. Nor are we silently to pass over that great benefit which they have hereby, for that good Ale and such as will not sour may be made without any danger even in the midst of the Dog-days. Every one knows what it is to brew Ale (then,) and that the brewing is at other times sufficiently troublesome, *viz.* so to order it as to prevent the danger of souring. But now this brewing (that I mention) is void of all this kind of fear of souring; whereas the usual kind of brewings do for the most part (in the Summer season) become sour either in the Straining it through the Grains, or by standing in the Coolers; but these labours are in our brewing already dispatched, and that in those places where the charges of Labourers, Wood, and Room fit for boiling it in, are not so great.

This work therefore is of mighty profit both to the buyer and seller: For the seller can afford his Corn at a reasonable rate. And the buyer need not be at any

other charges in brewing good and wholesome Ale at any time of the Year save only the hire of one man that may prepare or fit the Juices, and Hops, and Water for the boiling, and set it a-working or fermenting and pour it into the Vessels. Whereas on the contrary in the common brewing of Ale there needs many mens help, huge Coppers, and wooden Flats and a great deal of room to brew in, and store of Fire which is sufficiently dear in some Countries; all which are avoided in the brewing with the Juices. Do but consider I pray what a notable and profitable thing this would be in great Cities, and especially in those places where Houses, Fuel, and Mens labour are very dear, if such kinds of Juices were set to sale; that so every Master of a Family might buy up some Barrels of this Juice, and dissolve them at his own home with Water and Hops, in a small Copper according to his pleasure, and make the said Juices into Ale, as fat or as lean or small; and as bitter or as sweet as he listeth; and then put it up in his own purified and well cleaned Vessels, and he and his, drink thereof all the whole year; and if need be, might make either Physick-drink or Spiced-ale. And would it not be much better than the buying such Ales of the *Brewers*, which are sometimes either too new or too stale, and oftentimes acid, impure, not well boiled, and stinking, and instead of Hops have Aloes, Xanthium or Burr, Henebane and such like Herbs put in them. For in some places, the *Brewers* use such kinds of Herbs and the like hurtful things, instead of Hops, to make their Ale bitter, and to save a few charges in the making their drink. Therefore all such as use to drink of such kind of Beer are never wont to be in complete health; and especially in watery and moist places they are for the most part afflicted with the Scurvy, Melancholly, &c. which is the usual fruits of such kind of Drinks, for they obstruct the internal parts of the body and the principal members, and stir up such Diseases. But our Ales that are made of the Juices and good Hops do not only not stir up such Distempers, but do even (by their purity and clearness) resist them, and preserve men from them; but especially if such Juices be made of such Malt as has not a smatch of the smoke of Wood, but is dried in the Air, and which are so handled in the fermentation or working of them as that all the defilements settle to the bottom; for then will you have such Ale, as doth both in wholesomeness and sweetness exceed such Wines as are infected with, or have a tang of, *Sulphur*, or that grow in a soil abounding with Chalk. They dull nor the head, they do not cause windiness, they puff not up the body after the manner of other Ale; they do not stop the Urine but provoke it, and keep the Belly soluble: They are Medicinal without the addition of Physical Herbs, are sweet and wholesome, and of an excellent taste, and such as the like of them cannot be made without this medium or way.

Such Ales deserve a peculiar praise, and many would there be who would drink of Ales often, could they but get such: and would leave off the drinking troubled, unwholome, and sulphured Wines. For my own part I will make use of such kind of Ale, and Wine, in my own house for the sustaining of mine own Family.

I could mention much more concerning such Ales if the time would permit me, but I have spoken enough already. And as for what remains unwritten here, may be gotten out of, (or understood by) the things here described. I question not but that good (or provident) Masters of Families will set about this

business of preparing these Juices, and of sending them into such places where they may be sold to Ships that are bound for far Countries, and so mightily enrich those Countries with store of Money that abound with Corn.

Besides, the Brewers of Ale or Beer that are in great Cities will not disdain such an excellent Art, but will themselves buy such Juices at a considerable rate.

Princes, Nobles, and great Cities, will also provide (or buy up) great quantities of such Juices, and lay them up in their Forts and Castles, and in their Store-houses as a good Treasure, that so they may have it to use in time of necessity. Nor will good (or provident) Householders neglect to furnish themselves therewith, that so they may have wherewithal to sustain them and theirs in a time of scarcity.

In the time of Wars, eminent Captains and other Military chieftains will take care to have them, and carry them into their strong holds, and there loosen them (or put a proportionable quantity of Water to them) and turn them into good Ale; as for Water, there's to be found (enough) of that every where, and so need not store up that, and as for Hops that is scarce enough to be bought.

So then, there will be a notable benefit by this Artifice to strong Holds and Castles, and such fenced Places as fear a Siege. Briefly, Words cannot express the benefit and profit which will redound to all places, by these Juices, in times both of Peace and War.

Therefore every Magistrate who has a care of his Subjects health and preservation, will worthily and with his utmost diligence carefully provide for the having such prepared Juices, that so in times of necessity they may be at hand for use.

But now, some may object and say; I perceive and well see that this Artifice is good and profitable, but 'tis not to cause a matter for every one to purchase himself Coppers requisite for this work? To such I answer. 'Tis not so useful that every one should furnish himself with such (utensils); if there be in every City but one man only that is employed thereabouts, who may buy off his Neighbours Corn and pay them their Money for the same, 'tis sufficient. And if others also betake themselves thereunto, there will be the more Money gotten, and the Country made the richer; neither is any reason to fear or doubt, but that, if he shall bring eight thousand Barrels of Corn condensed into a thousand Barrels of Juice into the Cities on the Sea coast, he will sell it off for ready money. Will a thousand Barrels (think you) be sufficient (or be a drug) in some populous City wherein are daily drunk some thousands of barrels of Ale? Verily he that shall expose to sale in such a like City many thousand Barrels, would not stay long there, but would be laden (or furnished) with ready Money for the same, by those who knew the Art of making Ale with such Juices.

I do verily believe that it would be altogether much better to sell Corn after such a manner, and so to have profit by it, than let it perish with lying; which is a great sin before God, and a shameful disgraceful thing before Men.

But further, it may be objected and said. If this Artifice of making Ale were set up in those places, in which there is wont to be a certain Tribute paid the Magistrates for every Barrel (of Ale,) it would not be allowed, because by this means the Tribute or Customs due to the Magistrates would be diminished. This inconvenience is easily prevented, if the Magi-

strate impose the same Tribute of Ale on the Juices. For by this means the Tributes or Customs would not be at all diminished, but be equally as profitable upon the Juices, as upon Ale. The like may be done with the condensate Juices of Wine.

So then 'tis clearly evident, that there cannot possibly arise any detriment from these Juices, but rather infinite profits and commodity. And therefore every Magistrate should seriously cause his Subjects to make these kind of Juices of such Corn as they cannot sell, and instead of spoiling it get riches by it. Certainly this would be far better, and far more profitable for such Subjects as are very poor and go miserably tattered and naked, and have nothing to help themselves (of which fort there are not a few.) Verily there would be no want of any thing, but the Subjects as well as their Rulers would have enough: And for this reason have I willingly undergone this trouble and this labour in manifesting and laying open this Artifice.

And although I am not to expect any reward from any body for manifesting a thing of so much concernment (for this is an unthankful World) yet have I obeyed the will of God and have out of a Christian love benefited my Neighbour, and in this well-doing do I rest, no ways doubting but that God the rewarder of every good (action) will recompense in another place, this my well-doing which I bestow upon the World.

Farther, I can in a kind of a Prophetic manner predict, that if regard be had of this my wholesome Doctrine and Admonition, many Countries will in a very short time recover their former happiness, and both the highest and lowest will live in a prosperous condition; but especially those who first set upon this business afore it becomes common, will get great riches. Now then, whosoever they be that by the help and benefit of this way shall get the blessing of God, let them not forget the poor, but bestow that blessing on the cherrishing and comforting poor Orphans and Widows, to the Honour of God. For the Treasures and Riches in this temporal Life cannot be better laid out, and laid up, than in distributing them amongst the poor. For by that means there's no fear of being spoiled of them by Thieves and Robbers: And more, in the Life to come, they shall be recompensed with a ten-fold reward.

CHAP. III.

Of the Concentration of Vegetables.

WE have already taught in the two foregoing Chapters by what means Wine and Corn are to be by an Artificial condensation reduced into a narrow compass, and brought to be a gainful Merchandise. It now remains to shew the way conducing to a condensation of the Virtues lying hid in Herbs, Bushes, Shrubs, and Trees: (which Vegetables do most plentifully abound in moist places and yield no profit) that so even out of them as well as from Wine and Corn may be reaped a very great profit. No body is ignorant of this, viz. That there is nothing more vile and of less esteem than the Grass (or Herbs) of the Field, and Briars or Bushes, and Shrubs, and lofty Trees too, especially when being at a good distance from Men's dwellings they cannot be applied to any use, and upon this account are they not valued at all,

nor by reason of their distance profitable to any, but there they grow and perish in those vast woods and desert places. And this is to be seen in those most huge Woods of Germany, such as are the *Ingrionies*, the Wood *Ardome*, the *Otroumanc*, *Herciman*, *Semans*, and *Bhemian Woods*, and the woods of other Countries, in which woods there rots and is spoiled above tentimes more wood than men make use of.

Now no body hath hitherto known what use to put those Woods unto; such Woods as are not too far off from Cities or Villages, do Men make use of for building, for firing, for boiling, or brewing, and for baking, and other occasions, so that the Wood which is daily used, and every year fetch'd from the bordering Woods or Forests, is thereby saved from rotting and being spoiled.

But as for such wood as is in Mountains and Woods situated far off from mens dwellings, and which are not frequented, that is not of any use at all, they are dens and lurking places for cruel Beasts, as Bears and Wolves; which said wild beasts do annoy and hinder other profitable ones, as Stags, Does, Boars, Hogs, Sheep, &c. from feeding on the wild Fruits of such places. But who is there will amend it, and bring such places to a due or good use? What! should such vast Woods, which are the receptacle of those cruel wild Beasts be cut down and lie a rotting, or be consumed by Fire, so to destroy those wild beasts? Surely no body will attempt it, as fearing the toilfulness requisite hereunto: And besides, so much as no other profit is to be thereby expected, save an extirpation of those wild beasts, there's no body will take that Task upon him. Nor is it a thing so behovfull to Fire, and burn down such huge Woods, as we read in History, that some have heretofore done, viz. most great Woods have been burnt, merely to destroy Insects and other hurtful, wild, and ravenous beasts. There is a hazard run in so doing, for such a Fire may spread wider, and do a great deal of mischief.

There are such Examples which may be produced, which witness how that Fire being put to Heaths, have (by burning thereof) crept into the bordering Woods and destroyed them, and mightily injured the neighbouring Inhabitants: And therefore 'tis not so advised a Work to consume Woods by Fire; and to cut them down, that so they may lie and rot, and be thereby rooted out, cannot be done, because of the great costs thereto requisite.

So that such places must of necessity even remain the Receptacles of hurtful Beasts and Thieves; for all eie that sometimes the Glass-makers do in suchlike places build their Furnaces or Glass-houses, yet they fall far short of consuming so much Wood by their making of glasses, for those Woods are scarce the thinner or lesser for that: Tho' they spend daily in every such Glass-house twenty loads, yet such a vast quantity as that is, will not decrease. Besides, the Glass-men do not use all the wood without making any difference, but make choice of the straightest and smoothest wood, such as they may best and easiest cleave: As for shrubs and knotty Oaks and Beech, those they touch not. So then the best Trees only are used about their Glass Works, and the brushy woods, as *Briars*, *Thorns*, &c. and which are the most commodious hiding places for the wild Beasts, are unmeddled withal, as being unprofitable for the Glass-makers: Nay, they let most curious arms or branches of *Beech* lie a rotting, and make use only of the body of the Trees. Moreover, in such Woods as are far off, the Glass-makers build no Houses, but do erect them as near as possible they

can, to such places as are inhabited, because they must of necessity have commerce with men.

Farther, 'tis not a little wood that is spent in the Mines about Metals, especially in such Mines where Iron is molten; but what we said but now touching the Glassmen, the same is to be observed here; for such metal-melting Houses are never erected on the high Mountains, or are built in far remote Woods, because they must have the assistance of Men, and water to drive their bellows-mills, and besides the place must be such, as that all Necessaries may be brought them in Wag-gons, and their Iron transported into the Cities or Towns. Nor do the Metal-melters indifferently use any wood they meet with; nor make they their Charcoals of every kind of wood, but leave the shrub and bushy woods as unfit for coaling. And therefore those great and vast woods, tho' there be Glass-houses and Metal-melting-shops in many places, do remain untouched, because no body knows the use of them.

But now, so far as I have all my life-time most accurately search'd by a diligent observation into the wonders of God, and have not spared any labour or costs about the secret wonders of Nature, and have learned from Nature her self, my instructing Mitris, that God being a true and just Lord over his Family, did neither do, make, or create ought without certain and just causes, which notwithstanding is not regarded by the most part of us men, who imitate the irrational beasts, and always live without the knowledge of God and of His Works. Verily, we have no colour of Reason at all for it, not considering that men were created and appointed by God for another-gift end, than the brute beasts, which are void of all Reason; and we regard not the Truth of that old Saying, *God and Nature never make any thing in vain*.

So then, whereas this is a Truth (as assuredly it is) certainly we may see that these huge Woods were not in vain made, but that they have some benefit (for so they have) viz. a most great Treasure for such who know it, and know how to use it. Which I will therefore shew, as clear as the Noon-day Sun, and will so set it afore the eyes of the blind and darksome world, that the Deriders and Contemners of natural Philosophy, such as is to be Learned only by the fire, and not out of *Aristotle*, may be even enforced, will they, will they to confess and grant that the Fire is the true Teacher and Master of natural Arts, and so will be; for whosoever they be that are ignorant as to the Fire, and that know not its wonderful efficacy, tho' they may be most skillful Proficients in foreign Tongues or Languages (which in the more-secret Philosophy makes not at all to any purpose), yet nevertheless they will not be able to accomplish any the least matter in things of so great a moment: I do therefore say, that such men as are skilled in natural things, are not of right to be contemned, or secretly back-bitten by those who say, Believe not such a man that hath not attained the empty vain Title of a Doctor in the Universities. I confess ingeniously, that I never frequented the Universities, nor ever had a mind so to do; for should I have so done, haply I should never have arrived to that knowledge of Nature, which I mention without boasting, as I now possess; neither doth it ever repent me, that I have put my hands to the Coals, and have by the help of them penetrated into the knowledge of the Secrets of Nature; I do not desire to disturb any one in this way, or to thrust any out of their places; I never was willing to live on the costs of great men, but have with my own hands gotten me my Food and Raiment, always advisedly thinking on that most known Verse;

— *Alcibiades*

Unskilful, these things may seem wonderful and incredible, because such a kind of dunging Land is not every where in use. He that is incredulous, let him go to *Cleop* on the *Rhine*, and there he'll find that I have spoken nothing but the truth. All these things do the Gardiners make use of according to their ancient custom, for from their Predecessors learned they these Secrets. Nor know they what other reason to allege for their doing this, but only tell you, that they serve exceeding well to enrich their Fields and Vineyards.

But I do assuredly affirm, that 'tis the Nitre that is hidden in these things, performs this effect: There is therefore far more abundance of Salt-petre in the Superfluities (as Nails, Horns, Hair, &c.) than in their Excrements, or Dung. And I thus prove it.

First. Because they will give you for one Sack full of the Shavings of Horns, half an Imperial, which is as much as will buy four or five such sacks full of Cow, or Sheeps dung.

Secondly, They will give the Tanners, or Carriers, above an Imperial for one Cart-load of the Shavings of the Hides, whereas with the same Money they may buy three or four Load of dung. Rags are sold for a quarter of an Imperial. Were they not virtuous or effectual, why should they be so dear? This here spoken, we have proved to be, by the customary practice of the common men only, as Husbandmen and Gardiners. Were it lawful for me to reveal somewhat to the purpose, I could teach how to extract out of every hundred weight of Bones, in Beasts, B'rds, and Fishes, ten pound of Salt-petre. But this is not to be divulged.

Now it remains in the next place, to confirm, that Nitre does not only lie hidden most plentifully in the Vegetable and Animal Subjects, but that it may be digged, or gotten out, and prepar'd of Stones, Rocks, Cliffs, Hollows of Mountains, and out of the plain Field in a very many other places; and this is undeniable, for 'tis evidently known, and if need were, I could, for witness sake, make mention of many such Testimonies. He that is desirous of knowing more, as touching this salt of the Earth, let him peruse the ancient Philosophers. But forasmuch, as every one hath not those Books at hand, and that many Men cannot understand them, I will for Amplifications sake add yet one demonstration, to shew whence that Nitre ariseth, which sticks on to, or swells out of those moist and old Walls of Houses. Comes it not from the Mortar, with which the Bricks are joined together? Not only all *Stones* are fit for making Caix, or Lime of, but also all kinds of Stones, which break, or grow in the Waters, like Drops, or Pebbles: Likewise, those stony things which grow in the Sea, as Coral, the Pearl shells, or Mother of Pearl, and Shell-fish of all sorts, which being burnt, moulder in the Air, have in them plenty of Nitre, and will easily yield it forth to those who have the way of extracting it disclosed unto them. But this is not the place to mention it in, because I have determined to treat here, of only expressing the Juices of the Vegetables, concentrating them, and making them gainful or profitable.

Forasmuch as we have hitherto understood (or shewn) that Nitre or Salt-petre may be had from all things, viz. from Herbs, Wood, fourfooted Beasts and creeping Things, from Birds in the Air, and Fishes in the Water, yea from the very Elements themselves, as Earth, Water, Air, and Fire; It must needs follow that it is that so much spoken of Universal Spirit without which nothing can either be or live:

It is the begetter and destroyer of all things; in which all things are, as I have demonstrated in my *Miraculum Mundi*, out of the most ancient Philosopher *Hermes*. I therefore hope, that no body will any more doubt thereof or oppose himself with a perverse stubbornness against a truth so manifestly known. Were not the shortness of time an impediment unto me I could most easily produce more arguments and those too more pregnant. If any one is minded firmly to cleave to his own stubborn perverseness, even *Hermes* himself should be arise from the dead, would lose his Labour in teaching him; and therefore let them keep their contumacy to themselves.

We have sufficiently confirmed and that by arguments enough, that Salt-petre is an universal Subject, and every where to be found. Hence it may be easily believed that it may also be met with in woods, and that more strong, more powerful, more corporal, palpable, and visible than in any other Subject: Upon this account therefore it is to be also sought for, and drawn forth out of them too. But forasmuch as such an Extraction cannot be made afore that the Juices are prest out of the Wood, out of which Juices the Nitre is to be drawn forth, the whole Art consists in squeezing out these Juices, but yet by another kind of way than is done with Herbs. Therefore the due Presses being fitted ready, I shall be able to shew him who requesteth it at my hands (so as he does not endanger me) the way of squeezing them. For to prostrate a work of such great moment to every ones view, whereby those that are unworthy, should partake of such great Secrets, and by which a thing of so much value should be obnoxious to a common Abuse, is not verily, either necessary, profitable, or laudable. Let not any one therefore take it amiss, that I have so careful a regard of things so considerable. Let it suffice, that I have detected the thing, wherein such great Treasures have hidden themselves, which hitherto are profitable to no body, but are easily acquirable, or to be had. Do but look a little upon those most vast Woods of *Germany*, which are stored with such mighty abundance of Trees, that wood is of no account. There hath been none as yet that has converted them unto their use, save a few, who in some places make Pot-ashes of the wood they burn; and yet they have but small gains therefrom, because they can't have vent sufficient for as much as they could make by their burning the wood, nor do any use them, but Soap-boilers, and Dyers.

Besides, I never as yet saw the Man that duly attempted that Artifice, and so administered it as to get therefrom a greater gain. For sometimes they gather scarce an hundred weight of Pot-ashes out of the burning of ten or twenty great Trees, and they can hardly have above five or six Imperials for it. And now consider but the great Labour and Sweat in burning so much Wood into Ashes, and of boiling the Ashes into a black Salt, and then of making this Salt red hot in peculiar Furnaces, that it may become white, green, or blueish; all this consider'd, 'twould make a Man admire what 'tis that could stir up those that follow this work, or order it to be done, to suffer such a quantity of Trees to be burnt up, for so very little profit. But what need many words? They have the wood for nothing, and (as the Proverb runs) *The half White of the Egg, is better than the empty Shell*. Happily if they knew how to make any thing better, or more profitable out of their Wood, they would not omit so to do.

How many hundred weight of Wood, are they to burn

burn afore they have one hundred of Pot-ashes? But now if the Juices that are squeezed out of them were boiled into Salt-petre, they would get ten times the profit with far less trouble.

Let us compute the case, and suppose that out of an hundred pounds of Wood, there are squeezed forth twenty pounds of Juice, and that from these twenty pounds of Juice, you have some 4 or 5 pounds of Nitre, and that a middling Oak or Beach will load, when cleft, some ten Carts, and each load hold twenty hundred weight. Now then, one hundred yielding five pound of Nitre, a load of twenty hundred, yields an hundred pound of Nitre; the Tree that is about ten load, yields a thousand weight.

Now we'll put case that a hundred weight of Nitre yields twenty Imperials, which being ten times multiplied, makes two hundred Imperials for ten loads, or for that one Tree divided into ten loads.

But to waver to accurate a computation, and not to extend it too far, we will suppose a hundred of Wood to hold only three pound of Nitre, and a load to be about twenty hundred of Wood; this load will yield sixty pounds of Nitre, and the Tree ten loads, so there will be Six hundred pounds of Nitre. If now one hundred (of Nitre) will cost ten Imperials, that Tree will yield sixty Imperials for the six hundred pounds of Nitre. The smallness of the cost (in making it) makes the labour the more profitable; nay, if by this invention of mine, the price of Nitre should fall down, even to ten Imperials (which notwithstanding, will not so easily come to pass) yet would the gain thereby be great, yea ten times more than that which comes from the Pot-ashes. But he that knows how to use this Nitre, for the concentrating of Metals, (concerning which the three following parts of this Book shall treat) will not have any cause of fear, that this Nitre will lie on his hands and yield him no profit.

By what hath been said, the well-minded Reader will easily perceive what vast treasures are oft-times before his eyes, and through ignorance lie as yet unknown, and not used to advantage. What man knows God's end, in producing to light such great Mysteries and Secrets of Nature, in this most filthy Dregs of the World? To give thereof a Reason, we will not tire our understanding, but give most humble thanks to God for such great mysteries that he hath revealed for the comfort of many men, and will pray unto him graciously to bestow on us his fatherly blessing, to the end that we may well use such great gifts so freely bestowed.

But now if any should be of the mind that it is wholly unnecessary, that this Art should be made publickly known, because that Gun-powder is made of Salt-petre, and that by Gun-powder many Cities and most strong holds are overthrown, and nothing is to be expected therefrom, but Slaughters and Destruction: To such, I answer, That it was not for this end that I disclosed this most great and most profitable Art. that by its base abuse I might help on these horrid Calamities; but my aims have been chiefly at this, if haply any new Foreign Enemies should invade our most dear Country (which is a danger we seem not far off from) we might be able to receive them with like Arms or VVeapons, and by a just defence drive away such a Calamity.

And withal, that those most thick and vast Woods being depouled of their thicknes, may not for the time to come be a shelter for Thieves and Robbers, as likewise for wild beasts, all which oftentimes do much mischief.

And farther, That many thousands of Men may get their Food and Rayment more Commodiously and more easily, and may make good Gold and Silver from the unprofitable VWood. For by means of this Art, thousands of moneys may be gotten in our *German* Countries, without any hurt to our Neighbour. Nor is it needful to cut down any great Tree, for the superfluous Branches or Loppings, and the shrubby briary Underwood which is all about the Trees, and doth chiefly afford a passage to the Stags, and hiding places to other hurtful Creatures, will be sufficient for this kind of use or employment.

The other Trees that grow up aloft may be preserved to build Houses withal, which may be employed about Hunting: And besides, when the Trees are freed from that thicknes, and have thereby a free access of Air, they will the more easily dilate their Boughs, and grow up taller. And then too, those wild Beasts that are profitable, will (when such vast deal of Underwood or shrubbiness is taken away) meet with fatter pasture, and with more plenty of Grass, and escape by having a freer Course from the pursuing VVooves, which now they are letted from by those most thick Shrubs and Bushes. But yet if so be that in such places in which is such a deal of VWood, and to no man useful; a good part even of the great Trees should likewise be cut down, and used about this Artifice of ours; yet notwithstanding there would not arise to the Possessors thereof any loss, but much Profit; and when all's done, there would be yet remaining a huge multitude of Trees. Consider I pray those most spacious V Woods the *Ardenne*, *Ostwick*, *Semane*, and *Bohemian* V Woods, and many others which the Countries in *Germany* are clothed (or environed) with.

Can it be imagined, that they can at all be lessened by the Glass Furnaces, or the melting of Minerals and Metals.

These places that are one year bared by cutting down the Trees, you shall see in few years covered over again, by the benefit of nature, with new Trees; so that it cannot possibly be, that though even a very great many Preles should be used to press the Juices out; such a vast immensity of Woods should be exhausted, and make any sensible diminution of the Wood.

But now, if any one shall believe these writings of mine, and shall after the afore-mentioned way, see about the Concentration of Wine, or Corn, or Wood; I do faithfully affirm unto him, that I have in this Book openly propounded the very naked Truth, without any dissimulation, and have not omitted any thing save the revealing of the Presses, which for certain causes I conceal.

And therefore I certify every one, that I will not as yet divulge this most wonderful secret, of thus-boiling Nitre out of the Juices of Wood, or else I would have described the Press too. Besides, though a man should even see the Press, and know how to make it, and were ignorant of the purification and concentration of the Juices, he would not bring the Art to effect; so that, without my instruction, the work cannot so easily be made publickly known. And though this seems to be a thing so mean, yet this squeezing out of the Juices of Wood, is far beyond (or richer) than the operations on VVine or Corn. But I doubt not but that many, well considering of this unheard of, and very gainful Artifice, will begin to think whether or no good Nitre may not likewise be gotten out of other Subjects easie to come by. Now then I must needs think needs instruct these.

The common Fossile Salt and Sea Salt may by the benefit of this Art, be also turned into Natural Nitre; but I judge it needless to speak more of this, for as much as that which I have already mentioned concerning the Wood seems abundantly enough. Briefly, God cloth in all places set before our eyes His Omnipotency, where he gives not V Wood, there vouchsafes He Stones and Bones, out of which Nitre may as well be extracted, by those that are skill'd in this Art, as it may out of other things. And where Fire is wanting, there is V Water however. But I know that it is certain, and past all doubt, that by the certain experience of Art, plenty of good Nitre may be made out of Sea Water.

Now if any shall object and say; Thou affirmest that Nitre is to be found in all places of the V World, but especially in Wood and Stones; but yet, that there are many places which have neither V Wood or Stones, & have only a Marly Moorish Soil, which brings forth Grafs only: By what means can Nitre be there, or in what things, or what places should it be sought for, thinkst thou there?

I answer; I have already, in what hath been said afore, confirmed, that Nitre may be drawn in large quantity even out of Grafs; but verily there's no such need here of foding, to rob the beasts of their food, and to use the Grafs about Nitre-making: For the Cheese and Butter that come from the Grafs, will easily yield more than the Nitre that's made thereof; would; God deals not to unjustly or unwillfully with the Creatures as to give his blessings with a liberal hand to one, and take the same away from another: No, no; the Treasure of his Riches is inexhaustible, and he gives his Creatures largely to partake of them; nor doth that axiome (or maxime) which is so very usual in this perverse World, prevail at all with him, viz. The fall of one is the rise of another; but his will is, that all should have their necessaries abundantly supplied, that every one should have enough, and that every thing should come to perfection. Therefore it is not at all necessary, that Nitre should be extracted out of the Food which the Beasts live on, because it may easily be extracted out of other Subjects which bring not any profit to Man or Beast, and this in great quantity too. For in such plain low Countries and moist watery grounds, where you shall not meet with either Mountains or Vallies, or Stones, or Wood: The most gracious God hath, like a provident and wise householder provided for the inhabitants, giving them a certain kind of earth inlaid with many Roots and Fibers that grow therein, which the Dutch call *Corf*, we *Turf*s, the which they use instead of Woods, to boil with, and about other necessary uses; so that they may easily be without the wood, which is yearly brought them in such vast quantity out of other Countries. Now these same Turfs contain in them the like Essential Salt as Wood does which Nitre is extracted out of.

As concerning Stones, they do not in those places shew themselves to fight (as lying deep) if you except such as are burnt (or Bricks) and which are brought hither to build houses withal, yet God hath bestowed on them a matter sufficiently apt to make Lime withal, so that they may be without, even Stones themselves. The Shell-fishes of all Sorts (serve to this work), and sometimes the raging of the Sea, drives the Fishes shells ashore by heaps, and like little hills, the which being carried by the Inhabitants into the Cities and Villages, they put them in the Lime-Kilns, and reduce them by a strong fire into good Lime, and that by means of the Turfy firing we mentioned but now; so that I do not see any reason why, in these Countries that are de-

fite of Wood and Stones, there should be found less Salt-petre than in others, in which huge quantities both of Wood and Stone are found. Nay, rather I affirm, that there is more there, than is in almost any Country of *Europe*; for do but compare the price of Turf and Wood, the Wood is dearer, the other cheaper; besides the Wood is harder to press out, and this yields its juice more easily.

So then, from all the foregoing demonstrations I absolutely conclude, that there is not any place in the whole World, wherein great quantities of Salt-petre may not be made.

And if I should say, that there is not to be found in the whole world any places in which Nitre may be easier and plentifuller made than in the low Countries of *Germany*, as *Brabant*, *Holland*, *Zealand*, *Flanders*, *Friesland*, the *Groningen Fields*, the County of *Emden*, and all those Countries which run as far as the *German* and *Baltick* Sea, in this their moorish kind of ground, verily I should not speak untruth, but if need were, I could witness it of a certainty.

But lest my Writings should remain too obscure and unknown to such as are unskilled, and that such may not overmuch torment their Brains by unnecessary Pleadings how this may be effected, I judge it altogether necessary openly to confess the Truth before every one, and say, That Nitre or Salt-petre, were but its true use known, is justly and worthily to be accounted of as the greatest Treasure of the whole world, as being a thing by the help of which, good Health, Honours, and Riches may be purchased; and this we shall confirm in the three following parts. If then that this be granted, then this also will be yielded too, that the Subject-matter out of which it is extracted, is not to be despised, but to be highly valued; and therefore ought Wood and Turf to have their due Honour given them, concerning which, I have by many Arguments affirmed, that the one of them is every where in the upper *Germany* in great plenty, and the other in the low Countries of *Germany*, (nor doth these at all come short of the others) and that both may and ought to yield Nitre. Besides, not only the bare Turf is here-to useful, but likewise the hitherto thrown-away ashes, which are every where cast out as unprofitable.

NB. They are not useful in washing, as wood-ashes, with which the Laundresses make Lyes, and being they are not, they are thrown away as good for nothing. But yet there is in them a great quantity of a certain salt, which being inverted by Art, passeth into Nitre; therefore through meer ignorance is there cast away, together with those Turfy ashes, a vast quantity of unripe Salt-petre, from whence a mighty profit might redound to those Countries, but being improvidently thrown away, is merely lost. But yet I would not have any imagine, that the Salt which is made of the Lee of Turf-ashes, is presently Salt-petre; no, for 'tis needful that the subtilty of Art be first thereto used, above such a Salt be brought to that pass, as to burn like Salt-petre: But yet care is to be taken, that that Art become not common, for then so Noble a thing, and so profitable to our Countries, will be known by Enemies as well as Friends; which to prevent, it must be warily handled, and the principal work here requisite is this, viz. That it may not be published too imprudently, as to render the ungrateful and unworthy partakers of the same, as well as the thankful and worthy ones.

By these things here spoken may every one see and gather, that God is no respecter of Kingdoms and Principalities, and provides for some better than for other some; all Men are His Creatures and Heirs of all His

Goods

Goods, if so be they be but willing, and do not stubbornly oppose and slight the Divine Grace, and do not wantonly cast it away and neglect it: Concerning which we shall speak more in the following part, touching the Concentration of Minerals.

This we must yet farther add, viz. That common Salt-Nitre is in all Coasts, in all Tracts or Continents, and in all Countries; yea, even in all those places in which there's neither Wood, nor Stones, nor Leaves, nor Grafs, nor Earth, nor any bottom of Earth: As for example; Near *Greenland*, where the Sea is said to have no bottom, where the Whales are caught, and which do greatly enrich the Merchants with their fat or oil: Did they but know, that the remaining Fleth and Bones were even yet of great use, and knew they but how to turn them into Salt-petre, they would prefer it far before their Fat, for the sake of which, so much labour and trouble is undertaken; for in the fleth of one Whale only (which as it is, is not at all profitable to any man) I dare say, that there may be found 20, 30, 40, 50, yea, sometimes 100 Centenaries, or hundreds weight of Salt-petre. And so likewise the Intrails of the dried Stock-fish that are caught in *Spain* and *Norway*, should I affirm, that they would even almost excel the Fish it self in value, I should not be deceived. I find no difficulty that might hinder me from affirming this to be agreeable to the Truth.

Do not the Salt-petre-men prefer the Nitrous Earth that's found in old burying places (if they can have it) far beyond other Nitrous Earths? And this among others, that most excellent Examiner of Metals, *Lazarus Ercker*, in his Book of examining of Metals, affirms, and gives this Earth the chiefest place. Nor is it to be wondered at, that of late in *Poland*, towards *Muscovy*, where formerly great Battels have been, and many thousands of men slain, and by reason of the multitude of them, have (after the Battel) been thrown into deep Caverns of Mountains for the easier burying them) there hath been a great quantity of Salt-petre extracted out of the Earth. Were there not gain and profit to be gotten, those men that are employed in the extracting and boiling it, would not lay out so much Money on unprofitable Ashes of Carcafs.

But to pass this by, let any one make but this Experiment: Fill some Vessel with Bulls or Ox-blood, and put it in a warm place till it putrefie and be turned as it were into Earth; then extract a Lye out of this Earth, and boil it so long, till a little skin appear on the top, then lay it by in a cold place, to shoot into Crystals, or little Stones, and these will be true Nitre.

NB. There is another and more compendious way of extracting Salt-petre out of the blood of Animals, which belongs not to this place to treat of; let us but compute the account a little. If there are yearly kill'd in some great City some ten thousand Oxen, besides Calves, Hogs, Sheep, and Goats, and the blood be cast away as unprofitable, [I now an hundred weight of blood yields some 5, 6, 7, or 8 pound, or more, of Nitre.] the question is, How many Hundreds of Salt-petre is lost? That this may be the more clearly evidenced, viz. That there is much Salt-petre in all Beasts, Fishes, and Birds, take another Experiment: Let a Beast, Bird, or Fish be laid in some warm place, where no Rain comes, to putrefie, out of the Carcafs there will come Worms; of these Worms or Maggots take about one pound, more or less, put them in a Glass with a narrow neck, stop the glass with Paper only, and set it at the Sun, but not too hot, and in a few daies the worms or maggots will be turned into water; then pour out this water into a Copper Vessel tinn'd over, clarify it with the whites of Eggs, as Vegetable juices are wont

to be clarified; then evaporate the clarified Juice, by little and little, by decoction, till it be covered over with a skin; as we have taught you in the Vegetable Juices; then let it by in a cold Cellar, and there will shoot good and natural Nitre, but especially if that Liquor shall have stood a while afore in the air.

The self-same Experiment may any one make with other Vermin that arise from Fleth or Cheese, and he shall find that even living Creatures have Salt-petre in them: so then there is nothing to be found, wherein that Universal salt of the World is not seen to be; but in some the salt doth sooner put on a Salt-petre nature, and in others it is already made Salt-petre by Nature.

Let this serve as an example, viz. The Essential or Universal salt of Vegetables, Animals, & Minerals, is indeed in its own nature nitrous, but it does not conceive any flame afore it has attracted life and flame from the Air. Further, one salt attracts that Life sooner and willinglier than another does, according as it is by Nature framed. By how much the more volatile and urinous the salts are, so much the sooner do they change themselves into Nitre; and by how much the more biting and more corrosive, so much the more difficultly and slowly do they put on the nature of Salt-petre. But because Nitre is a salt that partakes of both natures, viz. of a Urinous and Corrosive Nature, and is compounded as it were of both a Urinous and a Corrosive Salt, therefore by the help thereof one skill'd in Nature may easily help the salts, and make of them whatsoever he pleaseth. Nor is there in the nature of things any salt, but may by the help of Art be turned into Nitre; but especially those salts which are sublimed by fire, and are elevated by the force thereof; as likewise those that are in the Urine and Excrements of all Animals; yea more, Animals, Vegetables, and Minerals themselves do easily assume the nature of Nitre: This now is the first degree of salts. Another degree of salts are those that are somewhat fixer, (as the Sops of Art call them) and are such as are left in the fire, from Vegetables, Animals, and Minerals: These do more hardly pass into the nature of Nitre; but the hardest of all, are those salts which are in the third degree, as common salt, Sea-salt, Mountain or Fossile salt, Alum and Vitriol; for by Art are even these brought to that state, as to pass into true Nitre, but harder than the former, for they need a longer time for transmutation, than the abovenamed flying, volatile, and urinous salts. And therefore I would not have any of you to opionate, that when I say in my Writings, that this or that salt may be converted into Salt-petre, altho as ever it is extracted out of the *Lixivium*, or by barely calcining with fire, that (I say) it should presently be true burning Salt-petre; no, there is a yet farther time thereto required, whereto it may attract its life and soul out of the Air, and become burning or inflammable.

Every common Barber and mean-pated fellow, knows that the most Salt-petre hitherto made, hath been boiled out of a Lee, drawn out of the Earth taken out of old stables, wherein Sheep and other beasts have stood. And why, I pray, out of the old standing places of Sheep, Oxen, and the like Cattel, and not likewise out of the new? It is on this account, because old Stables do not only in long Process of time imbibe more salt out of the Excrements and Urine, and consequently yield more Salt-petre; but also those very salts (that come from the Excrements of the beasts) and which is the main thing, have in long process of time received their soul or life from the air, which new salts have not as yet attained unto: For

LIII let

Let any one boil, and try his conclusions on the fresh Dung and Urine of Animals, as much as he list, they will never become Nitre, unless they draw their Life out of the Air. Let any one take some good Salt-petre, and mix it with Earth, and deffill off the Spirit in a Retort, there will come over into the Receiver such a sharp and corroding water, as will dissolve Metals, Stones, and all other even the hardest Mercurial Bodies, and yet the Salt-petre was not corrosive before, but it hath gotten that degree of corrosivity from the fire's operation. Contrariwise, let some good Salt Nitre be taken, and be calcined in a Crucible, with burning Coals or such-like other matters as will burn or calcine it: By this operation it will be changed into a very fiery and fixt Salt, but not so corrosive, and thus it will dissolve all Fat, Oils, Greases, and sulphureous Bodies, which thing the former corrosive Spirit will not do; for such bodies as are dissolveable by this fixt and urinous Salt, the former acid Spirit leaves them untouched; and on the other hand, it will dissolve those bodies which cannot be dissolved by the fixt Salt, and yet are they both extracted out of one and the same Subject, by the help of the fire. Hence may it easily be conjectured, that this is an Hermaproditical Salt, and partakes of both natures, seeing it puts on both (or either) of them; for the Philosophical Maxim witnesseth, that every thing hath its Original out of that into which it can be changed and relieved.

Now when I pour the acid Spirit that deffilled over into the Receiver, on that fixt Salt again, they are both of them dissolved of their nature and property; the Spirit loseth his sharpness and acidity, and the fixt salt puts off its fiery nature, and so they both become again an Hermaproditical Salt, but yet not presently, but 'tis necessary to allow them some time of standing together in the Air, whereby they may receive that life and that burning nature which the Fire hath deprived them of. But yet notwithstanding, this comes sooner to pass in this, than in other contrary subjects, because these two Contraries have heretofore already been one Salt-petre; for such as never have been Nitre, but are hereafter to be so, require a longer abode in the Air. These instructions we give to those that might haply think that Salt may be animated, without the help of the Air.

And now, that I may perfectly demonstrate that Salts do get their life out of the air, without any increasing in weight thereby, and not from elsewhere, I will give you this following example. Take 1 l. of Honey or Sugar, and let it be dissolved in ten pounds of Water, and let this Water be set for some weeks in a warm air, the Honey or Sugar will be as a magnet to this Water, and will by attracting a life out of the air turn it into sharp Vinegar, and that without any thing at all increasing the weight of the same. By this means Water, by the addition of Honey, Sugar, Malt, or any other Vegetable Juice, will, by the operation of the hidden and attracting essential Salt, pass together with it into excellent Vinegar. But now some or other may imagine that the Honey, or the juice of the Fruit and Corn, have in them a hidden acidity, which by the help of the warm encompassing air, hath revealed it self; and so did not attract its birth out of the air: But I will shew you the contrary, as follows: Take a pound of Honey, Sugar, or some other Vegetable Juice, and force it over in a Retort into a Receiver, and you will find that there will deffill over 10 or 12 lots (or half ounces) of inspid Water, and so many of acid water; the remainder is a dead ahes, and have

nothing in them; the Vinegar and Phlegm that ascended, will not yield one pound of Liquor, and the Vinegar if self, with its acidity, will scarce be so strong in taste as those ten pounds of water that are turned into Vinegar by the air.

This now demonstrates, that there was not in the Honey any more acidity than what was thence drawn out by the help of deffillation, for the remaining ahes have not any taste at all. But put case that the acidity which is driven out of the Retort into the Receiver by the force of Fire, should be as sharp as *Aq. fortis*, (when as tho' it is scarce as fowre as Vinegar) yet would it hardly make ten pounds of Water so acid as to be compared with the other which is made by the essential Salt and the Air; so that it is evident that the acidity (as being a life) is drawn by the Magnetick Virtue of the Honey out of the air.

But as touching this Essential Salt of Vegetables, its being a Magnet, to extract an acetous Spirit out of the air, and communicate it to the dead water. You are here well to observe, that the universal Spirit or Soul of the World may be drawn out of the Air many and sundry waies. In the aforementioned Example of Vinegar is a spirit extracted, which is fit for the converting of Vegetable Liquors into Vinegar. In Hermaproditical salts, the Universal Nitrous Spirit becomes burning, as in Wine, Ale, and Metheglin. All these are so made by the means of air, without which no Wine or Ale can ferment, and without fermentation it is impossible for a burning spirit to be generated; which said spirit is easily afterwards turned into Vinegar, and this Vinegar into Nitre, and this Nitre again into a burning Spirit or Vinegar; for every Life is of one and the same original, and may by the benefit of Art be changed out of one nature or property into another.

So likewise the same is to be understood in the generation of Salt-petre, all Salts of Animals, Vegetables, and Minerals are dead, afore they get themselves a life after a magnetical manner out of the Air, and be made into Salt-petre; for amongst all salts, none deserve to be called a *Live Salt*, but that one of *Salt-petre*, which by the Philosophers is called the *Watchful Dragon*, which likewise at the beginning was dead, but hath got himself a Life out of the air. By all which it is most clearly manifest, that the life of all things ariseth out of the air, and that those Creatures which come not into the air want Life, and that such things as already have life, are choak'd and die if the air be taken from them. Hence comes the death of all things, by a suppressing or taking away of air, (in which air the Life of all things consists) what way soever it be done, by, as the aforesaid example of the Vinegar teacheth; for if Honey or Sugar were not made thin with Water, there would never have hapned that changing into Vinegar. So likewise *Grapes, Apples, Peas, Barley, Oats, Wheat*, were they not moistened with water, but remained dry, they never would get the nature and property of Vinegar, and that for this reason, because the air could never infuse its life into a dry and shut-up body.

This they well know who are employed in making a quantity of Vinegar; and upon this account do they in Summer time set their Vessels open to the Sun, and in the Winter; they keep them in warm stoves near the fire, and both afore and behind, and at the bottom do they make holes to give the Air entrance, that so they might the speedier promote the changing of the Wine, Ale and Metheglin into Vinegar.

They likewise know this too, that even strong Vinegar

negar if it be a long time shut and kept from Air, corrupts and dies. The which thing, seeing it is to be as well understood of other Subjects, as of these here, viz. Salt-petre and Vinegar, we may affirm thus much, That by how much the more of warm Air comes to the Wine or Ale, so much the sooner will they pass into Vinegar. And by how much the more of warm Air the Salts draw, so much the speedier will they draw a Life therout-of, and put on themselves the nature and property of Salt-petre. This is the reason why the Salt-petre boilers do sometimes turn or dig up the Earth from whence they have had Salt-petre, and moisten it with water, that so the Air may the more commodiously penetrate that Earth by its operation, and infuse Nitre therinto. But yet this business goes slowly on, and may be compared with that where a man presseth out Grapes or Apples a little, and then exposeth those Reliques of the press'd Grapes or Apples to the Air, or else grinds Malt somewhat grossly and moistens it with water and so sets it by that it may be ended with the nature and virtues of Vinegar: It would indeed come to pass, but yet much slower than if Wine, Ale, or other Drinks were set by, without the huskiness or bran: The same is to be observed in the making of Salt-petre. By how much the more, the Air toucheth the Salts, so much the speedier will it reduce them into living Nitre. This may be seen in old walls that are built in moist places, you see how the Lime sprouts out and is converted into Salt-petre. We see not the same thing done in the inside of the wall, where the Air can not penetrate into it. Hence know I of a truth, that it is not the husks of the Grapes, nor the husks or bran of the Corn grows four, but it is the thin Juice or Liquor that is either pressed out of them, or extracted with water. And I likewise see that 'tis not the Ahes, nor Calx vive, nor the like calcined things that becomes Nitre, but only the Salt that is hidden in them. Therefore seeing that all calcined things being moistened with water and for a long time exposed to the warm Air do extract a Life and become Salt-petre, and that the Ahes and Calx are like a dead Earth and never yield Salt-petre, but remain a dead Earth. Likewise, forasmuch as such Earth doth not at all confer ought to the generation and making of Salt-petre, but is rather every where an hindrance therunto, whereby the Air cannot associate it self to the Salt; therefore do I separate the earth, body, shell, and useles garment, and keep the Salt, and I introvert it by the Air and turn it into Salt-nitre, but yet not without the addition of Water, in which the Salt is dissolved and rendered more fit for extracting a Life out of the Air; for otherwise should the Salt remain dry this transmutation would be a tedious while abringing to the desired end.

If therefore the Salts that are prepared by the fire are dissolved in water, and the water be together with it kept by peculiar Instruments in perpetual motion, and some heat be also thereto adjoined, so that there be not the least Atoms of the Salts to be found which have not the incessant penetration of the warm air, and which are not animated, (because the warm air and motion do in all places touch and vivify the Salts): Such an operation as this does more in four Weeks, than if the Salt lay in the heaped up Earth and open to the air (far longer) wherein it would not in a whole years time attain to so great a change. But this perpetual agitation and heating consisteth in a certain wooden Instrument which may of its own accord by an incessant motion heat the Salt-water, so as that

every Week a growing alteration may be evidently seen and perceived. It is not of any great charge, and one may get ready as many Vessels to be filled with Salt-water to make Salt-petre with (as he pleaseth) for one Man can manage an hundred of them or more and conserve them in continual heat and motion, so that a Man may keep such an Art secret as long as he pleaseth. And as concerning the ordering the salt by the help of the fire and getting it a magnetick and attractive faculty afore it be dissolved in water to be put into the Vessels; and also how the Vessels are to be prepared, this cannot be conveniently declared in writing, but it is expedient that as well the manual operations requisite for the endowing of salt with a magnetick faculty, as the Instruments necessary for the turning it into Salt-petre be also well lookt into, with all the appurtenances thereto belonging. Any one will easily comprehend them all, and be able to imitate them; yea far easier than any gross or great work, and it may be improved in any subject whatever. It is not any fordid kind of operation, but pure and clean, it needs not any making of Lixiviums, nor any decoction, nor any evaporation, but perfecteth it self without impediment or retarding the work, and coagulates the Salt into Nitre. Verily it is a most delicate and most profitable invention, from which many others may have a beginning and flow.

Thus have we declared and proved that the soul of the World vivifying dead salts, and turning them into Salt-petre, adds not unto them either weight or increase, and yet nevertheless it is of such abundant efficacy and power as to reduce them all to Life, which Life is no other thing but the little Bird of *Hermes*, and easily admits of being esteemed for the most noble amongst all the Creatures GOD hath made, set aside but the soul of Man, and may by the help of Art be again extracted out of the Salt-petre. But that I may mention the thing more openly and more clearly; I say, that the salts must (by the help of Fire and Art) first get a magnetick and attractive power and faculty afore they can draw a Life out of the air. Now then, afore that the universal Life of the World is caught and fettered as it were by the salts, and hath turned the dead salts into living nitre, yet that life lies hidden in that Salt-petre invisibly, and can but a little or scarce any thing at all shew out or display its virtues by reason of the Gross body of the salt.

NB. If so be that any one shall but know how to draw out this Life again out of the Nitre, and bring it into a body, and make it visible, he shall have a thing so admirable that he'll scarce find the like (as I believe) in all natural things. For there is such a sweet and red Liquor, as to fight, thence had, that one only small drop will tinge a thousand parts of water with a Golden colour: which (said Liquor) I have not as yet brought to a constant or fixed Medicine, but do make use of it in Medicine (as it is) and I find in it things wonderful. But this little Bird (as far as I know) cannot be again extracted out of the Nitre, by any other subject than with a net artificially prepared of Sheeps-skins.

Such a worthy thing as this is, do I rank in the number of great secrets and mysteries, and I suppose it to be that work which the knowledge-desiring *Jafon*, being holpen by *Medea* who was most skilful in the Chemical Art, took away from the Dragon, and called it the Golden Fleec: But I would not have any one persuade himself that I speak here of such a Tincture as is extracted out of fixt Nitre (and likewise the same is extractable out of Salt of Tartar) by Spirit

rit of V Vine. No, that is no true Tincture, but the Spirit of Wine is somewhat altered and tinged by the fixt salt. But that Liquor of mine is the true, occult, and inmost Tincture, Virtue, and Life of the Nitre, and is of a golden Nature, but plainly flying and volatile, one drop whereof doth so gild a whole Imperial, as if it were gilt over with Ducket Gold. This Tincture cannot be changed or altered by any contrary Menstruum, be it Corrosive or Urinous, no nor by *Aqua-fortis*, or Liquor of Salt of Tartar; the like of which is scarce to be found in all nature.

For if there be a most delicate colour drawn out of the Vegetables, as Cochenille, Saffron, and such like, by the help of the Spirit of Wine, and there be dropt therein but one only drop of *Aqua-fortis*, the colour will presently turn pale, and if you add more, it will vanish for altogether. Or else if a drop of the Liquor of Salt of Tartar should be put therein, it would presently change colour and become duskyish. But now, this true Tincture of Nitre, or Soul of the World suffers not any change from either of the contraries. And should one have even a metallick Tincture, or extract even from Gold it self, yet would it not stand in this trial, but would be precipitated either by the acid or the fixt salt, and separate from the Menstruums. But ours doth constantly abide in every trial, and resists both the contraries.

I do therefore repeat what I have often said, that there is more lies hidden in Nitre than many thousands of Men can persuade themselves of. But because it is so vile and abject a thing, no body thinks that there lies hidden any thing of good therein. But do but read the chiefest of the Philosophers, and you shall therein find that they do enigmatically point at Nitre, and do call it the Dragon which is to be slain by its Brother or Sister afore it parts with its Treasure; But enough of this.

The things hitherto mentioned, have I produced for this end, that my Neighbour may be the better certified concerning them. All the Philosophers Books are full of this thing, amongst whom, *Hermes*, and *Basili Valentine* excel, who have written most clearly. *Paracelsus* saith openly, Alchimy hath found it in Nitre. The late Philosopher *Nucement*, hath published a Treatise of the Salt and Spirit of the World, and is verily most worthy the reading, which (said Book) I commend to the Reader that studies these things. Therefore do I here again repeat what I have so oft reiterated, viz. That Salt-petre is the most admirable, the most excellent, and the most powerful Subject of the whole World, whose wonderful properties cannot be enough search'd into. But because it hath its rise from dung and putrid rotten things the greatest company of foolish ones do despise it, but the small company of Philosophers and Wife-men (who are those that know what admirable virtues it has) do most highly esteem it, and set thereon a great value. The well disposed Reader will clearly find more as to its virtue and efficacy, in the three following parts.

Of the original of all good things, and Treasure of all Treasures, vouchsafe that we may well and rightly improve this earthly and fading Treasure, and may so search after, and use it unto the end, that we lose not the chiefest good, but may rather find and keep thee for ever.

An Admonition, adjoined as an Over-plus.

IN the first Chapter of this first part of the concentration of things, have I plenary manifested, by what means, new Wines and Musts are (by the help of an Artificial condensation) to be brought into a narrow compass, that so they might be carried into far remote places wherein there are no Wines, and may there be sold to great profit. But yet I forgot to shew, by what means the favour which the winy Juices contracted in their concentration, is wholly to be taken away in the fermentation when they are again dissolved in water, that so the Wines made of those Juices may not have any untoward and unpleasant taste. 'Tis an Artifice without which no man can easily quit himself in this Art of making Wine. But that I may certify every one hereabouts, the Medium (or Basis) necessary about the precipitation in this work is no other thing but common *Sulphur* excellently well purified, a little portion whereof (according to the nature and property or disposition of the Juices) is to be hereto added, which must boil up (or ferment) with the Wine; that so it may draw to it self all the filths, and all the strange odour, and favour or taste in the fermentation and by precipitation cast them down to the bottom, which being done the Wines become sweet, clear, and get a good favour. Furthermore it is to be known by what means (seeing that there are many faeces and defilements that will separate themselves out of those kinds of Wines as well as out of others, and settle to the bottom) even they are to be put to some use, that so there may not be any loss, but that the gain may be by so much the greater. Divers ways are there of making profit from them; as for instance, The remaining Wines may be pressed out in bags, or else they may be turned into Vinegar, or a spirit may be thence distilled, and the remaining gross matter be boiled in water, and the Tartar therein dissolved, and pressed out in bags, that it may so shoot into Tartar. But as touching this expression I have taken care to have a peculiar Book published at *Norimberg*, (viz. *The Treatise of the Lees of Wine*) So that it is wholly needless to make any mention of the same, in this place. The Courteous Reader may use it to his occasions, as being such a Book, in which he will find the said pressing out the Wine and Tartar, and also the making of Vinegar, clearly described, with all the circumstances thereabouts, and without all question if he rightly understands me, and sets about the work, he will do himself a great deal of good.

NB. But if so be that any shall know the Art of turning the Tartar of those Faeces into Salt-petre, (and such a thing may be done and that in a very short time) he will get twice the profit; that is to be gotten by making Tartar of them; forasmuch as he need not put himself to the inconvenience of pressing them.

In the second Chapter of this first part where mention is made of the concentration of Corn, there it has been alleadged that the remaining husks or branny parts which remain after the extraction of the Juices, may be made to yield as much yea more Money than will pay the costs about the Corn. But it is well known, that those reliques that are left in your boiling up of Ale, are improved to fatten Beasts with. If now a *Medimus* (a measure of about some 6 bushels) of Corn doth cost half, nay even a whole Imperial, those reliques (that are left of it in working) can scarce cost less than one eighth part of that Imperial. And now out of such a *Medimus* or measure of such reliques,

liques, they would very hardly when turned in the Beasts, into nutriment, have made in them two pounds growth of flesh, the price of which (said two pounds) would not amount to the eighth part of the said Imperial: Whereas now, if those reliques were handled after the afore-mentioned way of reducing Wood into Juices, they would easily yield as much, or more Salt-petre than the price of the Corn was at the beginning. So that here's an enriching Treasure offers it self to the pious and diligent Householder, whereby he may do good to those in need.

In the third Chapter of the first part, is mention made only of the Concentration of Wood, of the pressing the Juices out of the Wood, and of the making Nitre; But because there is not every where such great quantity of Wood, as to employ it to the making of Salt-petre without omitting the more necessary use of it, yet notwithstanding the case may be so ordered as that a great quantity of Salt-nitre may be made of the Leaves of the Trees and the Grafs that grows under the Trees, and there's no need to cut down the Trees, if a Man has no mind so to do. Besides too, in such places where there's but little Wood and much Corn, even the very stubble or straw (of the Corn) is fit enough to be made into Salt-petre. So that there is no place where there is not matter found for the making of Salt-petre.

And therefore I cannot forbear but must needs teach all pious Householders (whether they have their Houses in Cities or in Villages) a certain easie Artifice, by the help of which they may gather a Treasure for their Children, without any labour and costs, and such a one as Thieves can never rob them of.

And now, seeing I have revealed in this small Book, for the benefit both of Rich and Poor, high and low, three Artifices or Workmanships by which, Wine, Corn, and Wood may be made more profitable; but yet have not brought any assisting help to such as want both Wine, Corn, and Wood, I have judged it worth the while (that so even they who have nothing, and yet nevertheless desire to provide for their Wives and Children in some honest way) to bestow on them a secret Art, whereby they may seek their advantage or profit. And I hope the thing will redound to the Honour of God, and to all our Healths.

Besides, I will shew away to such as have no inheritance left them from their Parents, nor have any thing come to them by Marriage, by what means they may without labour and trouble get a Treasure for their Children.

First of all, Let such a one take care to have some shade or hovel made, to join to that side of his dwelling that lies in the middle 'twixt the North and the East part of Heaven, or some other more convenient place, so as to admit the Sun and Air to it, but to keep off the Rain. Under this Pent-house or Hovel, let him dig a large Pit, and with the Earth he digs out let him make banks round the Pits-mouth that so it may keep the Rain off of every side. This done, let him each day in every year, or whensoever he can conveniently carry and throw into that Pit these following matters, so long till his necessity forceth him to dig all out again, and to see how much Treasure he hath gotten, even whilest he slept. Now these matters are, All sharp and bitter Herbs, growing in by places, amongst bushes, and in the way sides, and such as the Beasts feed not on, as *Esula*, *Cicuta* or Hemlock, Henbane, Fumitory, the thick stalks of Tabaco that are thrown away in those places where it is planted, the hard stalks of Colwort, which the Beasts eat not of,

and likewise all those things they leave in their Troughs; likewise Firr tops or Apples if you have them at hand; also the Leaves that fall from the Trees in Autumn are to be gathered; also Pigeons-dung, and Hens-dung, Birds and Hens Feathers; all the Ashes which V Women usually make their Lees with, and other Ashes that are not fit for that use, as also such out of which the Lixivium or Lee is already extracted; the foot of Chimneys, Hogs hairs, the horns of Oxen and Cows, and the bones which the Dogs eat not of. All these matters may he throw into his Pit, and that he may the sooner fill it, he may gather as much as ever he can from the bordering places, and throw it therein, that so in one or two years time he may with all those things fill up his Pit. Mean while he must pour into the Pit the piss gathered in his House, and that he may have enough he must also get as much as he can from his Neighbours, so as to keep the things thrown in the Pit in a continual moisture, whereby they may the sooner putrefy. In want of Urine, common Water may be taken; if Sea-water or other Salt-water can be had, it will be the better. Also the Brine of Fishes-pickle, and the salting or salt-water that Flesh is macerated (or pickled) in are of good use in this business; likewise the Blood of Oxen, Cows, Calves, Sheep, which you may easily have at the Butchers; all these things putrefying together do put on the nature and property of Salt-petre.

If now, all those matters in your full pit shall have well putrefied, then cease from pouring on any more moisture, and all the things are to be left so long till they are dried. And then if you need Money, let a Salt-petre maker be fought for, and bargain with him about the price of drawing out your Salt-petre by water, of making it, and selling it. This done, cast the remaining Earth again into the Pit, together with the remaining Lixivium that shot not into Nitre, and there leave it for a year or two, and moisten it sometimes with Urine, or if you have not this, with common Water. This Earth will again yield Salt-nitre, but not above half so much as at first.

NB. If you stand not in need of Money, let the matter lie, and as oft as it dries, so often moisten it again with the aforesaid moisture, that so the Nitre may more and more grow and increase. By this means shall such a one gather a secret Treasure, & shall not know almost how he came by it. If he needs it not himself, his Children will find it. Thieves & Souldiers will not steal it away. If one Pit be full then another may be made, that so nothing at all of those matters, which otherwise are most base, (but in this case most suitable) may be lost. Now if there were but only one in every Village that were appointed to exercise this Labour, there would be found out as it were in a small Country many thousand hundreds of Salt-petre, and so these matters still serving for the same use, there would never be any scarcity of Salt-petre. And now, Nitre being present, Gold and Silver are not far off. Let every one observe this, and esteem it. Men will sometime or other at last, become thrifty and wife, and will see what blindness they have been possessed with.

Give GOD the thanks, and be helpful to thy Neighbour. GOD hath bestowed on me, I bestow on thee, do thou likewise bestow somewhat upon thy Neighbour, and it will be well with us all.

THE SECOND PART

O F

The Prosperity of Germany.

Wherein is shewn,

By what means Minerals may be Concentrated by Nitre, and turned into Metallick, and better Bodies.

For the benefit of my Country, and of all such as affectionately and industriously follow after Metallick Affairs.

Friendly Reader, Have taught in the first part of this Book, by what way the Vegetables, as Wine, and Ale, are to be concentrated, whereby they may yield more profit than hitherto they have done, and also, how Wood is to be reduced into Salt-petre. In this present Second part, shall be taught, how the Salt-petre is to be used, and how, by its Minerals may be Concentrated, and wrought into Metallick Bodies. And as to this Concentration, thus stands the case; that is to say, so far as a good part of Minerals are of very little use, and lie neglected as things of no worth, and prove not profitable to any one, (whereas if there were Men that understood but the Art of it, there might redound a great benefit to the Lands where they are, It hath seemed to me worth while to declare it to my Coun-

try, nor doubt I but that there will arise some diligent Inquirers, who will lay the thing to heart, and take care thereabout, and will even set their hands to the work it self, and thence get much profit; which to me would be very pleasing and acceptable. Therefore (in the Name of God) will I set about the manifestation of the Gifts of God (which lie every where unknown, and wholly disesteemed, and which yield no Man any fruit) and lay them open before the Eyes of the whole World, that so they may be better known hereafter, and be of more benefit to the Country. And I beseech the most Wealthy, and the most Ancient Householder our most merciful Father, to bestow a Blessing, and good success on this my endeavour, that it may tend to the Honour of his most Holy Name, and the health of all our Souls. Amen.

Of the difference of Minerals, and what is understood by the Name of Minerals.

As concerning the word Mineral, why all Fossile and Metallick Mines are so called after they have been wrought upon, and brought by the fire into Malleable Metals, I judge it but of small moment to make any tedious Comment thereupon; besides, others have long ago thoroughly treated of that, and yet it makes but little to the thing it self. But my purpose is (at present) to teach, what means such little esteemed Minerals may be made useful, and profitable by; but afore I begin this work, I will recite, and shew the many sorts of Minerals that there be; then next that, I will shew how, by the benefit of fire, and the hands of the Artificer, they may be converted into better bodies, and become useful, and profitable for Mankind.

Under the Name of Minerals are comprehended, or reckoned the following, viz. Antimony, Arsenick, White, Yellow, and Red Arsenick, Cobolt, Lapis Calaminaris, Zink, Bismute, or the Silvery Marchasite, likewise the Golden Marchasite, Pyrites, or Copper stones, Vitriol of various kinds; as also, its kindred, may be added to the number of Minerals. And albeit, that some do also refer Alum, Salt-petre, Sal-Armoriack, Sal Gem, and others of that kind to the rank of Minerals, yet cannot I acknowledge them for such, or reckon them up amongst the number of the above mentioned, seeing there is nothing Metallike to be found in them: Such only therefore do I call Minerals, that have in them a Metalline nature, and which do admit of being joined with o-

ther Metals, and of being molten together with them in the fire, and out of which the known Malleable Metals, may be extracted. These are they which I intend to treat of, and will see, what good is thenceforth extractable.

And first of all we'll speak of Antimony. Antimony is the noblest Mineral of all, not only because it doth for the most part contain Gold in it, but upon this account too, because more eminent Medicines may be thenceforth prepared for the use of Mankind. In the Mine-pits it has its peculiar Veins; that which is found in Transylvania, hath some little bigger portion of Gold in it, and is accounted of as the best in all Europe, next that is the Hungarian, which likewise doth sometimes contain no contemptible portion of Gold; next is the Fichtenberg, which is found at a small Town call'd, in the German Tongue, Gold-Gronack; the Polonian fort, and that which is found in most places of Germany, contains but little Gold, or none at all; but there is some which has much Silver in it, and (for the most part) is neither wont to be used, nor desired, or sought for, save by the Letter Founders, and therefore use it to make their Matters flow. Also many do use it (viz. 3) in Medicine, and do much good therewith, but it hath certain Enemies who are none of the wisest, and so is hated, and rejected. But yet there lies in it more hidden good, than all its Enemies are able to conceive of; witness my *Pharmacopæia Spagyrica*.

And

And Basil Valentine, certainly an excellent Philosopher, writ the Triumphant Chariot in its Honour, which is an exquisite Book and profitable to read.

But as concerning the way of making a Regulus out of Antimony, and as to the uses it serves for, that I have described in the fourth part of my Furnaces. Moreover, as to the manner of deparating Gold thereby, and cleaning it from all Heterogeneous mixtures, and as to the graduating of silver, thereby, that it may become Golden, all this have I spoken of in the Explication of my *Miraculum Mundi*; and as to what other effects may profitably be done, therewith in Metallick Operations, shall be shewn, partly in this Treatise, partly in the third and fourth ensuing parts. As concerning the way of separating it in quantity out of the Ore, *per defensionum*, is to be seen in *George Agricola's* Book, that he wrote of the Metallick Art, and in others; nor indeed belongs it to this place to speak thereof.

Of Arsenick.

Arsenick likewise is a good Fossile, or profitabe Mineral, and is put to many Uses. It also hath its singular, or distinct Veins in the Earth, whence it is taken; it is forced out of the Ore by Ascension, and Descension, and is purified for use: It is found white, yellow, and red. Also some silvery Minerals or Ores do in their solution, or melting, yield much Arsenick, which the Melters of the Ores do catch in Chimneys or Funnels made for that purpose, and keep it for use; concerning which, you may read in *George Agricola's* Writings. So likewise, Cobolt yields Arsenick, and so do some Golden Minerals, or Ore; that which is separated from a Minera of Gold, *per ascensionum*, is very red, and auriferous; and this, those that deal with Metals, have experience of; which, if they separate not from the Gold Ore afore they melt it, it carries away a great part of the Gold, and hides it in its Belly in the melting, so that they would not have so much Gold as there is in the Ore. For indeed, such a kind of Arsenick, is an unripe Gold, as shall be hereafter proved: So then, there lies more hidden in that Contemptible, and Venomous Arsenick, than any one will easily perfwade himself to believe. There are also Medicines prepared out of it, but such, as serve only to be externally applied, in inveterate, and virulent Evils, as the Cancer, and Fistula. It is also used in Colouring and Dying Cloaths, concerning which, you may peruse my other Writings.

Of Auripigment.

This Mineral is in a manner of the same Essence that Arsenick is of; but this does not come forth of Minera's, or Metalline Ores, but hath peculiar Veins of its own, in which it is generated; it is an unripe Mineral, and doth for the most part also contain Gold. It is exceedingly Poisonous and Volatile, and therefore it is but little used, save only by Painters. It can be fixed by Nitre, and it makes Copper white, and brittle, as Arsenick doth: And it suffers it self to be sublimed out of its yellowness, into Transparent Rubies, which are used for Ornaments sake.

Of Cobolt.

Amongst all the Minerals that are to be found, Cobolt is the most poisonous; it's an unripe silver, and it oftentimes yields in melting good silver, yet one sort more than other; some also there is which hath not any Silver at all, and is used about the sky-colour'd Smalt, to help make it, with an addition of Fusile Sand, and Potters Ashes. But when they meet with that which has Silver in it, they separate it thence from by Fusion; besides, it may be so fixed by the help of

Salt-petre as to yield permanent Silver, as shall anon be spoken of.

Of the Silvery Marchasite.

The silver Marchasite, or Wisnuth, is a known Mineral; it's every where found to and again in the silver Mine-pits, as well as Cobolt is, but yet it is much more fixt than Cobolt; neither is it of so poisonous a Nature. It is gotten out of its Ore, or Minera, most easily by a small flame of wood fire, and is used by the Pewterers to make their Pewter hard, founding, and fluxile. Likewise, out of its scoria or drossly parts, is the blue Smalt also prepared, which the Potters use to glaze their Pots, and the Glassmen to make sky-colour'd Glasses. It doth very frequently abound with much silver, and 'tis rare to find any that is wholly void of silver: And if it holds so much silver, as is of more value than the Marchasite can be sold for (as 'tis barely *Bismute*) they separate it, if not, they leave it in it. For if an hundred weight doth not contain 20 or 30 Lots, or half Ounces they do not separate it, because the Marchasite will yield so much. But now, the Silver may be gotten out of the Marchasite, by Salt-petre, so as that the remaining Marchasite shall lose nothing of its goodness nor be at all spoiled, as I have shewed in the Explication of my *Miraculum Mundi*.

Of the Golden Marchasite.

The name of Marchasite is proper to every unripe Metallike matter (and is) of as many sorts as there are Metals; hereupon the matter which has Gold in it, is called the Golden Marchasite; that which has Copper, the Copper; that which has Iron, the Iron; and so that which abounds with Sulphur, is called the Sulphurous Marchasite. But now there is Sulphur in all the Marchasites, and sometimes Arsenick too, but (the Golden ones) have more of Gold than the other Marchasites have; Besides, out of all kinds of Marchasites proceeds (for the most part) a Vitriol, which shews the nature of that Metal, which the Marchasite contains; one white Copper, sometimes Iron; 'tis rare to find a Marchasite that hath no Metal at all in it; if it hath nothing of Gold, Silver, or Copper, yet has it Iron, and gives out of it self a Vitriol useful for Dyers, and which fuch as prepare *Aqua-fortis* cannot be without.

Of Zink.

Zink is a Volatile Mineral, or a half ripe Metal when it is drawn out of its Ore. It is much clearer and brighter than Tin, yet not so malleable and fluxile as Tin is, and it is usually put to Tin to make it brighter and harder. We have it not much growing in Germany, but great quantity of it is every year brought us by the Merchants out of the *East-Indies*. The way how to prepare it for Medicinal uses, have I described in the first part of the Philosophical Furnaces. It is a golden but an unripe Mineral, it gives Red Copper a Yellow Colour and turns it into Brafs, as *Lapis Calaminaris* doth; and indeed that same Stone is nothing else but unmeltable Zink, and this Zink may properly be called a fusile *Lapis Calaminaris*; for as much as both of them partake of one nature. But with Zink, there is most an end conjoined Lead too, and then it is not fit to make Brafs of, unless the Lead be first taken therout of; so it is at *Cosbaria*, where together with the Minera or Ore of Zink is Lead also digg'd out mixt amongst it, and is called a Lead Ore, though there be contained in that Ore, four times more of Zink than there is of Lead, and yet they burn up the Zink for to have the Lead, which Lead hath some Silver in it. In the melting it flies away in fume, and it is a volatile and combustible Mineral, and sublimes it self up into the holes of the Furnace,

Furnace, whereupon the Melters or Founders are constrained to knock it off frequently, lest it should too much lessen the Furnace; this matter they knock off, they call Calmei (which is Lapis Calaminaris) and which turns red Copper into Brass, with increase (of its weight); and so verily by means of the not-knowing or being skill'd in this Ore, a great quantity is yearly burnt up and lost. Sometimes the founders do gather somewhat of the Zink, which is most excellently excellent; but that Ore might be melted with far greater profit, if they did not so burn up the Zink, and force it into fume; but seeing men are hardly drawn back from an old custom, it must be born with.

But yet (I say again) if that Ore were handled in a due manner, there would round far greater profit thencefrom than now doth. Such a kind of Mineral as this doth Westphalia also yield, which the founders there account for a Leaden Ore, because it has some lead mixed with it, but when it comes to be freed or molten it goes (all) away in fume, and therefore they say, it is also a Calmei or Calaminaris Ore, and so it lies unuseful.

Of Calmei or Lapis Calaminaris.

Calmei Ore is digged out in many places in Germany, but there is none of such note as that which is found at Aquigrates, for that is wholly void of all kind of Leadyness, and much different from that of Goflaris, or Westphalia; and therefore it is also very fit to make Brass of, which is there made in plenty, and farther, this has Gold in it, though not so much as to quit the Colts of separating it. But there is no Mineral richer with Gold than this, and could it but be ripened (and I doubt not at all of the possibility of so doing) a good deal of Gold might be drawn out from thence.

As concerning what else may be performed with that Mineral, I have formerly told you in my First and Second Part of Furnaces, nor is it needful to treat of the same thing more at large in this place.

Of Common Sulphur.

Sulphur or Brimstone is the most known, most used, and most combustible Mineral of all. As touching its use in Medicine, and in Alchemy, about the separation of Metals; may you find something mentioned by my self, in the writings I formerly published, and in the writings of others too.

But at present we will only mind you of this, viz. That it is the very Foundation and Root of all the Metals; for tis rare to find any mine wherein Sulphur does not shew it self. Very many places in the World, is Sulphur both made and digged out of the Earth, in very great quantity, & that chiefly in Island, and in Italy, nigh to those always burning Mountains, Heckla and Vesuvius; it is also drawn out of Marchafites per Defensionum in many places of Germany, so that enough of it may every where he had for a little money.

These are the chiefest Minerals that I ever knew of, and these are they which are commonly sought after, and applied to use. But now, besides these, there are so many various kinds of Fossiles and Minerals to be met withal, that one cannot reckon them all up, or give them peculiar Names. One contains Sulphur, and Arsenick, another, Cobolt and Sulphur; another Antimony, and Arsenick, and of that kind are there very many more. But yet those that we have reckoned up, are the most known, and most in use, and therefore shall at present be sufficient for us to speak of.

Having now taught what Minerals are, and which of them are most known & used; I will now teach, in the next place, by what means they may (by the help of Salt-petre, & of other Subjects) be fixed, concentrated,

imbodied, or brought into Metals, so as to be rendered profitable for the use of Mankind, and which otherwise lie every where to and again neglected and, are wont to be of no esteem.

And as to the Concentration of Minerals, thus stands the Case with them; they are either to be fixed & subdued, as 'twere by the help of Salt-petre, that so they may not so suddenly fly away in fume in the fire, and be burnt up, but may abide the fire and suffer themselves to be molten; or they are to be reduced into bodies by the help of Metals, that so they may come in use, and that by augmenting the Metals, as Lapis Calaminaris does, or they are to be purified, separated, and made better, as shall be mentioned of Sulphur, Antimony, and the others, that so those kind of Minerals of which there lies to and again, at present, great quantities, wholly neglected, and profitable to no body, may hereafter be of use and benefit.

And first of all, as to the fixation of the Minerals, the way of proceeding is thus, viz. The Mineral is to be powdered, and to be mixt with equal weight of burning Salt-petre, and so to be fired, that the combustible and volatile part of the Sulphur may be forced away, and the Mineral may afterwards brook the fire the better, and be molten and forced downwards (per descensum); which operation I have treated of in the explication of my *Miraculum Mundi*, and therefore think it needless to repeat the same thing again here. By this mean therefore may Arsenick, Auripigment, Cobolt, Zink, Bismute, and other Volatile Minerals be in some sort fixt by the inflaming and burning up with Salt-petre, so as afterwards to endure the fire, and to yield forth the good they have in them. There's also another way of embodying Volatile Minerals, viz. by the benefit of Metals; if the Metals and Minerals are joined together in a due measure, and be likewise united together by the virtue of a Cementing fire; then doth the volatile Mineral penetrate it self into the Metal, and becomes Metalline, and doth also encrease the Metal, as is evident in Calmei or Lapis Calaminaris, which being joined with red Copper and cemented, enters into it, augments and encrease it, and turneth it into Brass; whereas there cannot be any Metal educed out of the Calmei by the usual way of melting. In like manner may all Arsenick minerals be (by cementation) introduced into Copper, & made corporeal; and these do not colour the Copper yellow as Calmei doth, but make it white, nor is the Copper rendered maleable thereby but brittle, but yet 'tis not without profit; for if that white Copper be handled after a convenient manner of taming or over-malting it, then the Gold and Silver that was in the Arsenick, betakes its self into Regulus's, which are to be deparated in a Telt or Cupel, or else by the help of Salt-petre; but there cannot any metalline body be made out of Arsenick, Auripigment, or Cobolt, by bare melting. The way of proceeding with it is thus; The Copper is to be cut into small bits, and to be moistned over with Linseed Oil, and the Arsenick, Auripigment, Cobolt or any other Realgar is to be powdered and srewed thereupon, and so a bed of Copper, and a bed of Arsenick to be put one a top of another in a melting Pot; then the Pot is to be well covered and fenced with Lute, and placed in a crucible fire, and the fire is to be put nearer and nearer to it, until the Pot is through red hot, then let it cool, and you shall find that the Arsenick hath gotten ingreß into the Copper, and makes it black and brittle. The Copper thus burnt, may be reduced into powder, and burnt with good Salt-petre, whereby the Volatile Gold and Silver which was contained in the Arsenick, is made corporeal, and abides as constant upon

upon the Telt as other fixt Metals do; so that by this means permanent and good Gold and Silver may be gotten out of every sort of Arsenick, Auripigment, Cobolt, and the other volatile, venomous and base minerals.

NB. This kind of operation is very dangerous to those that are unskillful, and who being unversed in the Chymick Art, have not learned to take heed to themselves. And therefore it behoves every one to beware of doing ought rashly or heedlessly. He that knows not how to carry himself (or his business) warily, let him forbear to meddle at all with this labour or process: But as for one who is better versed, and pretty well experienc'd, he may set about this work safely and will gain by it: Because there is oftentimes found Arsenick and Auripigment that hath in it much hidden volatile Gold and Silver, and which cannot be retained in the common way of melting by Fire, but will totally fly away: But now if it be imprinted in the Copper by Cementation, and fixt in the same by Salt-petre, and then precipitated by means of Lead or Iron into Regulus's, it will render all that fixt which afore was unfixt and flying. But as concerning such a Cementation and Fixation to be done by Nitre, will be manifested by the following process.

NB. But you are carefully to observe, that one mineral must help another in the separation of their Gold and Silver (if you would undertake this Labour for profit): For so each will produce what it has in more abundance, and thou wilt have a greater reward for thy pains and colts. For example, I prove and try Auripigment or Arsenick, and find that it is auriferous, and I have a mind to perfect it and turn it unto my use; hereupon do I look for such Copper as is likewise auriferous, (and indeed there's plenty enough of such every where): Into this Copper do I introduce my auriferous Arsenick by Cementation, and that I may not need to cupellate (or blow off) the same upon a Telt (for the very Labour of so doing will cost more than the gains will be of that separation) I do precipitate the Gold that is therein into a Regulus, which Regulus being purified, I obtain the Gold that was contained in that Arsenick and Copper, neither is there any need of cupellating all the Copper. But that the precipitation of the Regulus may be the more commodiously done, I proceed on this wise. I find out some Antimony of a good sort, and which is of a Golden nature; likewise such Iron as hath Gold in it, both which, viz. the Iron and the Antimony, may easily be gotten, and then I set on the separation which I thus institute.

First of all I implant the auriferous Arsenick into the auriferous Copper (if such may be had) then reduce I these into powder, and fire them with an equal admixt weight of burning Salt-petre; by this means the Arsenick is made a little more fixt, and suffers it self to be the better dealt withal in the fire, but if you are well skilled in this kind of labour you may spare your Salt-petre and may melt down your Copper (burnt with the Arsenick and powdered) with an equal weight of Antimony. And if of its own accord it lets fall a Regulus out of it self, then there needs no precipitation, the Regulus may be laid by, and that which remains may be likewise precipitated into a Regulus with common Iron; and this (last Regulus) is also of use, as shall hereafter follow: But if not (that no Regulus falls) then that Mass may again be put into a Crucible, be molten, and a little Iron filings be cast in to make it fettle; the which must be stirr'd about with a red hot Iron rod, and when it's well molten,

'tis to be poured out into an Iron Cone; which being cool, the Regulus may be knocked off, in which Regulus will you have the Gold that was in the Arsenick, Copper, Antimony and Iron. This Regulus must be cupellated either by Sale-petre in a Crucible, or with Lead upon a Telt; which done, you will have the Gold that lay hid, and shut up in the afore-mentioned Minerals.

But now, if one hath a mind to make that separation yet more compendious, and to have greater benefit thereby, he may add to that Copper burnt by the Arsenick, some Silver burnt with Brimstone, and so melt it with the Antimony, and by the means of Mars precipitate them into a Regulus; then the Silver will so much the better draw to it self the Gold out of the Arsenick and Antimony, and yield (in the separation) greater benefit.

NB. If so be a man be not skillful in this operation, let him forbear his Silver a little, and add some Silver to the Regulus by melting them, and then afterwards purify the Regulus by Salt-petre; for so the Gold that is in the Regulus associates its self to the adjoined Silver, and enricheth it with no little increase, viz. according as the Minerals have had more or less Silver, in the making their separation.

And this is such a work as seems sufficiently able commodiously to sustain life; but it requires an experienced Artift, not a giddy headed fellow. Neither have I written this process for those who are not as yet well versed in Pyrotechny, but for such who are well skill'd and dexterous; and although this kind of operation needs no great store of Art, yet notwithstanding, every one will not rightly perfect it, and therefore do I warn such as are not well skill'd in Pyrotechny to desist from this labour, and betake themselves to some other, and set themselves about doing such things in which haply they are better skill'd, and not to lay the blame on me, when they are frustrated of their expectation, as if I had not dealt faithfully and sincerely in my writing, but let them rather impute it to their own preposterous rashness and unskillfulness; and what loss soever they bring upon themselves, let them impute it only to their own (misconceptions).

To deal plainly with you, that labour is conjoined with some difficulty; but yet if any one be diligent and well exercis'd in the Pyrotechnical Art, the operation will succeed in such an ones hands very pleasantly; nor will he want a worthy profit, especially if he takes such Minerals as are rich; and use them about this separation. But some perhaps will say, Whence shall I have those so good Minerals? Who demonstrates to me, which are auriferous, and which are not auriferous, which are good, and which are to be rejected, that so least being deluded in this, I should lose all my labour? I would have such a one know, that if he has not gotten so much skill and experience as to prove a Mineral, whether it be auriferous, or not, he is not at all fit to take upon him this Labour of separation, and he were far better advised, if he wholly abstained from setting about it. But yet that I may not omit ought which may seem to be desired from me, I will over and above add here in this place, what way Minerals may be proved by, whether they be auriferous or not, and 'tis on this wise to be done; all Realgars, as Arsenick, Auripigment, Cobolt, and others of that kind, are first of all to be implanted into Copper by cementation, then are they to be molten, or throughly purged and subdued with Lead (like as you do with a crude Mineral); after this, there

comes out a certain little silvery Pellet, and this you are to prove as you would for Gold. Now according to the moreness or lessness of the same, so is the business to be ordered, and compute to be made, whether or no the said Mineral is worth the pains of separation as aforesaid. Likewise the Copper it self may be cupellated with Lead alone, and then the remaining silver Pellet be proved for the Gold, with Aqua-Fortis; but as for the Antimony, and Iron, they may be well melted jointly together in a Telt under a Cover or Muffel, or in a clean Crucible in a Wind Furnace, with this observation, that there be used twice as much Antimony as Iron, and so a Regulus will settle, which is to be purged or tried with Lead in a Telt, and kept flowing till all the fugacious parts are evaporated, which done, there is found a silver Pellet, which is to be proved with Aqua-fortis, how much Gold it has.

NB. This probation, or trial is to be accounted of as a certain and lawful trial, but such though as you may easily err in the doing of, and so may have nothing, though it had in it a good part of Gold; for the Antimony will not easily suffer it self to be vanquished, or go off, but it will break the Telt, or Cupel, and the little Pellet which is the probatory Globulus betakes it self (by reason of the fierceness, or eating penetrativeness into the Telt) so that the Proba or trial it self, may most easily become fallacious, and yield no certain discovery. Which to remedy, the business is to be thus managed, after that your two parts of Antimony shall have been well melted in the Crucible, with your one part of Iron, there must be put thereinto a little dried Salt-petre powder, and the Pot, or Crucible must again be covered over, and care taken to make them melt well together; then are they to be poured out into an Iron Cone first smeared over with Wax, and when 'tis cold, the Regulus is to be knocked off from the Scoria, to which must be added twice or thrice the weight thereof of Lead, and the Regulus of the Antimony doth in the melting-pot separate it self by Salt-petre from the Lead, and the Lead is to be afterwards cupellated, and so that goes all off, and the true weight is had. But albeit, that this description be clearly enough delivered, yet certain I am, that one in ten will not understand it aright, and therefore it is behoofful, more fully to inform, and clearly to shew the Reduction of that Regulus into Scoria by Salt-petre.

To make this trial or proof 'tis sufficient to take a huge vast pot to fill with Iron, 'tis sufficient to take of Iron 100 l. of the smaller probatory weight, and 200 l. of Antimony, both which are to be molten together, and to be precipitated with a little Salt-petre, for so the Regulus doth the better separate it self from the scoria's, the which is then to be washed and purified by Lead and Salt-petre. This Regulus that comes from the Antimony and Iron, put with three times its weight of Lead in a clean Crucible, and make them well to flow in a wind Furnace, but cover your pot close that no Coals fall in, and so hinder the work, then take off the cover and throw in a little powdered Salt-petre, and again cover the Crucible, and above all things have a care that there fall not in any Coals, and let them lie and operate a little upon each other, then the Salt-petre imbibes all the Antimony, Iron, and Lead, and thereby becomes hard. This being done, some more Salt-petre is to be again cast in, and you must make them flow together, and so all the whole parcel of Antimony, Iron, and Lead, betake themselves into the Salt-petre, and

pass into scoria, but part of the Lead remains whole or free, and is not scorified, and therein will the Gold be, which the Antimony and Iron had immixed in them, which if it be blown off on a probatory Cupel, or Telt, under a Muffel, there will then remain the true weight.

NB. But it is expedient, that there be a just proportion observed in this kind of Work, that you take not overmuch Salt-petre to this ablation, or converting it into scoria, and so bring all the Lead into scoria, but the business is to be managed, that there be left remaining one third part at least, of those three parts of Lead you took, which is not reduced into scoria with the Antimony; then may it be poured out into a Cone, and when 'tis cool, the Regulus is to be knocked off from the scoria, and Cupellated.

NB. He that is minded to wash Metals after this manner by the help of Salt-petre, and to reduce them into scoria, must have an especial care that not a Coal falls into the Crucible, for they will much hurt, and will again precipitate them, which the Salt-petre hath already imbibed, and so render the operation invalid. Besides, it is worth the while to admonish, and tell you that all Arfenick, and Antimony is auriferous, but yet so, as that one sort is richer than another, and that abundance of Copper and Iron hath likewise in it Gold, which no body finds out, nor can it be separated by that old beaten way of Cupellating it with Lead. But some, or other might here say, Where shall I find Arfenick, Antimony, Copper, and Iron, which have Gold in them? Had they any thing of worth in them, others would doubtfully have extracted it, and not have suffered it to come to my hands whole and found? To satisfy such an one, I answer thus, tho' those that work on the Metals, do for the most part know, that there is in Arfenick and Antimony, a Volatile Gold, yet know they not how to extract it thencefrom with profit, for the separating way they take would cost more than the Gold they should have would yield, because (according to their usual way and custom of working) all of it would vanish away with fume. And this is to be understood of Arfenick, Auripigment, Cobolt, and Antimony, all which may (by the way we have here mentioned) be tamed and introduced into Copper, and be made permanent and fixt.

But now, that there should sometimes be Gold implanted, naturally in Copper, and should there also be left remaining untouched, is so done on this account, because there is not in it so much as to pay the Costs of the separating it by Lead (for verily the Cupellating it with Lead on a Telt, requires great expences.) This is the reason why Gold lies immixed in the Copper oftentimes, and cannot be thence extracted with profit.

The same is to be understood of Iron, for a Vein of Iron doth oftentimes offer it self, which is very much impregnated with the more precious Metals, and yet no body either knows, or observes it. For the Ore of Iron is for the most part wont to be forced out by unskilful Men who have no care at all of the Gold, but only of such an Ore as contains a good portion of good and malleable Iron; and suppose they did certainly know, that there were in 100 l. of Iron, some Lots of Gold, by what means (I pray) would they extract it thencefrom? For Iron cannot be dealt withal by Cupellation on the Telt, much less can it be separated (as Copper is) by the means of Lead; so that there's no reason for any one to wonder

der that there are so few to be found, that promise themselves, or seek after much good out of Iron, seeing it is not so apt a Subject to be separated, and subdued as Copper is. But by the help of Arfenick, Auripigment, or Antimony, 'tis no difficult matter to tame, and bring it under, so as to make it yield forth what it has: And 'tis thus. This Iron, which is auriferous, may first be cemented with Arfenick, as we have aforesaid taught of doing so with Copper, then is it to be precipitated into Regulus by means of Antimony, which Reguli being imbued, or mixed with Lead, and reduced by Salt-petre into scoria, and cupellated, the Gold doth at last offer it self (which was hidden in the Minera's, or Ores, and so defixed) and that with no contemptible profit. But now if any hath a mind to have the business yet more perfect, he may instead of Lead, add some Gold, and then reduce the Regulus into scoria's, by Salt-petre, and abstract it from the Gold; for so the Gold you put thereto doth the better hold that other Gold which it has attracted out of the Regulus, and there is made a much more plentiful increase, than if the Regulus had been scorified upon Lead. Nor are the scoria to be thrown away, but they may be precipitated by throwing in live Coals, whereby the Salt-petre doth again let fall the Regulus which it hath swallowed up, and which Regulus you may separate from the dross which 'tis cold. This Regulus may be afterwards commodiously used in other Metallick Operations, that so it may yield anew out of it self the Gold; concerning which business there will a place fall in to speak of by and by. And besides, those drossy Offals (which for the greater part are fixt Salt-petre) are also of good worth, which may be reserved for the subsequent Metallick Operation, which may be stiled a perpetual Metallick-working artifice; so that there is nothing at all wasted, but all things are of use. And this way of the separation of Metals is so very profitable, as that any one may get himself sufficient gain for to supply the necessities of Life. But if you have no fanzie to meddle with Arfenick, or Auripigment, and would willingly shun them by reason of their poisonous nature, they may even be omitted, and you may cement that auriferous Iron, with the Golden Marchaite, melt it with Antimony, and precipitate it into Regulus's. For even by this means too, the Gold that was in the Marchaite, is brought in use, and yields an increase to that Gold which is extracted out of the Iron and Antimony. But if so be there be no Golden Marchaite to be gotten, that separation may be ordered, even with Iron and Antimony, and if the Iron be but auriferous, the Labour will not be without profit.

This kind of separation or eduction of Gold out of the volatile Minerals, and baser Metals will be an egregious aid or benefit to such as have learned rightly to operate in the Fire, and whom (otherwise) a grievous want of things and small estate afflicts; for there is enough of the aforesaid Minerals, every where obvious, but they cannot be well handled, or wrought upon by reason of their unfixtness and immaturity, and therefore do they lie neglected and as it were wholly useless, and are not made beneficial to any. I know that some do well understand the way of fixing Cobolt, and Bismuth by Salt-petre, and do thence get an abundance of Silver; and likewise there are some that know how to tame and subdue Arfenick Realgars by the help of Salt-petre, so that they suffer themselves to be molten, and yield forth their hidden Gold and Silver. But he that shall so manage the business

as to adjoin thereto the auriferous imperfect Metals, such an one will make a more successful work thereof; especially if he gets himself some auriferous Iron, the which he may get for a small matter: And besides, if he makes his Salt-petre himself, then all that whole operation of fixing or separating the volatile Minerals would be done with very little costs, and yield much gain.

NB. But now if any one would yet get more profit by this separatory operation, then he must contrive the doing it not in Crucibles or Pots, but in hearths (or furnaces) where a great heap of the volatile Mineral may by fixing Nitre melt together, and be precipitated into Regulus: then the Regulus may be separated from the Scoria, and be depurated by Nitre in other Furnaces, and be fitted for use; and so by this means may there be so much gain gotten, the like whereof, the great heaps of Ores which Men are necessitated to dig out of the bowels of the Earth with so much expence and charges, will scarce afford.

Likewise all Minerals may by the help of Salt-petre be fixed by the moist way, so as to yield permanent Gold and Silver; whereby (without doubt) full as much, if not more, is obtained, as is by the dry way. The way of operating is this. Dissolve a volatile Mineral, be it Cobolt, or Zink, Wilmuth, Calmei, Arfenick, Auripigment, or any other the like mineral, in alfrong Aqua-fortis; the solution being made, separate the Aqua-fortis again; then shall you have remaining a white Calx, which is fixed by the virtue of the Aqua-fortis: So that now it will admit of being molten with Lead, and being separated from the Scoria, and of being cupellated. But he that knows how to melt that Calx with Antimony and to precipitate it with auriferous Copper and Iron, gets more Gold than by that operation with Lead. But haply, every one can't perform that separation; for the excottion or melting, the reduction into Scoria, and Cupellating upon the Telt, are operations more known and easier to be done.

Moreover, there are also some Minerals, which may be fixed with the moist fire, that is, with a moist strong Aqua-fortis, so as to yield their Gold and Silver in the Scoria, but especially Tin, Quick-silver, and Lead: If a vehemently strong Aqua-fortis be but once abstracted from Tin, it makes it so fixt, as that it will not fly away in the greatest Fire, but will melt into a white Glas. But now, if you would have it to yield forth its Gold, you must melt other Metals with it, into which the Gold may insinuate it self, and be made corporeal, such as are Silver and Lead. Lead, if it be dissolved in Aqua-fortis, and precipitated by Urine, it gets such a hardness, that it will scarce melt in a Crucible; if you precipitate it with a Lixivium, it becomes glassy; if with Salt-water, it is rendered exceedingly volatile; for common Salt makes all Metals volatile, and on the other hand, Nitre fixeth them both by the moist and by the dry way, binds them, and constricts them to abide in the Fire; and this you are to know aforesaid. Now, for the better confirmation of this thing, see how easily the common Mercury is made to abide the fire, if Aqua-fortis shall have been several times drawn off therefrom, inasmuch that it will suffer it self to be made wholly red-hot. But now, if the same be sublimed with Spirit of Salt, it becomes more and more volatile, so amongst all Salts there's not one that fixeth Minerals, save this most noble Nitre, and this hath a natural aptness to do it both by the moist and dry way, as hath been even now demonstrated.

And verily, this way of fixing the imperfect Metals (which

(which is done by the help of Nitre, by either the moist or dry way) is to be preferred far before that which is done only with a Fire of Wood, not barely on this account, because it is sooner and speedier performed, but for this reason too, because it fixeth better and more durably; For if any one shall endeavour to make *Arsenick*, *Cobolt*, or other volatile Minerals, permanent or fixt, by the bare force of common fire, How much time, I pray, must he allow it? Haply it will require some months for this kind of Work, if not a whole year, yet at least half a year 'twill need; whereas by the means of Nitre it may be done in one or two daies: For if a volatile Mineral be mixed with Nitre, do fulminate, and be educorated, and that fulmination be repeated 3 or 4 times, it will afterwards endure a sufficiently vehement melting Fire. Or if a Mineral be only dissolved in *Aq. fort.* and that *Aq. fort.* again drawn off therefrom, it will even by this means be rendered fixt and constant in the Fire; so great is the force and virtue that lies hid in Salt-petre. And this the ancient Philosophers well knew, and therefore said that the most vehement Fire of all was to be used to the fixation of volatile Minerals; and this Fire is hid only in Nitre, and is no where else to be found; for the Central Fire hath too soon withdrawn it self from the volatile Minerals and baser Metals, and left them unripe, and they can be advanced to a maturity both by our common Wood-fire, and by the fire of Salt-petre, and be fixed. And now I suppose that I have more than sufficiently proved, by what I have said, That Salt-petre fixeth Minerals and Metals, both by the dry and moist way; nor can any one reasonably deny the same. Moreover, I judge it not fit to pass this too over in silence, *viz.* That Salt-petre doth likewise make volatile, not only the unripe Minerals, but also the fixt Metals themselves; so as that they suffer themselves to be sublimed and distilled wholly (like common Sulphur or Mercury) save the faeces, which are somewhat blackish and stay behind. Any understanding man may easily consider here what benefit is to be hoped for from such a Distillation of Metals; for seeing that all things are by distillation brought to the highest purity (as is clearly evident) it may well be concluded, that when in impure metals the pure parts are separated from the impure, something of excellency must therefrom proceed. I will say no more of this matter at present, for I have already clearly enough demonstrated and plainly enough delivered this kind of distillation or purification of metals, in the third part of my *Spagy. Pharmacop.* and have there shewn, that every imperfect metal, if it shall be distilled, yields volatile Gold, and that that volatile Gold may be made corporeal, without almost any Cost in a particular way, (and haply also in a universal, which I confess I have not as yet proved) thither therefore refer I the studious Reader of Hermetick and truly Philosophical *Arta* and Secrets.

But that the difference of those waies of fixing or concentrating the volatile Minerals, and likewise the imperfect Metals, may rightly be perceived and laid open, and that it may appear how much more commendous and easie that way which is done by Nitre is than that which is done with common fire; it will be a good help to set down here some process for an example, by which it will be manifest how laborious this way of doing it barely with Wood is, and contrarily how easie that way of doing it by the moist Fire of Nitre is.

It is impossible to fix *Arsenick*, *Auripigment*, *Cobolt*, and such-like as these are without the help of Salt-

petre, unless they are first introduced into other metallic bodies, and are together with them, burnt with a Fire of Coals, and reduced into Ashes, and turned into Scoria, and wholly destroyed, and then at last reduced again into a metalline form, by the force of the intense fire of a Blast or Bellows: All which, that they may be dexterously performed, you must proceed on this manner, as followeth.

First of all, the *Cobolt*, *Arsenick*, or any Realgar like these, that is auriferous, is to be introduced into Copper or Iron by cementation, in the way that we have aforementioned; then the Copper or Iron thus cemented with the Realgars, is to be reduced into fine powder, and to be commixed with Antimony, Calmei, or Calaminaris, the Marchasite, and such order is to be taken, (if for Gains sake you would do a greater heap of matter) to have them slowly and by little and little made red-hot in Furnaces or Ovens, such as in which the flame may have room to play, and as 'twere brandish it self at top of the matters, and stir them, and so let them be calcined and burnt into ashes, until they emit no more fume, and this will be in some few daies; then are they to be reduced in a convenient Furnace, and reformed to their metalline form; then again must they be put into the former Oven, and there be calcined and burnt into ashes, still stirring them to and fro, and the ashes are to be reduced, by the vehement Blast of Bellows, and this ashifying and reduction is to be so long repeated, till there be a Regulus found in the reduction, and all the residue turns into unprofitable Scoria. This Regulus then is to be reduced on a Telt into Scoria, and the Regulus being cupellated, the Gold and Silver which the volatile Minerals contained in them, doth shew it self.

NB. Altho' this separation is attended on with indifferent labour, yet notwithstanding (if there be a great quantity of matter dealt in) it is also gainful, especially where Minerals and Coals are to be had for a small price, and also the other imperfect metals (as Lead, Copper, and the like) that concur in this kind of Operation; by which it also comes to pass, that there is a greater quantity of Gold and Silver extracted. For example, I burn Copper or Iron with *Arsenick*, *Cobolt*, and other poisonous volatile Realgars, or with bare Calmei only, which also avails to constringe or bind fast; with these I mix Antimony, Bismuth, Zink, and Lead, and melt them together: Hence ariseth a brittle mass, which is to be reduced into ashes, either in Ovens, as is already foreswewed, with the flame of Wood, which darts it self at top of that mixt matter, and by heating ripens it, or by live Coals in a peculiar Furnace, and that on this wise: Let there be built a great or small Furnace, (of good Bricks or Tiles that will endure the Fire) according to the quantity of your matter which you take to prepare, let it be at least a foot over in the inside: in the forepart let it be open a foot's height from the Pavement or Ground, to this end, that the Grate may be put in and taken out, as need is. Then some 2 or 3 foot higher than the Grate, let a door be made, whereby you may throw in the Coals, and above or at top of the Furnace are to be made Chimneys, fitted to receive and condense the fume of the metal, that it may not fly into the air, but being there cool'd, may be taken out. All this being done, fill the Furnace with Coals, and when they are well kindled, cast in a portion of your metalline mixture, which will quickly melt, and being melted, will run through the fiery Coals, and still keep fuming, and elevate it self up into the appointed Chimneys; that which melts down

through the Coals and Grates, and is in the form of metal under the Furnace, (which bottom must be made somewhat shelving, that the metal which falls down may run into a hole or pit, is to be taken up with an Iron Spoon, and again thrown in upon the Coals, and this is to be so often repeated, and so long, till all your whole mixture be burnt into ashes, or carried up in fume, and so shall be ashified and sublimed in the appointed Tunnels or Chimneys, which Flores or metalline Fumes you must take and reduce them in a reducing Furnace, so part of them will pass into a fusile Metal, but brittle. This Metal now must be again ashify'd in that roasting or burning Furnace, and be reduced by blast of Bellows; and this ashifying and reduction is to be so often repeated, till all be seen turned into Drofs or Glas; which Drofs or Scorias are then to be reduced with the most vehement blast of Bellows, and so they will produce a Regulus which is to be cupellated with Lead, as is above said.

NB. But if so be that of the last-made Scoria a Regulus cannot be made by the blast of the Bellows, and that the Scoria remain Scoria, 'tis a sign that you have taken too much Tin, or that your Fire hath been too intense; and therefore you must take such Scoria, and beat them to powder, and mix them with a little of either the fluid Ore of Lead, or Spume thereof, and make them flow in a reducing Furnace, then the Lead draws the Gold and Silver out of the Scoria, which may afterwards be cupellated. But concerning the manner of making the roasting or ashifying Furnace, as likewise the fusing or reducing Furnace, I cannot indeed at present here decipher it, but I will do it in the Third Part following, where more such-like concentrations of Metals shall be mentioned and treated of. And farther, the well-minded Reader must also know, that this kind of Concentration is not at all written for those that are as yet wholly ignorant of the Art of melting metals, but for such only as have already sweated at the Fire, and have been often and much versed in such Separations or Liquefactions.

I question not, but there will be many that will despise this my way of operating, and count it an impossible thing, such are to be left to please themselves with their own fancies. But withal, some will be found, to whom the nature of metals is known, and these will give credit to what I say, and will abundantly profit themselves, especially in those places where Minerals, Coals, and other things requisite are to be had for a small price. The greatest Expence in this way of Concentration is the Coals, which too cannot be any thing much in those places where there are such vast Woods. Every one may have his liberty to try it or let it alone.

NB. But I do openly affirm, that if so be any one shall know how rightly to handle and manage this Work, it may be compared with the perpetual or alwayes-lasting mines; and where minerals may be had, it will be most gainful; but I will not perfwade any to attempt it in those Coasts where all things are dear. Nor do I think it amiss to disswade them that have no experience in these kind of Operations, lest upon the ill management of the Operation, the effect should not succeed so luckily as they hoped for, and that then they should lay the blame upon me. That which I have at present written, is agreeable to the Truth, and may be successfully and gainfully performed by an experienced Artift or Laborator: And therefore as I have afore warned, so do I again advise the unexpert to abstain from this Work, unless he means to lose his Labour and Expences.

Such things as I have here omitted for brevities

I take to speak of the *Concentration of Metals*, the Third and Fourth Part shall abundantly declare; but whoever he be that shall know how to bring to pass such a Concentration, either by the means of Salt-petre, by the dry way of a flame, or the moist way, by the help of *Aq. fort.* shall have a better effect than he that useth the Fire of Wood; but on the other hand, this Fire by Wood is of less Cost than the administration of the Work of Salt-petre is. Alas! What a deal of costs and labours have I bestowed in my life, in searching out and trying those kind of busineses, and having now brought it to this pass, as to be able to yield me the Reward of my Pains, I am not able to manage so vehement a fire, and to order the matters which require so great a heat? Therefore do I now with a willing mind make an offer of these my Experiments, to those who are of a vigorous age, and have Bodies capable of undergoing the toiling in the Fire. But that I may return to the things afore spoken of, and that that ashifying and reduction may not seem to the unexperient'd altogether impossible and incredible, I will for their sakes bring undeniable Reasons or Arguments, whereby it shall be sufficiently enough evidenced, that such a cineration or turning into Scoria, hath its foundation in Nature, and that after this manner: Whosoever he be that hath seen or experienced somewhat in metals, knows, that the separation of the more excellent metals from the more vile, is to be done by the benefit of the Fire: for if so be that Gold, Silver, Copper, Iron, Lead, Tin, should be melted together into one mass, and you would separate them by the Fire the one from the other; this cannot be done any other way, but by adding to that mixture some other adventitious and destructive thing whereby the baser metals may be dissipated and deprived of their metallic form, of which sort is common Sulphur and such-like; for such a cineration on the imperfect metals, destroys them, or brings them into scoria and drofs, which when they are so, and no more metals, they have no communion with metals, nor desire or love to be commixt with them afterwards: and by how much the more sulphureity there is in Metals, so much the easier doth common Sulphur destroy them and turn them into Scoria: But, by how much the nobler the metals shall be, so much the less detriment doth Sulphur bring upon them, and the less able is it to disturb (or alter) them. But besides, Sulphur does not only do this, but even the Fire, and Salt-petre both in the moist and in the dry way. It is done with Sulphur, if the metallic mixture be granulated and burnt therewithal, or that it be despoiled of the metalline Nature, then must it be molten and by precipitation be driven or be separated into divers Regulus's. For the Sulphur converts the Mass into Scoria, which when they are molten, that which in them is the most noble doth always separate it self from the Scoria, and settle to the bottom; then next the most noble part comes other which is excellent, but yet short of the former; and so consequently it descends from one degree to another, as from Gold to Silver, from Silver to Lead, from this to Copper, from Copper to Iron, &c. as hath been by my formerly described separatory Art sufficiently enough shewn. But Nitre performs the separations it makes in a different manner: For after that the metallic Mass is molten in a Crucible, and that this (*viz.* Nitre) hath been therein put, it doth in the first place set upon the sulphureous part, and turns that into Scoria, then the baser Metal, and thus it does on, so long till it hath attracted all the imperfect Metals to it self, and reduced them into Scoria: and so the perfect Metals remain alone, pure &

which order or governance of Operation, is also to an again, extant in my Writings.

Again, the bare fire is wont to keep another different way of destroying and scorifying Metals, than Sulphur and Nitre do.

For if a Metalline mixture be put in the fire, the more imperfect part thereof is consumed in the first place, and driven into ashes, the more excellent part gathers up it self into a globular form; and as long as it finds any consumable therein, so long does it work and act thereupon, nor leaves it off afore it hath reduced all into ashes. But that part which is of a constant and durable nature, remains unhurt by the fire; but yet if the combustible part be too much bigger in bulk than the abiding part, it does not only carry away with it the silver, but sometimes also a good part of the Gold, and brings it into ashes. And now, if those ashes shall be molten with a strong fire, then the ashes which arise out of the imperfect Metals, are turned into Glaſs, or scoria, but the ashes of the perfect Metals do reduce, and restore themselves into a malleable Body, whether it be Silver or Gold, according as it had this or that Metalline mixture in it; and if you proceed yet farther, with melting the aforeſaid scoria in the fire, there will a new Regulus fall out, which contains in it that Metal, which is the nobleſt next Gold and Silver, viz. Lead, and Copper; the Tin, and Iron do for the most part abide in the scoria: Even as it is in Cupellation, or the separation of the Metals by the Cupel, the separation is there also done, by the bare fire only, and when the fire acts upon the mixture, it reduceth the Lead into scoria, or spume, or Litharge, and while this is reduced thus, it spares not the Tin, Iron, or Copper, forasmuch as they are likewise combustible, and of affinity thereto, but turns these together also into scoria, which said scoria do then creep, or sink into that penetrable, and porous Cineritious Vessel, or Telf, as long as any of it remains: But the Gold and Silver which know not how to be thus burnt up into scoria or ashes, like the other imperfect Metals are left depured and cleaned upon the Cupel: The like also, is to be judged of the aforeſaid incineration of Volatile Minerals, or imperfect Metals; that is to say, when they undergo the force of the fire, they cannot but go into scoria and ashes, and if they have in them somewhat that is especially good, and durable, yet the greater part being combustible, has the prevalency; so that the more excellent part which is in it, is converted together into ashes and scoria. But yet it may be afterwards reduced, for by the vehement blast of Bellows, it separates it self from the more base part, and again assumes a body Metalline, whether it be Gold or Silver.

By this Discourse any one that is not wholly void of all Metallick knowledge may see, that the Metallick Incineration and Reduction, which we have afore delivered, is built upon a firm foundation: But he that cannot understand or apprehend these things, is incapable of being holpen by any art. But the following third and fourth parts will yield a more clear light, or instruction. Furthermore you are to observe, that there are likewise other ways whereby Metals are reduced into scoria, and the better and more excellent part is afterwards extracted out of the scoria, viz. by the help of Terrestrial things which are together, sulphureous, of which fort is all Sand, Flint, and the like. If ought of this kind be permixt and molten with the metalline Calxes, it retains with it the viler part, and lets go the more excellent;

as for instance, there's the Glaſs of Lead: For if the ashes of Lead be molten with Sand, or Flints, all the Lead together with the Flints is converted into Glaſs, or scoria, but the Silver or Gold which was in the Lead separates it self like a Regulus, and descends to the bottom.

Some kinds of Salts also are able to make those scoria's, viz. those Salts which are extracted out of burnt ashes, and are commonly called Alkalies, such as are the burnt faces of Wine, the Tartar of Wine, Potters-ashes made of the ashes of Wood, and other such like; these also love to dissolve the sulphureous parts of metals, and do leave the Gold and Silver that is therein whole and found, and so make a separation of the good from the evil, and give them a notable splendour: Concerning which washing, we will treat more fully in the following third part.

Besides too, even common Salt destroyeth and reduceth the imperfect metals into scoria, but not after such a manner as Alkalies do by washing, but by dissolving and extracting. For if a metallick Calx, or Ore, be powdered and mixt with common Salt, and molten together, the Salt doth more readily seize upon the metal, than on the rest of the droffines, dissolves it, and turns it into as it were scoria. But to illustrate this thing by an Example. If I would separate a mineral which hath in it, Iron, Copper, Gold, and Silver, and should melt it thus mixt with the Salt, then the Salt would the first time lay hold on the Iron only, and leave the other metals; but if so be there were not so much Iron, as for the Salt to satisfy its devouring self, it would dissolve the Copper too, and the Silver and Gold remaining untouched; for Salt is a common Enemy to Silver, but a Friend to the Iron and Copper, which it willingly dissolves in the melting, and attracts to it self, whether it be each apart by themselves, or both jointly together, which if you are minded again to separate each from the other, you must powder that molten Mass, and pour water thereupon, and boil it; so the Iron and Copper enters into the water, together with the Salt, whereinto if you afterwards put some Iron Rods, the Copper precipitates it self, and the Iron abides in the salt water, and is made very fit to use in dying like Vitriol; but if it will not be coagulated like Vitriol, then the Copper (which hath precipitated it self about the Iron) is to be waht and molten, out of which comes purer Copper. But yet such a Copper may be converted to better use than to be molten, of which more shall be spoken in the third part.

By this means, may one separate and bring into use those Coppery Minerals, which have much Iron in them, and by which, the Copper is otherwise rendered unalleable and unprofitable: and this is such an Evil, as the Metal-workers have hitherto little known what remedy to apply; whereas in the mean while there lie in many places no contemptible Mines of Copper, neglected and unmeddied withal, because they have Iron commixt with them. Some there have been, who have endeavoured to extract the Iron by the help of a Load-stone, but this way is too troublesome, and so is not profitable; but it may be aptly and conveniently done after this manner, did they but know how rightly to use here that aforeſaid salt water, and the precipitated Copper: For the salt exalteth the Iron, and the Iron doth again exalt the salt, and animate it, so as that it may afterwards with a little labour and costs be, all of it, and without any loss, converted into good Salt-petre. But some or other may say, what profit would there redound unto me, if I should

should season one or two, or more Copper minerals with salt, whereby the Copper may be thence drawn out? I would have such an one to know, that in that Operation, some hundreds, or thousand pounds may be done together, and the business may be ordered upon fire in distinct Furnaces, that so a great profit may be gotten; and not only thus, but the same may likewise be done without any Furnace or Oven, with many hundred, or thousand pounds in one Operation, at the open Air in the Field, or in a Wood, where the Ore and salt are to be found; so that the salt may serve as a covering to the mineral, and the mineral as a covering to the salt, and the Wood may serve both for the Furnace and fire.

This now in my judgment is an artificial extraction of Copper out of the Mines, (especially when 'tis such an Ore, which (otherwise) is not of any profit by reason of the immixt Iron, or else consists of such a lean Vein of Copper, as will not suffice to quit the costs of getting it out, but yet it may by this means be separated, with no contemptible profit. For there are every where almost such poor Copper Ore as this which lie and are not dreamt of: For indeed it cannot be expected, that, (if when a Copper Mine (or Ore) doth contain in it some small matter of Copper, it being so overwhelmed as 'twere with the muchness of heterogeneous medlies or mixtures, that it cannot precipitate it self into Regulus's but passeth into Scoria) it should answer the costs that are to be spent on the forcing it out; and therefore such Miners's mult of necessity remain without use. And how many such kind of Ores have I found in Germany, which a man may have by heaps, but no body regards them, for that (as we have already said) they are too barren or poor: Whereas notwithstanding they may be most easily perfected by the help of Salt, so as to be made very gainful, & the costs exceedingly well repaid that shall be laid out upon them, especially in those places where there is such an abundance of Salt, that the Inhabitants know not what to do with the plenty they have of it. Many such places there are in Germany, as Tirole, Saltzburgh, Bavaria, and the Diocess that we call Bergjes-gaden: in which places all the whole mountains do not only abound with Salts, but have no small portion of Copper too: Nor is it so in those places only, but likewise every where; Salt is common and of a small price throughout all Germany.

And as we have already shown you, that Iron and Copper may be commodiously extracted out of the Ores by melting it with common Salt, and may be again separated from each other by precipitation: So likewise may the same be done in a moist way by boiling; and is thus, if the Ore be ground and a long while boiled with very Salt-water, the Copper will be dissolved and passeth into the Salt-water, out of which it is to be precipitated, and so fitted for use. But now, if the Salt be distilled into a Spirit, then is it apt not only to extract Copper, but also Gold out of the Ore, and will be of exceeding much profit: But this Operation hath already been long ago described by me, in the First Part of the Mineral Work.

NB. But it will be yet more profitable and gainful to prepare that water out of the Salts and especially out of Nitre, which water is but of small price, and yet notwithstanding it is of that Power and Virtue, as to dissolve or extract all the Metals out of the Ores: and as well the Silver as the Gold and Copper in the solution, may be again precipitated singularly or each *Per se* one after another; and this kind of water may you likewise use about all Fossiles or Ores with a most wonderful abbreviation.

But now, if you use common *Aqua fortis*, it extracts only the Silver and Copper, and leaves the Gold: and if you take common *Aqua regia*, it attracts only the Gold and Copper, and leaves the Silver; so that neither of these hath (as we use to say) all the points in it, especially seeing such a kind of Water serves but once only; nor is there as yet any one found who knows how to separate the metals in the solution one from another, so as that the water may still remain good and fit for other the like uses. But as concerning this Water of mine, thus stands the case, viz. One Metal may be precipitated after another out of the Water, and each distinctly, and yet for all this, the Water loseth not ought of its Virtue, but may be many times serviceable; certainly it is a most profitable invention, which (in the doing or perfecting some metals and minerals) is to be preferred many degrees before any melting by Fire. For if that there are several Metals of diverse kinds, in one Ore; as Gold, Silver, Iron, Lead (and this often happens so) and they should be forced out by Fire, they would yet remain mixt together; and there's a great deal of work to separate them. For first they are to be cupellated on Telfs with a great deal of Lead, that so the imperfect Metals, as the Iron, Copper, Tin and Lead if therein, may go off; then the Gold is to be separated also apart, or by a particular operation, by the help of a separating Water, and this is not every bodies work, nor have all such as are skill'd in the Art, in all places necessary provision at hand. But on the other hand, there needs not in that other kind of way, any thing save the Water and some Glaſs, with these may you manage and compleat all the whole business, and get a great deal of gain without noise and trouble. For as to such a one as betakes himself to this kind of work, his Neighbours cannot accuse him, that he will (one time or other) ruine their Fortunes and Houses by Fire, for they hear no blowing of the bellows, nor see they any Coals carried into his Houſe. Nor will the *Smithe* say that 'tis his fault that he will ruin the little Country fellow. Besides too, he will shun the suspicion of the Magistrates, nor will he give them occasion to suspect him to be a rich blade, and so torment him with the more grievous exactions and with quartering of Souldiers.

And now yet more, This kind of extraction does not only appertain to the getting out the Gold and Silver out of the Ores or Minerals and such as are volatile and crude, and which are every where to be met withal, and may without detriment to any, and with a safe conscience be fixed and separated by the help of this Water: But you may also by the mediation of this Water, profitably and with very small Labour separate all metallick mixtures, such as are mixt at their first forcing out of the Ores, or are melted into one Mass on any other account, and so obtain each Metal pure and free from all heterogeneities. As for example, put case I have in my hands a certain metallick Mass, which hath in it Gold, Silver, Lead, Tin, Iron, and Copper: Now I would willingly separate the Gold & Silver therefrom: hitherto there hath been no other way known of obtaining it but by cupellating such a Mass or mixture upon the Telf with Lead, and so deparating it; in which cupellation, the Copper, Tin, and Iron, do pass together with the Lead into the Telf, but the Gold and Silver remain behind, which are to be afterwards separated with *Aqua fortis*, which you may have each by it self. But the Iron, Copper, Lead and Tin do remain intermixt with each other in the Telf, and should you again melt them even by the strongest

strongest blast, yet will they be commixt, and can hardly be separated the one from the other. But by this way of ours if they be dissolved in the water together, you may continually precipitate thence one Metal from another, and take them each apart, and not only the Gold and the Silver by themselves, but the Copper, Tin, Iron, and Argent-vive (each apart).

But it is not so necessary (if in such a metalline Mafs wherein are contained for many Metals, the Gold and Silver be but the smaller part) to dissolve all the other baser metals together, to get out the Gold and Silver; this will not be advicably done, but it would be better, first to purify that Mafs upon a Telt with Lead, and then to separate the Gold and Silver by the help of that water, or else that Mafs may be burnt with Brimstone, and the Gold be thence precipitated and depured. But if the Mafs hath less of Iron, Copper, and Tin, than of Gold, there will not be such need of purifying the Mafs, by first burning it upon a Telt, and then separating it by *Aqua-fortis*, as is commonly known and used to be done; but the whole mixture must be dissolved, and the Gold and Silver, which you please, be separately, or apart precipitated into a clean Calx, then the Copper also apart, then the Tin; but as for the Iron, you may forbear to precipitate that, because there are no great matters to be performed with its Calx, and it will be better to draw off the *Aqua-fortis* thence, whereby it may again be had pure, and fit for use.

Then the Iron which abides behind, if it be made red hot, yields a most excellent Crocus Martis, and a most excellent Ingredient for Chirurgions, for all their Wound-balsams and Exicatory Emplasters; it is stickie; it will also be serviceable to Painters to make exquisite colours therewithal, so that the Iron which is the basest Metal in the whole mixture, if it shall be thus wrought upon and brought into good Crocus Martis, yields the money that was laid out upon the water, and yet this very water, after its abstracting from the Iron is not less fit for use, but is better than it was before. For in its abstraction from the Iron, it brought over with it some Goldenness, which Golden property doth afterwards, in other metallick solutions, associate it self to the Metals, is imbodyed, and yields as much Gold as the price almost (of the water) afore (thus used) could be judged at.

So likewise there's no need of reducing the Calx of Venus into Copper, but it is twice more precious than other good common Coppers, because it can in a few hours space be changed into excellent Verdigrise, and so is 4 or 6 times the value of Copper it self. Further, it is not needful to melt down the precipitated Calx of Silver without any farther profit, but 'tis better to melt it by the means of the liquor of Sulphur or Antimony; for by this operation will it become auriferous, and be meliorated. Finally, you are not bound to melt even the Calx of Sol, without any profit in melting, but you may even therewith draw some profit; for if it be amalgamated with the Mercury of Φ or Ψ it becomes more augmented from the Φ and Ψ ; or else it may be used by the Goldsmiths to Gild withal, and by Painters, if its brightness and splendour be first restored unto it, for so it may be used about Painting or writing. So then, from this operation doth result a manifold benefit, and both the Iron and Copper, as also the Gold and Silver are rendered better, and more precious than they would have otherwise been, if they had been separated each from the other after the common manner, by the fire.

Therefore, there is not only a great benefit gotten

in that way of operating, in thus extracting Gold and Silver out of their Ores, and out of the Crude Minerals, and in this so compendious a separation of a Mafs (or mixture) of Metals; but also, that separation brings more profit than the commonly used and perceived way of separating Gold and Silver by *Aqua-fortis* doth, in which way the Mafs is to be first burnt to purity, and all the heterogeneities are to be taken away upon a Telt; then the Silver is to be dissolved in *Aqua-fortis*, and to be separated from the Gold; this done, then the dissolved Silver is to be precipitated either by Copper, or by putting water thereunto, or else the water is to be thencefrom distilled; from whence, there is not only to be expected no greater profit than what is had (or gotten) out of the Gold separated from the Silver, but withal even half the water is lost. But now here (in my way) the greatest part of the *Aqua-fortis* is preserved, and is indeed meliorated (if there were Tin or Iron in the Mafs) the very bare Crocus Martis only yields as much as the water cost, & the Flos Φ is meer gains; the Calx of Silver is by a solution of Antimony enriched with Gold, the Golden Calx is augmented by Saturn, and Luna, so that the gain is fourfold, besides that Gold which is gotten by separation out of the Silver; and now may not I justly call this an Artificial extraction or separation of the Metals, by the moist way; but now, like as this is a very notably profitable way of extracting the Metals out of the Ores or Minerals, & of artificially separating them by the moist way; so likewise may the same be done in the dry way by fusion; if (*viz.*) the Minerals are dissolved by Antimony or Lead, & one of the Metals after another shall be thencefrom precipitated; so that it is not so altogether necessary to cupellate such a Mafs, and by the separatory water (or *Aqua-fortis*) to separate that, which (by that burning on the Telt) shall have been throughly purged; But if all the Metals shall be molten together into one Mafs, there may (first) be precipitated the Gold, then the Silver, then also the Copper, and by the help of Nitre be rendered pure and malleable; and this too may be done without much labour or costs; so that as well by the moist, as also by the dry way, all the Metals may be very commodiously and compendiously, and in short time separated the one from the other by the benefit of Salt-petre. Suppose I have a Mafs that has Gold, Silver, or Copper and Iron in it, and I would have it suddenly depured; therefore I may only burn it with Sulphur, and by the help of Saturn precipitate one Metal from another, and purifie the Regulus, by Nitre, and such a Mafs though it were 100 pound weight could I separate with the easy labour of one day, & for 3 or 4 Dollars costs; but as for such an one as hath no use for solution & precipitation, or hath not convenient melting Pots and Furnaces, he may granulate such a Mafs, and thence precipitate the Gold, Silver, and Copper, each apart, and draw off the water from his Mars; then the Mars yields him the price of the water; the Calx of Venus yields the reward of his pains and labour, and the augmentation or melioration which happens to the Calx of Sol and Luna in the reduction is clear gain; so that the Gold and Silver are, as it were gratis, and without any expence separated from each other, and that both by the dry way and by the moist way; for the Silver is equally as well graduated and made auriferous in the dry way, by the fusion or melting in the operating, or by the transfusing (or through melting) with the Antimony; so then good Gold may by this way be precipitated out of any Silver

which

not aurous, provided the business be but dexterously managed.

In the first part of this Book, (where I treated of the concentration of wood,) I wrote, that a Juice might be pressed, by a peculiar Press, out of any wood, which afterwards might be turned into good Salt-petre by the benefit of the Air and time: I likewise there added some reasons, whereby it might be evinced, that it was possible for Art to perform such things, which are no other but the Rewards Nature her self yields, and that the Salt-petre which is wont to be every where digged out of the Stalls, or Stables of Cattle, is nothing else but the essential salt of Vegetables, and Animals, which is in a long tract of time, and by the hidden virtue of the Air, turned into Salt-petre.

But now if any one should haply persuade himself, that if he exposth that Juice of the Woods to the Air for some Days, or Weeks, that it will presently become Salt-petre, certainly he would be much besides his aim, neither indeed is it lawful to prescribe Nature the time of her Operation.

Does not a Husbandman deserve to be called Ais, or Blockhead, if some few days after he hath sown his Corn, he should go into his Field to see if his Corn were ripe or not? Just thus are you to conceive of this work, for in all things must you expect the due time, in the Generation both of Animals, Minerals, and Vegetables, so that there is not the least need of any farther proof of this matter: For every Generation requirith its own proper time.

But, that very many haply have wearied themselves with imagining about that kind of Press, which I have mentioned in the first part of the *Prosperity of Germany*, and yet have not found it, is not to be much wondered at. However it is assuredly true, that such a Press may very easily be prepared, by which you may daily press a great quantity of Juice out of Wood, be it believed or not believed. But seeing that such a Press hath been seen with me, and hath been beheld prepared, and wood squeezed out therewithal, and set to ripen in the Air, sure it cannot be long ere the truth will manifest it self and publicly vindicate it self from all its slanderers.

I say again, that such a Press is found by me, and that it is an artificial one, and is of less costs than will be easily believed. Nay more, every day brings forth new and better Compendiums, so that there will not hereafter be any use or need for the Press, to squeeze the wood out by: but every Vegetable and Animal, may without labour and trouble be in a short time, and without the press, transmuted into good Salt-petre, so that many hundred weight of Salt-petre may be generated, or produced (by the labour of only one person) out of the bare Wood, Leaves, and Grass, (where they may commodiously be had) and yet 'tis not the person aforesaid, but the air that causeth this Generation: for the person doth no more but expose to the air the subject matter, upon which it may operate, and out of which it may bring forth Salt-petre.

But there is nothing which I admire more at, then, that this present Age is so sluggish and averse from searching after the secrets of Nature. Whereas, were but the Properties only of that stupendious, or wonderful subject Salt-petre, well known, there might well be a forbearance of reading many Chemical Books seeing that by it alone may many wonderful things be performed. I have a little afore shown, how both a moist and dry extraction of Gold and Silver, & the other metals is to be done by Salt-petre; and if Nitre were of no other use but this only, yet were it well worthy to be beloved and esteemed by all, and they should as much as in them lies labour not only to produce it in plenty out of vile things, but withal to

know how to make use of the same with profit.

But whereas I have not so very openly and clearly described, or published the precipitation which is done as well by the moist, as by the dry way of the extraction and separation of metals; I would not that any one should take it in evil part; for there are exceeding weighty reasons, that make me fear to prostitute such excellent Inventions, or to chew meat (as it were) and thrust it into every Ais's mouth. Let it suffice, that I have shewed, that such things are possible. But yet the Art lies not so fixed in my breast, nor is it my mind to suffer it to lie buried with me: No, God hath blessed me therewithal meerly for this end, that I might help and succour others, to the performance of which, I am most ready and willing; but yet not every one without any exception, but such as are ingenious Lovers of the Wonders of God, and know how decently to use all things, least being too providently liberal, should put new Weapons into the hands of mine enemies.

I could have buried-over these things in silence, and haply been at more quiet, but it was no ways possible for me to suppress the wonderful Works of God, so as to withhold them from coming abroad to light, and to the view of Men, to the Honour of God. And whensoever it so comes to pass, that the things delivered at present in this second part, and which shall be delivered in the following third and fourth parts, shall be believed, and be brought to effect and be done: then all the crew of Slanderers and Enemies of the truth shall be confounded with shame, and before the whole World, and that Genuine Alchymy, shall again be embraced, and honourably flourish: For Salt-petre must be the Matter, as *Paracelsus* saith, in a certain Chapter where he treats of common salt, and mentions Salt-petre with a commendable Testimony. Nor hath *Basil Valentine* done a less faithful Work as to his Nitre; but few there are that understand it.

I am not of the mind to boast of the knowledge of many things, but yet thus much I find, that there is not in all nature any subject given that may in good deed be compared with Nitre, as to eminency or excellency; much less deserves to be preferred before it. Let not the Lover of this Art be disquieted in his mind, so long as there are two parts to follow, and come forth: For then men will see, and be even enforced to confess these things which afore they did not believe. And upon this score do I shorten this part, that I may the sooner come to the third and fourth parts: In which parts (God willing) there shall be disclosed many most highly profitable inventions for the benefit of mankind, but yet they shall be veiled, after that same way and manner, as others afore me have used to do, that so Pearls may not be cast afore Swine.

But that I may return to my purpose, and shew that what I have said is true, and that great things may be done (as to the melioration of Metals) by the help of Salt-petre, it will be necessary, that those things which we have already written in this second part be made a little more clear, and may be visibly demonstrated to the unskilful and incredulous, in what it is, that this profit we at present speak of, is seated.

And first, as concerning the Generation of Salt-petre, there hath been enough said already, *viz.* That it may be prepared by heaps out of otherwise unprofitable Wood, Shrubs, Briars, &c. which rather enrage the Ground, than do any good, because they become a refuge for cruel Beasts, which sustain themselves upon the great ruining of the other Wild ones: Nor needs this work any greater costs than to cause a Houle to be built in the Woods, under which the wood, together with the circulatory Vessel, may

Pppp stand

stand dry; and besides too, one man is sufficiently able to manage the whole business, nor is there any thing else required but those unprofitable underwoods, or Briars, &c. or if you have not such, then, the Leaves that the wind blows off from the Trees. And if also you add some Salt thereto, even it will be likewise turned by the help of the wood into Salt-petre, and hereby will arise a greater profit: Neither is there any necessity of taking the Salt we use to season our meat withal. But yet if you can have it in plentiful quantity (as may be in many places of Germany, where it is much abundant) it will be well, but if it be not to be so easily had, the wood it self will make Salt-petre enough; nor needs there any other thing, but to begin the work, and let Nature alone to perfect it, and to produce the Salt-petre. But farther, as Germany doth never want store of wood, so wants it not fat, for there are whole Mountains of salt, which to exhault, is a thing impossible; especially in the Territories of the Arch Bishop of Salzburg, in the Elector of Bavaria's Country, the Diocess of Breytschaden we call it; which places, besides their abounding with Salt, do also abound with store of Wood. Have I not reason to believe that great Treasures and Riches may be hence reaped. Salt they have at their Feet, and vast Deserts at hand, which are of no use: O improvident Mankind! What account shall we give that so behave our selves in our Stewardship. Would it not be much more praise-worthy to have drawn forth those Treasures, to the Honour of God, and not to have suffered them to have remained without being used, and unmanaged; what is the greatness of the charge requisite to the carrying on this Work that deters them? What expence I pray it is, seeing that a little thread may easily be built in the Woods? And besides, where great Woods, and many Trees are, there are also found Minerals both ripe and unripe, and the ripe may be forced out by Wood, or Coals: the unripe may be fixed, or ripened by the help of Salt-petre, and the Gold and Silver also may be afterwards thence separated by the Salt-petre.

And now I pray, would not the Country be enriched hereby with vast Treasures, and store of Wealth? But put the worst, if every Country did not abound with store of Wood, yet hath it a great deal of superfluous Grass and stubble, and this yields as good Salt-petre as the Wood does. And if in case every Country, or Seignory had not Minerals of their own, which might be ripened by Salt-petre, and from whence Gold and Silver might be drawn, yet nevertheless may they be had out of the bordering Provinces. Nay more, if so be the already excocted Metals should be advanced to a maturity by the means of Salt-petre, yet would not even this kind of work be without an acceptable gain, and it would be better for us so to do, than to hang them up at the Walls in our Houses, for Ornament, and Pride's sake. If an Enemy comes, one Ounce of Gold, is better than a Thousand pounds of Tin, or Copper, which the owner thereof must necessarily be constrained to leave behind him, whereas he could carry away the Gold with him; which kind of concentration we shall treat of in the following third part: and in the fourth part shall be taught, by what means even Gold and Silver may be concentrated, that so it may lie hidden from the Enemy, and be transported (under another kind of form or shape) into such places, where it may be free from the Enemies Clutches.

And farther, that water which we speak of, serves not only to extract Gold and Silver out of the Ores, or Minerals, (which otherwise, could not be drawn forth by any excocting or forcing) but also for the tanning, and bringing to use that which is in huge Stones, Flints, and the baser Fossiles (in which, Gold

and Silver are only as it were, a little sticking, and will not be thence had by any art of melting) and that with profit too well worth the Labour. So that there is scarce required 6 or 7 Loths of water to extract the Gold and Silver out of 100 l. of Ore; and if there were but 2, 3, or 4 Lots of Silver at the most, in 100 l. of such matter, yet would it be a gainful extraction, especially if the things, or subject, be Arsenick, or as yet Volatile, and cannot brook the intenseness of the fire, but are driven away by a strong blast. For in that extraction by the water, that which is volatile, is fixed, and retained together, that it afterwards admits of being fused, or molten, and that this is so, will evidently appear to any, experimentally. Let him but take Arsenick, and dissolve it in Aqua-fortis, and again draw off the water, and he will be able presently to melt the Arsenick, and make it red hot. Quicksilver is well known to be a very Volatile matter, but yet even that, (if the water of Salt-petre be several times drawn off thencefrom) is made so fixt as to stand and abide wholly in a most intense fire. For, that which Wood and Coals do (in a long time) perform; the very same doth such a water effect in a few hours space.

But some or other may oppose or question this; How can it possibly be, that if those matters be so very poor, 8 or 10 pound of water should be sufficient to extract the Gold & Silver which is contained in them; for it seems as if 8 or 10 pounds of water were hardly enough to moisten 100 l. of Ore or Minera, but would be lost amongst such a deal of Stuff: Let such an one know, that what I have written is possible and true; I can prove it and demonstrate it even to the sight; but as concerning the administration of that Work, 'tis not fit it should be made too common.

And verily, in this sticks the main difficulty, here is the Art and Skill; 'tis not for every one to acquit himself here, and if that the gold and silver were extracted by means of this Water, yet even then the chiefest of the Art is to know how to precipitate the pure Gold and Silver thencefrom, and incorporate it, which knack I justly reserve for my Friends; for verily, this is such an Art, as by the benefit of it alone I shall renew ancient friendship with many, and moreover purchase me more new friends: And therefore let no body be angry at me, or count it amiss, that I would not publicly disclose so excellent an Invention, and put new Weapons into mine Enemies hands to hurt me withal. [This is taught in the following parts.] And if I should do so much as clearly to mention every thing, yet nevertheless should I incur the enmity of many men, as much as if I never had done it; and besides too, it cannot possibly be, that all things should be so nakedly and plainly decyphered to the unskilful as that they should presently be able to do every thing. If they once make trial, and cannot do the business that they aimed at in their minds, then they curse him that writ, and bestow many a bitter will on him, as if he had been too obscure in expressing himself, and so they despise that which is otherwise laudable.

But if so be that the possibility of a thing is only demonstrated, and no Receipt added, then they will not undertake any fruitless Labours, nor will have cause of cursing any. But some or other may here enquire, Where shall I find such a sort of Minerals and Fossiles, out of which I may extract Gold and Silver? If any such had been to have been found, they would have lain idle & waited for my coming; others would have taken them away long ago, and converted them to their own uses. I think it expedient to demand as well of such a one, who those others should be, that should have taken them away before thee? If their Experience be as little as thine, and thine no greater than is theirs, there's no danger of your fore-prevent-

ing or deceiving one another, seeing you are all alike ignorant of the thing.

Think't thou that the number of those that are experienc'd in Metals is so large? 'Tis confess'd, there are enough Excocters or Metal-Separators, but yet they must per force leave that untouched which they cannot find out, seeing they know no other way of ordering their Affairs, but the old Road. It oftentimes happens, that there is more Gold driven away into the air by these Excocters, than is left behind in the fire, and yet forsooth that Crew arrogate to themselves abundance of knowledge, and perfwade themselves, that they stand not in any need of any ones advice. Nor indeed do I invite them to any new Studies and Operations; let all such as list, use the same way of excocting or separation that they have learned; but if there be among them those that are not ashamed to learn better, such may be counselled. My purpose at present is, to do some acceptable Service to those that have no Mine-pits, and who cannot separate Minerals or Ore in gross, as I may say, and yet would be very glad to enjoy in private some little small gleanings as 'twere of the bits or small pieces that the Excocters leave, whereby they may get sufficient gain for the commodious sustaining of Life. These are they whom I have a mind to assist, the Richer sort have enough already to fill or satiate themselves withal; nor need they any information of mine; as for the Poor, there's no regard had to them. The whole Artifice therefore consisteth in the extracting (when there's but a very little Water used) and then in the precipitation of the Metals, so that the Water may remain good, and fit for other uses. There's plenty enough of poor Minerals and Fossiles even every where, and which no body regards and knows. It would not be amiss to look upon or consider of all Flints, Rocks, and Stones you meet with, and consider what property they are of.

Concerning this I have written in the First Part of the Mineral Work, viz. How by the Spirit of Salt Gold may be extracted out of a Flint: But as hitherto, few there are that have set about that Work, partly because they could not prepare the Spirit of Salt, and partly because they knew not how to precipitate from it the extracted Gold, nor knew how to melt the extracted Calx of Sol with Antimony; all which I must needs confess, is not for every one to perform. But now this Extraction which is made by the Water of Salt-petre, doth extract the Silver too, which being thence precipitated, the water remains as virtuous as afore; and indeed, if a comparison be made 'twixt this and that Extraction, there is as much difference as is between black and white, and between the day and night; therefore I say that this is a thing worth the learning, for it may be of exceeding much profit in times of affliction. Greatly is that pledge to be esteemed of, which (as the old Proverb is) redeems its Lord. Art is no burthen to a man to carry, but it rather carries or bears up a Man, caseth him, and makes him be of a cheerful mind, because it is a thing on which we may safely trust. It is more precious than Gold and Gems, which may be lost, but this abides firm and constant even to the Grave, and doth abundantly enrich its matter.

This Extraction doth likewise serve for the drawing forth Gold out of Silver, tho' it be not gilt, which to do is not in every ones power, tho' many know that Silver hath Gold in it, yet if it be not of so much value as to quit the Coils that are necessarily to be expended upon it, it is left as it is; and now there is no where separated Gold out of Silver, unless it be gilt, and they fee it sticking thereupon. Any other silver whatsoever, how much gold soever it possesseth, is not separated, when as though, sometimes there might be

made more gain thencefrom. But I must needs confess, that the separation of the Gold from the Silver, the usual and known way is conjoined with abundance of labour, and not worth the costs spent about making the separation, unless, haply, the silver partakes much of the Gold: Whereas on the contrary, this my way of separating is done with light labour and small costs, and therefore may be used about all silver whatsoever, though it has in it never so little Gold.

But that the business may be yet more clear, and the better perceived, it will be useful to add this information. When you would separate the Gold from the Silver by Aqua-fortis, it must first be purified with Lead, by burning it upon a Test, now in this work there's the Test, Fire, the sufficient portion of Lead, the labour and time spent hereon to be considered; and when all this is done, then the Lead has entred, together with the Copper that was in the Silver, into the Test, and may be esteemed of but as a thing just kept from being lost. Besides too, the Copper carries away with it, a good part of the silver into the Test. And altho' that by a most vehement blast of Bellows the Test may be molten, and part of the Lead, Copper, and Silver recovered, yet the expences necessarily requisite to this operation, are more than the regain'd Metals are worth, for that these costs, charges, and troubles are too great. Then finally, when all this is done, and that the silver shall have been depured by burning, then it must after all this, be granulated, and this is some charge, and then when all this is done, it may be separated by Aqua-fortis, and being separated, be again molten into a Mass.

Now my way of working is freed from all these kind of linked labours, and so much trouble and loss of expences and time may be avoided; for when I take on me to separate any Silver, whether it has much or little Gold, I cut it into bits about the length and breadth of my Fingers, so as that I put it into my separatory Vessel; then I make it gently or by degrees red hot, to the end that the defilements may be the better waht off, and the separatory water may the better work upon it. Then pour I in the water, and suffer the Gold, Silver and Copper to be dissolved; then (after this) do I precipitate the Gold, then the Silver, then the Copper; all which operations, from the beginning to the end, are done in three or four hours space, nor requires it any expence save only the water, and a little fire, to keep the water warm, that it may the more strongly work upon and dissolve the Silver; the Metals thus separated from each other and edulcorated, may be melted; and now from thence may any one see, how much difference there is betwixt ours and the common separation of metal, by the moist way; and if there be any one that would use this way of mine, of separation, he would doubtlesly get much gain and riches; neither could any one endamage him by way of prevention, and he would get himself an exceeding profit whereforever he be, not only out of gilt Silver, but also out of any other; for there is not a City so small, but it hath a Silver-smith, who buys up the old Silver, and separates it his own way, which is very laborious and costly, and therefore he would the willinglier give his Silver to another to separate, whereby himself might be spared the labour and costs: were there but any one that would offer him his help thereabouts.

And seeing that all Copper holds Gold hidden in it, and that that Copper is not any impediment in this my way of separation, but is resolved together with the Silver, therefore doth it always bring some increase to the Gold and consequently more gain; but the labour will be yet more gainful if it be prepared with a separatory water, which hath other Golden species or things added thereto in the making, and which render

The water aurous, such as are Lapis Calaminaris, Zink, the Minerals (or Ores) of Iron and Copper; for hereby is made a water that is in itself auriferous, and which doth readily (in the separation) join its volatile Gold to the Silver, and suffer its self to be incorporated; in so much that even such Silver as hath already been separated and purged, will yield Gold enough in the separation, if it be dissolved with such a separatory water, which hath been impregnated by graduating things.

And even as this same extraction which is done in the moist way, by the water of Salt-petre is exceedingly eminent and of much use, as being sufficient to supply many thousands of men with food and necessaries for life, so as that they need not at all to be compelled to deceive or damnify one another; so likewise, no less excellent is the extraction, which is done by the dry way; if, *viz.* the Volatile Antimonial Minerals, or Ores (whether they contain in them Gold, or Silver, or Copper, Iron, or Tin, and what metals soever they contain in them) be molten with twice, thrice, or four times as much Antimony in a Crucible, and be (by the means of Iron) precipitated into Regulus's; for by this work, what good soever there was in the Ores, and even the Metals themselves, may be obtained each apart: for when the Antimony hath extracted the Gold out of the Minerals, the Gold may then be first precipitated, then the Silver, lastly the Copper; and all of them with a very small cost and little labour, in so much, that in one days time many pounds of Gold and Silver may be drawn by this art out of the Minerals: and this too by a little fire. For the Antimony penetrates the mineral like water, and dissolves what is good in it; and as for that which is of an earthy nature it calls off from itself, and brings it into scoria. But it brings the Metal to a Metalline form in the precipitation, which must then be cupellated, or purified by the help of Salt-petre. And if haply you cannot get Antimony for this work, than common Brimstone may serve in its stead, and it will perform the same thing, if the Minerals be ground and mixt therewith, and be molten in a covered Pot or Crucible, and be precipitated by Iron, for so the Metals falls down in a Regulus, and the Sulphur abides behind in the scoria. But this kind of work requires a skilful Artist or Melter, who hath already been long and much versed in precipitations; for else he will be intangled therein, and not find the wisht for success.

NB. This is to be understood of that kind of Minerals and Fossiles which partake of *Antimony, Arsenick, Cobolt, Marschastie or Sulphur*, being such as *Antimony* and *Sulphur* love to seize upon and dissolve in the melting: such Minerals or Ores as have sand and stones among them, they (*viz.* *Antimony* or *Sulphur*) will have nothing to do with them; of this kind are Granates, Talk, and such like: so neither, doth the water of Salt-petre in the moist way extend its virtue to all the Minerals, nor extracts it Gold and Silver out of all of them; but especially it acts not at all on them which are very sulphurous, unless they are first Torried or Calcined as 'twere, and so freed from the Sulphur, then at length the water performs its office else not. Nor doth the water act upon Granates or other Minerals and Fossiles which are (as to the outward appearance) smooth and as it were glassy. And therefore all such must first of necessity be masted by an incense fire, and subdued.

There are likewise to be found some Minerals and Fossiles which suffer not what they have in them to be introduced into either Lead or Antimony, or to bestow their Treasure upon them; nor will they be forced out nor cupellated, but both are and remain scoria, and do retain that form of glass which they afore had, unless haply you make them sloop, and master them by

a most strong blast; for by this means they suffer their Gold and Silver to be wrested from them: But they may be mastered too, if you thereto add in the fusing some Potters-alies, or salt of the Lees of Wine, or Alies made of Wood, and melt them together, for so by this means also will they be obedient to thee; for salts dissolve in flux all stony Minerals, and such as resemble glass and scoria, which otherwise no other fire is able to do. But to make any more accurate description of that thing, appertains not to this place, but to the following Third Part of this Book; that which we have here minded, is only to make light touches as 'twere about shewing the variety of Fossiles and Minerals; and that, if haply any one should light on such a Mineral, out of which he cannot extract the metal, neither by the help of Antimony, nor by the water of Salt-petre, he should not think it void of every thing or that he has not dexterously and conveniently enough handled the same, but may know, that the only cause is, the property of the Mineral it self.

And now, even as the Sulphurous minerals do chieily admit of being separated by Antimony admixed in the melting, and those that are stony, not so, even so the water of Salt-petre doth more willingly extract the stony Minerals, than the sulphurous ones; but yet, if the sulphur be taken from them by Torrefaction, it is able to dissolve even these too.

But it chiefly loves those that have Stria, and are a spotted (Quartiz) sandy, poor kind of Mineral: which (otherwise) you cannot extract commodiously neither by Fusion or by Mercury: But that you may never be deceived here, it will be altogether expedient to be acquainted with both ways, both with this which is done by flux, & with that moist way which is done with Water; both ways are good, and exceedingly profitable in the separation of the Minerals or Ores; and that not only of such as may be every where had, but likewise of metalline mixtures: whether it be by melting them together, or else by some sad mischance of your Houles being burnt; or finally, if it proceed from thences, that Gold and Silver do lie hidden unknown in copper, Tin, Iron, or Lead; now they may with ease be separated from each other by both those afore said ways, and on such wise as that nothing may be lost.

The ancients knew not how to extract the Gold and Silver out of Copper as the modern Refiners are wont to do, but took them together as they lay and so applied them to any uses whether to make Bells or great Guns. Neither was the separation by *Aqua-fortis* so much in use in those days as in ours: Nay more, if in a Mark of Silver there was no less than the quantity of a Duckett of Gold, yet notwithstanding they did not separate it, but did make it up into money as it was, as the old Coins do sufficiently testify. For it is evident that all Silver almost, partakes of Gold, and ancients being unexercised and not well versed in the Art of separation, all the Silver though never so auriferous was Coined into Money, or put to other uses; but their successours smelt out what they had done, and therefore bought up all such Money, and separated it, & made thereof an exceeding gain: so that there is not in our age so much as a Dollar, Schrenckbergick, Gros, Crucifer, even to the smallest half Penny, of Gold Coin to be had throughout all Germany, all being changed and bought up and wiped off the Gold. But yet there is Silver enough left, both made into money, and wrought up by the *Gold-smiths*, a Mark whereof contains $\frac{1}{2}$ or $\frac{1}{3}$ of a Duckett of Gold; and therefore seeing the common way of separation by *Aqua-fortis* cannot be of use here, because the costs are too great, and the little portion of the Gold will not countervail the same; it may be done this way, and separated by either the moist, or by the

dry way, and that with profit, though there should be less than $\frac{1}{4}$ part of a Duckett in a Mark of Silver. And besides, Bells ever have much Silver in them, neither was it separated therefrom by the ancients (as we have said afore): and likewise old Tin hath a great deal of Gold and Silver in it, which was of old wont to be molten and wrought up with the Copper into Bells or great Guns. Many there are that well know, that there is Gold and Silver in these things, but how to extract them thence, they know not: For Copper admits not of being cupellated (or purified) by Lead, much less of being separated, & yet more difficult is it to do it by *Aqua-fortis*. But yet, it may be effected and that with a great deal of profit by the way which we have shewn, both the moist and dry too. And therefore he that shall be well skill'd in these operations, doing it either by melting with Antimony, or by the Water, will get abundance of profit out of your old and broken pieces of Bells: Nay should he buy them whole, yet would he get no small matter, for he may extract their Gold and Silver, and then melt them anew. For there is not barely in Bells that portion of Gold & Silver which the Copper and Tin had naturally in them, and of which the Bells are made; but also, it was the custom of the ancients, (when a new Bell was molten or founded,) to call some God-fathers or Witnesses (according to their ancient custom) who named the Bells afore they were baptized: And like as it is even at this day the usual custom every where throughout Christendom in the baptizing of Infants for the God-fathers to give their God-child some Money (or Plate) as a remembrance; so the ancients did do in the baptizing of their Bells, as they were flowing in the Furnace they call thereto Gold and Silver, to testify their affection to Holy uses, and also that the Bells might fuse the better, and yield a clearer sound. Upon this account I say, that 'tis no small gain that may be gotten out of old Bells, seeing there never is a Bell which is destitute of Gold and Silver.

And now the well-minded Reader sees what use this extraction and precipitation of Gold & Silver which is done either in the moist or in the dry way, is of; and that not only in Minerals and Fossiles, but likewise in metalline mixtures too, out of which there can nothing be obtained by any other way.

Who I pray will not now magnifie or highly esteem of Salt-petre, and take care about having it prepared in great plenty, and so convert it to his profits, seeing it is clearly manifest that so much good may be done with it both in Metalline Affairs and Medicine? I do what I am able, I offer my self to all good Men: If they will not listen to me, I am not to be blamed but am void of fault. Man's Life is too short, than for one Man to be able to describe all the things that may be done by the help of Salt-petre; neither indeed is it to be wished that many should know it.

But seeing I but now treated of the precipitation of Metals and Minerals, I think it worth while, to shew the cause of that precipitation, that so the studious of Art may have a more certain foundation of this thing. That which is to be separated, must of necessity be a bound up or fast knit body, for else it would not need any separation; therefore forasmuch as one Metal knits up, or incloseth another, they cannot be separated from one another, but by the breaking or destruction of the bonds which they are tied withal, and knit each within another; this destruction now, is to be done by the Fire, both in the moist and likewise in the dry way. Copper, Tin, Iron, and Lead, may in the dry way be separated from Gold and Silver, if they are Cupellated together on a Telf: For then the superfluous or burning *Sulphur*, in the imperfect Metals, acts upon it self and reduceth its own proper Body or Metal into Scoria, and seeing that there is a great part of Lead therein, those Scoria are fluxile, and it doth by little & little (as much of it as goes into scoria) infumate it self or slide into the porous Telfs or Hearths. But the Gold and Silver which have no superfluous Sulphur, do remain unburnt upon the Telfs, waht and clean, & do now shew themselves in their clarity & bright-

ness; This is the separation of the good from the bad, or the combustible from the incombustible, which is done by the force of Fire only, and solely: by which, the imperfect Metals are by the help of Lead converted into brittle scoria, and so creep into the Telfs, and separate themselves from the perfect Bodies; and this is a very easie work, and well enough known to every body, and is by the Refiners called Cupellation. But now in this separation, there's only a separation made of the imperfect Metals from the perfect, but the Gold and Silver remain mixt together, and if you would have each apart too, then 'tis necessary that the one be dissolved and separated from the other by a most strong *Aqua-fortis*. But if the portion of the Silver be more than the Gold, then the Silver is dissolved by a common *Aqua-fortis* made of Salt-petre and Vitriol, and so the Gold will fall to the bottom: and this way of separation is well enough known and used by the Refiners and Goldsmiths; but if there be more Gold than there is Silver, then do they dissolve the Gold by *Aqua-regia*, and so the Silver remains undissolved; nor is the *Aqua-regia* any thing else but a strong water of Salt-petre, in which some *Sulphur* is dissolved; for the common or simple water of Salt-petre doth dissolve the Silver only and leaves the Gold; and contrariwise the *Aqua-regia* dissolves the Gold only, and meddles not with the Silver; but if they know not the right way of ordering the *Aqua-regia*, they are wont to add to the Gold in the melting too much Silver as may make up three times the weight that there is of the Gold, and so they separate it by *Aqua-fortis*, which (kind of operation) we call (by *Quartz*).

There is yet another way of separation, which is known unto them, and this is done by Cementation, (*viz.* divers Metals are commixt together, and they are mixt with Vitriol, Salt, and Tiles, *Sir-stun super fratrum*, and so kept together a while for some due time in a continual fire, then the Salt and Vitriol do assume to themselves the imperfect Metals, and leave the most perfect, that is the Gold, alone. Cementing doth also attract Silver and Iron, Copper and Lead; but this kind of separation is only used to impure Gold, perfectly to purify it.

There is yet another way of separation, which is done by Antimony, and is likewise only used to Gold, to cleanse it from its impurity and vitiosity. There is also another way of separating by fusion, in which if you would have a metalline mixture which hath Gold, Silver, Copper, Iron, Tin, and Lead in it, to be separated into its several kinds, then the mixture must be granulated and burnt with Sulphur, and being burnt, it must be melted in a Pot, and so by precipitating it either with Lead or Iron, one Metal must be separated orderly from another; which way is wont to be used (as far as I know) but by few, because they are not so understanding in Nature, nor know any cause why one Metal separates it self from another, sooner and more readily out of the mass or metalline mixture, and settles to the bottom.

But that the ingenious Lover of Art may have some direction, as 'twere, and some occasion to consider with himself more deeply, and may have a willingness to undertake so excellent and profitable an Art, I have a mind to discover the cause of the precipitation. It is sufficiently evident, that *like rejoiceth with like*, and that there's a disagreement 'twixt unlike things. Oil loves to be mixt with Oil, & Water is willingly united with Water, but not at all with Oil, left by a medium intervening. Hence it is, that forasmuch as one Metal is of a different nature from another, that such as are alike, love each other, and such as be unlike do abhor and shun each other; and therefore when there are divers Metals in one mass, and that you would separate them, it is necessary that you do it by adding such a thing as is of affinity to the more imperfect part, and is at Enmity with the perfecter part. As for example, Sulphur is a friend to all the Metals, save Gold, and that it hates; but yet it loves (even in the imperfect Metals) one better than another: for by how much the more like they are thereto, and the more imperfect, so much the more rea-

dily is it a friend or enemy thereto. And therefore when the Sulphur shall have been put into the ma's in the combustion, then the most noble parts flie off, and do their best to free themselves from the fellowship of the imperfect and unclean metals; but yet they cannot rid themselves without some assistance; and therefore if some sulphureous or imperfect Metal shall be put to the sulphureous ma's, then the sulphur laies hold upon it, and lets go the more perfect part, tho' not so pure as yet, but it needs a greater purification; concerning which there may be read more at large in the Explication of my *Miraculum Mundi*. This work is called *Precipitation*, when the more perfect part is precipitated and separated from the more vile, and that out of one and the same mixture. The same reason is there in the precipitation made in the moist way, if (*viz.*) some Metals, or all together, be dissolved in the water, one is thence precipitated after another orderly. First, That which is the most noble and most perfect, then the 2 & 3, and so regularly, until they are all precipitated. This is that most excellent and hitherto wholly unknown, and most gallant Invention wherewith I hope to become serviceable to my Friends.

He that well understands this precipitation, will gain much, but if he only meddles with this operation in a careless manner, and merely customary as 'twere, and so not know the reason it self, why such, or such a thing is, he may worthily be compared to an Ass that carries a sack, but knows not what is therein contained, nor whether he is to carry it. Therefore I will yet farther add a more clear information. Iron precipitates Copper out of both the dry and moist solution; Copper precipitates Silver both in the moist and dry solution: Mercury doth chiefly precipitate Gold, and altho' Copper, Iron, Tin, and Lead, do also precipitate Gold and Silver, yet each Metal hath its own peculiar precipitation, and farther note, that Precipitations done with Salts do exceed those done with the Metals, for by them may all the Metals be precipitated; and this hath even hitherto been kept secret.

And besides, one Metal does not only precipitate another, but doth likewise change or alter it. As for example, if I put the Plates of Copper in a solution of Silver, then (whether the solution or operation be done either in the moist way or in the dry way) the silver precipitates it self by means of the Copper. And if I but know how to manage that business knowingly and skillfully, the Silver will also graduate some of the Copper into Silver in the precipitation, and there will be gained more silver than was put in the solution. In like manner, if I precipitate Copper with Iron, out of a solution of Copper, then doth the Copper precipitate it self by reason of the Iron, but withal, some part of the Iron doth exalt it self in the precipitation into Copper; and seeing that this kind of operation is confirmed by open Experience, there is none can safely question it. But I do not say, that in such a graduation all the Iron is turned into Copper, or all the Copper into Silver; nor did I ever try it; but yet I readily believe, that it is a thing possible to be done by reiterated workings. Mercury precipitates Gold most willingly, but only in the moist way, for in the dry way it cannot subsist; but to precipitate it in that way, Iron serves excellently well; Copper also and Lead are profitably useful hereabout also, but yet Iron is better.

There is a singular precipitation of Silver with Mercury, which I will here mention. The Chymists some hundreds of years ago, made Silver out of Cinnabar, but without any benefit or profit; neither did their silver they got come from the Mercury, but from that silver which they added to the Cinnabar. They took common Cinnabar, made of Quick-silver and Brimstone, and brake it into small bits, about the bigness of the Nail of ones Finger, and made Laves, or *Stratum Super Stratum*, thereof, with filings of pure Silver, then they luted up all well, and kept it in a moderate heat for 20, 30, or 40 hours, and by this way they found that their Cinnabar, which at first was red, was made black; this matter they cupellated with

Lead upon a Telf, and so got as much Silver as was the weight of the Mercury in the Cinnabar.

NB. As much silver as they got, so much wanted there of the silver they put into it, and so there was no Gain made from hence; and they supposed (but fallily) that the Quick-silver extracted the soul out of the silver put thereunto, and that therefore the said silver was rendered volatile. Nor indeed is it contrary to Reason, that *Argent-vive* should extract the soul from Silver, & thereby convert it self into silver; and that on the other hand, this examined silver be made wholly volatile, if it be not animated anew by other Metals; and this is what some have done and attained to, by the help of Lead.

But the Operation which I treat of at present is rather an attraction or precipitation of silver by Mercury, and this precipitation is to be done in the moist way, and is most wondrous case; nor is it without Encrease or Gain, provided you are willing to wait its time, and 'tis thus.

If one part of pure silver be dissolved in *Aq. fortis*, and in the solution two parts of Rain-water be added to one Part of *Aq. fortis*, and there be likewise thrown in three or four parts of Quick-Mercury, and all this be left some days or weeks in a cold place, unmoved, then the silver precipitates it self out of the Water to the Mercury, and the Mercury dissolves it self into the Water, and both together yield a wonderful representation of growing things, like Mountains and Vallies, and certainly is of a most pleasant aspect. The result of which is, *viz.*, if they stand for a long time and shall be afterwards edulcorated and reduced by Lead, then the Silver gets so small encrease from the Mercury: But yet there's no gain to be thence had unless those outgrowings (or representations of fine things) be suffered to operate and germinate above a Year: And this, few operators will yield to do, and to be withheld so long a time from the fruits of their Labours. Now the reason of this operation is thus: The *Aqua fortis* is a moist and cold Fire, and ripens as well as the dry and hot Fire, but he needs be a skillful Artificer that sets upon this Work.

It is evident that some of the ancient Philosophers matured their Universal Medicine by a moist fire, as you may see in *Arctophilus* and others. Other some Philosophers extracted a certain secret water, or universal Menstruum and dissolved out of the Nitrous Sea, and did thereby perform most notable things, but they always kept it secret, and the description they have made thereof, hath been obscured, or painted over with Riddles, or dark expressions, when they say, that it draws his secret water out of the Sea, or as clear brightness as the Moon: which way of drawing it belongs not to this place to shew: only thus much is hinted, that out of Nitre may be drawn an Universal Menstruum, which is more excellent than the Corrosive Spirit of Nitre, which said Spirit doth indeed dissolve all things, but after the manner of corrosives, whereas this which it draws and is of the clear brightness of the Moon, hath nothing of Corrosivity in it, but is mild and sweet, and wets not the hands, or tingeth them, as that Corrosive doth; and altho' such a water be Volatile, and not fixt, yet is it of such a nature as to constringe, and fix other fugitive, and unfixt things. 'Tis a thing most worthy of admiration to consider how those Natures have a mutual love each to the other, and embrace one another, and are converted the one into the other. And thus much may suffice to have been spoken concerning the precipitation of the Metals out of both the dry, and moist solutions.

Let no body seek to fish ought more out of me by their Letters; but as for such as formerly have been my friends, and even now are, or shall hereafter be, to these I will not deny any thing, always provided, that nothing be done against a decorum (as they use to say) for a discreet behaviour.

But now if any one thinks that (if he comes flying from the East or West) I must presently lay aside all my business, and only attend upon doing and answering what he demands: No, that's a thing my Affairs won't permit me to do, for I have somewhat else to manage. And therefore would

would forewarn such an one, that he enters not on such a Journey afore he be certain whether or no it stands with my convenience or not. For this hath many a time already happened unto me, *viz.* for some one to come with a desire of knowing this or that secret, who (when I would have told it him, but that I had no time then to accommodate him) hath gone away stomaching at me, and began to reproach me publicly afore all Men, as if I were some inhumane, or merciless fellow, and would not satisfy his request. Some also there have been, who out of the meer malice of their mind have divulged, that I myself have nothing, seeing they can get nothing from me; there are many such perverse kind of men to be found, who make no Conscience of enervating, or sucking out the very Marrow of the Bones of others, so as they may be but benefited thereby themselves; which verily is a great evil and inhumanity. How often have such kind of men come unto me, whom (when they have spoken with their kind words unto me, and also carry the garb, and outside show of very honest Men, and promised all decent thankfulness) I have satisfied, and yet have afterwards fled off from, and broken their Faith: Therefore it is the best way for him who has any singular thing, to bury it over in silence, and so he need not fear of being drained by others, that know how (by the perfwasive flattering Art) to get out his skill, and give no thanks afterwards for the same.

If I had not already begun to describe the *Prosperity of Germany*, certainly I would not now begin; but forasmuch as I have taken upon me to finish what I have begun, I will stand to my promise, and will in like manner shortly publish (if God shall see it good) the third and fourth part.

And seeing that in both the following parts, the melioration, or concentration of the Metals, is chiefly to be done by the help of Salt-petre, I was willing more amply to confirm in this second part, that which I wrote in the first part of the Generation of Salt-petre. And I do again and again avow with the greatest alleviation, that such a generation of Salt-petre out of wood is very true, and is founded on Nature her self.

Now must I proceed a little onwards, and withal demonstrate to the simple, that the putrefactory Stomack, in which the wood is digested and putrefied, and which tranfmuteh all wood, and resolves likewise all Leaves and Grass in a short time, tranfmutes and reduceth it into Dung, is as the stomach of Animals, and this may be done in a moist vast Quantity, as hath been proved in the first part of the *Prosperity of Germany*; and this no Mortal Man can ever refute, *viz.* that the essential salt, or salt of Nature, is no other thing but Salt-petre, but is not as yet burning, or flaming up, until it be animated by the air; and conceive a life thencefrom, the essential salt of Vegetables, barely such, is not so, *viz.* Salt-petre, as hath been sufficiently manifested.

Now whatsoever gives fertility and power of growth, is Nitrous; if therefore there lay hid no Nitre in Minerals, as in Stones, why would the Gardiners carry slackt Lime into their Fields, and use it instead of Dung to dung their Fields withal? Whence doth the Salt-petre come that grows on upon old Walls, if not from the Lime? What is the reason that the Salt-petre men do seek after old ruined walls, to make Salt-petre thereof, or were nothing in them? I verily believe that this is an indubitable Argument, that there is Salt-petre hidden in all things: For the salt of the World, or the Universal Essential salt, is nothing else but Salt-petre, when it hath after a due time attracted a life out of the air, to which end my secret circulatory instrument was invented, that such an animation might be the more conveniently brought to pass.

Nor do the other kinds of salts, *viz.* Sal-Gem, the salt made out of the natural falt fountains, or sea-salt, likewise all salts which are made out of the Lees of Wood ashes, or of Lime, also Alum and Vitriol, all these are not so widely different from salt-petre, but they may easily be tranfmuted, and converted into salt-petre by the animation of the air; by the help of my circulatory vessel; but for the better perception of the operation, I will subjoin this Example.

Dissolve as much Sal-Gem, sea salt, or salt made out of the falt fountains, or common salt which is frequently used in boiling of meats, or salt made of Wood ashes, or of the fones of Calx-vive, in *Aq. fortis*, as much as the water will affume to it self, or be able to dissolve, and let it again cool; then the salt does not concrete or shoot granularly, any more but into long thin Cones like salt-petre. Pour off the *Aq. fortis*, or Salt-petre water, and dissolve it, *viz.* the salt, again in a Lixivium of Lime, and crystallize it, so shall you have therefrom a Natural, or Genuine Salt-petre, and no less combustible than any other Salt-petre that is digged out of the stables where Cattle have stood. Then again may there be, by the said Salt-petre water, more salt prepared, either common salt, or salt out of Herbs, or Wood, and be dissolved and crystallized, from whence results a new Salt-petre, and this operation may be so long repeated, until all the falt-petre water be turned together with the salt, into salt-petre.

This tranfmutation of salt-petre is perfected in some hours, and from hence may a worthy reward for your pains be reaped, could it be otherwise performed than in Glasses; and indeed, out of one pound of salt-petre, would there come an hundred pounds of petre, if a part of the tranfmuted salt be still distilled anew into water, and more new salt be by it again tranfmuted. But there is no such need of setting about a work so laborious, seeing there is at hand a far speedier, or more dexterous way of doing the same, if *viz.* those salts shall be animated by the air, by the circulation that I have contrived, and so be turned into salt-petre in great quantity: which animation, or hatching as 'twere, may be done in vast quantity by ease labour, and little costs, the air (as we use to say) turning or making both sides of the Leaf: For one portion continually kindles and animates another, no otherwise than as a little Leaven doth a great Mass of Dough, and as a little Feeces, or Yeast, yea, as little as will lie in a Spoon, serves to ferment a whole Vessel of Ale: the same is done here. And indeed, common salt-petre may be implanted into other salts, even as a Vegetable Seed is sown in the Earth, so as thence to get in a short space of time a great encrease, even an hundred, or a thousand-fold.

But the sluggish Companions who had rather fatten themselves with eating, drinking, and sleeping, and wholly give themselves to laziness, who is able to wait so long in the expectation of this thing? Alas for ye, ye slothful, lazy, and devouring Gluttons, with what face dare ye so manifestly to betray your laziness? I pray, if you put out your Money to Use, and have 5 or 6 per Cent. as we use to say, a Year, must you not expect the years revolution afore ye receive it? And besides, you run here a hazard too, least your Debtor breaks, and defraud you of the very Principal it self: If you lay out your Monies on building Houses, so to make a great gain thereby, may not your Tenant be reduced to such wants as not to have wherewithal to pay you, unless haply, out of the very Stubble, or Litter of his poverty? May not your Ships which float about in the Sea, be calt away by Storms and Tempests, or be taken by Pirates? Why are ye not as Patient in your expectation as the Husbandman is, who after he hath sown his Grain, must wait a whole year afore he reaps with advantage what he hath sown. Nay, yet more, if he be pretty fortunate, he scarce gains 6 in the 100, the costs and pains being reckoned; and in the mean time he is in fear, lest the Corn should be blighted by the cold, or being near ripe, should by a bad season be spoiled and corrupted in the field. If there happens a year that is droughy, then the Corn cannot grow up high, or 'tis eaten by the Mice; but now in the preparation of Salt-petre all those Cares are saved, and 100 Dollars may yearly yield thee 2, 3, 4, or more gains, and that without any wronging thy Conscience, and without endangering any other, and without Extortion; for if thou hast much Salt-petre, thou mayst presently thy self much gold and silver also, for there will always be such as buy it up; and if thou attentively heeded, thou hast so much delivered thee in my Writings, as

that thou thy self maist spend it all on the melioration and separation of Metals: Nor needest thou, if thou thinkest it good, sell any of the same. Nor is there any reason that thou should be ashamed or repent of such a Work, because one man is sufficient, without any others help, to manage the greatest operation: nor need there great expence, save only a little to build a small Cottage, wherein the Salt-petre may be kept dry. If you have huge Woods at hand, you may make your Salt-petre out of wood; if you want wood, then out of the dung of Horses, Oxen, or other Beasts, and Sheep, or else out of even common Salt, which we use in seasoning our Meats, out of wood-ashes, and out of Lime: Whatever it be prepared from, it will not cost much, for 1 l. of Salt will yield thee 1 l. of Salt-petre.

But haply some or other may be in the mind to think or demand, why *Glauber* himself sets not about this work, and reserve the whole Gain to himself? To these I answer, that I am not of such a greedy desire, as to wish for all to my self; nor will it at all be unacceptable to me, if another hath likewise somewhat; nor will it be at all less lawful for me to do for my self so much as seemeth me good, as for any other to take his liberty, and to do to himself as seemeth him good. Besides too, I am not of the mind to make the thing so very common, but will see whom I communicate ought unto, that so it may be applied to good uses, and not come into the hands of the Unworthy.

The first ten years however Salt-petre will not be of so vile a price, but that it may be made and sold to profit; Who knows whether or no he shall live so long? And if at the utmost it should after 20 or 30 years be of so mean a price, because of this Invention of mine, yet in the interim they may all that while enjoy the profit of the same, and it may be expected from the hands of God, that He will, for the time to come, provide for them some other waies: But never will it be of so vile, as to be worth no-

thing; and if it were so, that you could not make any Money of it, (tho' it is impossible that it should ever be such a drug) yet (by that manuduction which I have afore given in the 1, 2, and 3th Parts of my *Furnaces*; as also in *The Explication of Miraculum Alundi*; in the 2^d. & 3^d. Part of my *Pharmac. Spagy.* and in This Second, and shall be in the following Third and Fourth Parts of the *Prosperity of Germany*;) it may be improved about many eminent uses, and so Gain be thereof made; for Salt-petre is such a Subject, as you can never have too much of, and is therefore worth our labouring after, and our endeavouring how to prepare it in good quantity, and without, of finding out what benefit it is naturally able to afford us; for it is even a wonder to consider how great things may be done by the help thereof: It is the greatest Poison and yet may a most excellent Medicine be thereof prepared: Colder it is than Ice, and yet hotter than any fire. It is the Generator of all things, and also their Corrupter; it vivifies and kills all things; it is heavier than gold, and yet lighter than the Wind; it is also Fire and Water, Air and Earth, Male and Female; it impregneth and suffereth it self to be impregnated; it is light, and is also darknes; it is black and white: There are in it as many Colours as the world affords; it is fixt and volatile, corporeal and spiritual; it kindles and burns all things, and doth also quench all burnings; it is the Beginning of all things, and yet it causeth the End of all things; that which is soft, it makes to be congealed and become stiff; and again, that which is stiff or hard, it makes soft.

Thou Creator of all things, How great a vaineesse is there of thy wonderful Works? and what a fewness is there of those who understand, or know, or labour to know it! O thou eternal Light! illuminate the dark besaile of the lost Sons of the World; O thou vivifying fire, mollifie, enkindle, heat the stubborn hearts of sluggish Mankind, that are opprest with sleep, and frozen with cold, that so they may seek thee, and know thee, and learn to fear thee in true Humility, and to honour & worship thee without Hypocritie. Amen.

An Admonition, and short Repetition of those things which are treated of in this Treatise.

That the Friendly Reader may make this Book yet of more use and benefit to himself, I thought it worth while by way of an Overplus, again to set here afore his eyes those secrets which have been herein mentioned, that viz. that the use of them doth consist properly in.

First of all, it hath been shewn, how by the means of Salt-petre, all Volatile, and immature Minerals are to be brought to a ripeness both in the moist way and in the dry way, that so they may yield forth out of themselves in the melting, good durable Gold and Silver. Then I taught by what way the Volatile, Arsenical, Cobaltic, and Antimonial, Auriferous and Argentiferous Minerals, may by an easy labour, be by an artificial Fusion, and extraxtion, and also by a precipitation into Regulus's, and by the purification or expellation of the said Regulus's, by the help of Salt-petre, converted or brought into use in the dry way, and the Gold and Silver hidden in them be drawn forth. Thirdly, I have shewn the extraxtion of Gold and Silver out of all the barren, or poorer sort of Minerals or Ores, which are not worth the charges of extracting, or the usual way of proceeding, and of the drawing them out by a singular Art, with the water of Salt-petre, and of rightly working them; which way is to be preferred far afore any usual extraxtion of those poorer kinds of Minerals, not only because such an extraxtion is performed without a melting fire, and a Furnace, but also, because in this extraxtion there is more obtained than is by extraxtion or forcing out, and yet farther, that which was Volatile in them is fixed together, and retained, by the water of Salt-petre which would otherwise in a melting Fire fly away in smoke. And more than this too, Gold and Silver may by this moist way and that with very easy Labour be extraxted, and in a due manner perfected, and that commodiously and with no small profit, out of any, the vilest Fogles (or things dig'd out of the Earth) as out of disesteemed Earths, Duffs, Sands, and Flints, from whence, otherwise you cannot extraxt any thing neither by Extraxtion nor by Mercury: So that in all places of the World what soever so it be some what a dryish soil, is to be found such kind of Earth, Clay (or Marle) Sand, Flints, and such like which contain in them a thin or spring kind of Gold and Silver, and from which they may profitably be extraxted. Fourthly, it is a dainty Art which may be used in all parts of the World, nor is it at all burdenson to carry, but may be excellently (well, or justly) preferred till need requires. But this is to be noted that the sifter Earth or Clay must first be made red hot and burnt afore it be moistned with the Water of Salt-petre. For without so doing, the Earth would always remaine thick (or clammy), would drink up much water, and it would not easily be separated, but being burnt, it suffers it self to be extraxted no other than as if it were Sand. So neither do the Ore or Fogles of Iron which are auriferous and abound with Iron, suffer the Gold to be extraxted and precipitated out of them as readily as other Minerals or Ores do. But the Iron, (if there be somewhat of it) makes the Water thick and stopy like

that you could not make any Money of it, (tho' it is impossible that it should ever be such a drug) yet (by that manuduction which I have afore given in the 1, 2, and 3th Parts of my *Furnaces*; as also in *The Explication of Miraculum Alundi*; in the 2^d. & 3^d. Part of my *Pharmac. Spagy.* and in This Second, and shall be in the following Third and Fourth Parts of the *Prosperity of Germany*;) it may be improved about many eminent uses, and so Gain be thereof made; for Salt-petre is such a Subject, as you can never have too much of, and is therefore worth our labouring after, and our endeavouring how to prepare it in good quantity, and without, of finding out what benefit it is naturally able to afford us; for it is even a wonder to consider how great things may be done by the help thereof: It is the greatest Poison and yet may a most excellent Medicine be thereof prepared: Colder it is than Ice, and yet hotter than any fire. It is the Generator of all things, and also their Corrupter; it vivifies and kills all things; it is heavier than gold, and yet lighter than the Wind; it is also Fire and Water, Air and Earth, Male and Female; it impregneth and suffereth it self to be impregnated; it is light, and is also darknes; it is black and white: There are in it as many Colours as the world affords; it is fixt and volatile, corporeal and spiritual; it kindles and burns all things, and doth also quench all burnings; it is the Beginning of all things, and yet it causeth the End of all things; that which is soft, it makes to be congealed and become stiff; and again, that which is stiff or hard, it makes soft.

Likewise all auriferous Irons, or Coppery Ores, may be separated by common salt, without a Furnace, or melting fire, and that in the open air (as we said afore where we treated of the poorer Coppery Minerals, or Ores;) and many hundreds of pounds may be done at one time, and with one Labour, and the Gold which is extraxted mixtly with the Iron and Copper, may be separated out of the solution, by the moist precipitating way there devised, and that with a mighty profit and gain, because that same precipitation hurts not in the least either the Copper, or the Iron, as to their malleability.

In like manner may you precipitate the Gold out of any Vitriol water, and that in quantity (when it has any in it); and on such wise too, that the precipitation of the Vitriol shall not at all change ought of its nature; and this is so commodious a way, as that if there were contained no more than one quarter of a Dram of Gold in 100 l. of Vitriol, yet would not that precipitation be of no use or profit. And on this wise and manner may all other Mineral waters be precipitated.

Moreover, as concerning the means of easily preparing the salt so as to serve for the extraxting the Copper, in all Countries, but especially on the Sea Coast, the Concentration of salt out of the waters, or the Sea will afford you no mean, or obscure Documents touching that thing; which concentration is treated of in the Book Intituled, *The Consolation of Navigators*.

But forasmuch as there is mention made in this Treatise of a yet other certain Artificial separation of Gold and Silver out of the imperfect Metals, in which Antimonial fossils have place, in a forenamed extraxtion, which I would willingly (but as yet have not) delivered; let no body so confuse it, as if I either purposely or carelessly omitted the same: No! The Case is far otherwise, and this is the true reason; seeing this Book now in hand is become more prolix than I intended, I determin'd with my self to reserve that most profitable process for the following third part, which God willing, I will very shortly publish, till then, I entreat the Friendly Reader to expect or wait for it with a good and patient mind.

Mean while he may acquiesce with these two ways, viz. the dry and the moist, and delight himself herein, and would take care (as far as in him lies) to have ready by him some quantity of Salt-petre; for the following third part shall treat of nothing else but the performing and doing of processs by the help of Salt-petre. For therefore that knows how to make it in plenty at a small rate, may hope for so much the greater benefit; and this I judged expedient, to add here for admonitions sake. More shall be discovered (God willing) in the third and fourth following parts.

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