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**THE
SECOND PART
OF
GLAUBER'S WORKS.**

THE FIRST CENTURY,

OR

Wealthy Store-house of Treasures

Being

A General APPENDIX to all his hitherto-published Writings

The which doth not only illustrate all obscure places, as well in his Philosophical and Medicinal as Chymical Writings, and explain those hard places to be understood; but also do so abundantly supply those which are defective, that the learned and the unlearned, the highest and the lowest, and more, the meanest workman and Husbandman, may sufficiently be able to comprehend that GLAUBER hath in all his writings, written the pure and simple Truth, and hath again brought to light the most noble Art of Alchemy which hath so long lain hid in darkness hitherto; and hath discovered it for the common good of Mankind.

LONDON, Printed in the Year MDCLXXXIX (1689)

THE PREFACE.

Courteous Reader,

That every promise becomes a debt, is reported by a common Proverb or By-word, and therefore to stand to ones word or promise, is a thing which procures a great Ornament or grace no less to JUNIORS than to SENIORS. Since therefore in my writings I have ingaged my Faith or Credit through the promising of some little works, and yet have not been able, by reason of the scantiness of time, hitherto to satisfie the expectation and desire of very many, by publishing of the same; yea since greater Discommodities and Impediments being cast in my way, do hinder me from day to day whereby I cannot write more things, although I have nothing more in my desires than that in standing to my promise, I may acquit my credit, and set forth the said little works; to wit, my Vegetable work, my Work of SATURN, my Book of Dialogues or Discourse, the fourth part of my SPAGYRICAL PHARMACOPOEA or Chymical Dispensatory, and my admirable little Book of the concentrating of the Heaven and Earth; truly they being Treatises containing most excellent Arcanums or Secrets, and the most worthy ones whereof Men can be made partakers, and notwithstanding I am of necessity destitute of time for the writing of any Treatise peculiarly, and for that cause I am constrained to insist in a nearer path, and for the sake of promoting the publick good, to send forth the said Treatises in publick by a less labour and trouble. The present Treatise notified with the Title of an universal Chest or Cabinet full of Riches, or of a general Appendix of all my writings hitherto exposed to the publick view performs this, whereby all things which have been either the more briefly and obscurely spoken in them, are with a more clear or perspicuous illustration explained, or things that have been wholly omitted are supplied, and by the same endeavour the promised Treatises are added, yet not in that order wherein they ought otherwise to be written down; and the which order here to be observed, would administer very much trouble; but wherein all the secrets have in process of time been made known unto me, and committed to Paper. But it is free for any one to add according to his own Judgement, Medicinal Secrets unto Medicinal ones, Mineral Secrets unto Mineral ones, Chymical Secrets unto Chymical ones, if it shall so please him, and time shall also permit the same, which it in no wise permitteth unto me, every one that acquiesceth and is content with these things may consider, if a certain Cook should set a Dish on the Table filled with the best Meats, as being destitute of time, to put every sort of Meat in

a several Dish, whether he could of right be angry with him, or by whisperingly prating, he could dare to say, he was to be blamed as being not skilifull in the affairs of the Kitchin, because collecting so many delicate and such dainty Meats into one Dish, and daring to set them on the Table? I suppose not any one could of right complain of such a deed of any Cook; the Cook desiring to have it taken in good part, such Meats as he had, such he sets before them; he that refuseth to take of them, may use his own liberty, and may let those Meats alone, which he is not compelled to receive, even as the Cook also may be constrained by none in preparing of the same according to his own will or judgement.

Whatsoever Meat doth not please the Pallate of one, yet will not be ingratefull to the Pallate of another, but on the contrary gratefull, seeing one Food is wont to savour or relish this Man, and another the other, neither is he inordinately affected with the disdain of confused Meats, who taketh of those which relish him, and leaveth the rest for others.

Let every one that blameth these writings do the same, not in hastily taking them in evil part, but in friendly and courteously excusing me that I have not sent them abroad in a more harmonious order.

They are like unto a certain true and great Cabinet or Chest, filled with very many excellent Secrets, being reduced into my knowledge through a successive diligent search of thirty years and so collected into one heap, that they might either be conserved for my own or at some time be made of publick use or service; out of this Chest every one shall be able to exhaust those ARCANUMS and SECRETS, which shall please him or serve his uses.

As to what concerns my self, because I daily behold sometimes this Man, sometimes that Man being snatched away by death, to be carried forth and committed to the Earth, I may easily conclude rationally with my self, that those changes or chances will in a short time happen also unto me; I should commit a very grievous offence or error, that so many costs, labours and troubles, of so many and so great Secrets being consumed in vain, I should carry them away with me underground, and not bestow them for a common good: I shall here perform the office of a good House-holder, or skillfull House-keeper or Steward, who after that he hath made abundant of Provision for Winter-cloathing for himself, his wife, Children and whole Family, if he hath as yet plenty of Linnen and Woollen Cloth remaining, he doth not cast them away, but rather casts them together into a Chest, so long to be kept, until he shall obtain an

occasion of administring them for the use of his Neighbour. In the name of the Lord therefore, in making a beginning with the opening of my Chest of Treasures, I will empty it out by little and little by degrees, and will offer it for a common use, that out of so many Treasures, every one may convert unto his own use, what things he shall judge to be profitable unto him; to wit, a Physician Medicinal things, and a Chymist Chymical things, even as every one shall discern any thing to be fit for his own use, every one of what rank soever shall find those things wherewith he might be content, so indeed that whatsoever he shall not meet withall in the first, second, or third Century may be found in the rest, for which things sake, if ten Centuries shall not be süfficient, I will adjoin other ten or more, that so I may remove from me all those cares, and carefulnesses wherewith the custody of so great Treasures hath importuned and affected me for so many years. Like unto a travelling woman, who with the greatest desire expecteth the hour of her delivery, and who desireth the beholding of her Fruit, do I desire that time wherein all things shall be printed in Letters. The Almighty God bestow on me so much presence of mind, health, and strength, and prolong my Life so far, that I may finish it to his Honour, and the Succour, Comfort and Profit of all Mankind.

AMEN.

THE FIRST CENTURY:
OR
GLAUBER'S Wealthy Store-house of Treasures.

PART II.

In the NAME of the most Holy Trinity I begin to write the First Century of my General APPENDIX, or an Exposition of all my Writings hitherto set forth.

I. Concerning Fire and Salt, and what Alchemy is.

Alchemy is a Science, and Art of destroying, of purging immature or unripe and impure Metals, by Fire and Salt, and by a singular Artifice, of converting the more pure part into a better form and kind, according to the words of PARACELSUS, who saith, EVERY SOMETHING IS TO BE CONVERTED INTO NOTHING, AND EVERY NOTHING INTO SOMETHING. Also Corruption renders that which is good perfect, the which is to be equally understood of particular and universal Operations.

Nevertheless it is not of necessity that I should here tediously treat of a particular Transmutation of Metals by Fire and Salt, because that hath been already long since performed in the second part of the Miracle of the World, and also in the fifth part of the prosperity of GERMANY.

A Square within a Circle.

In the Sun
and Salt are
all things.

II. A Demonstration whereby it is proved that Fire and Salt are most noble Creatures of God, and that in Fire there lies hid the purest Salt, and in Salt a most efficacious Fire.

That Fire and Salt are most noble Creatures of God I have evidently enough demonstrated in my little work concerning the nature of Salts. But that there is a subtle saltish spirit in any fire, and that between the heat of the Sun, and of our Kitchin fire, as to their saltish

spirit, a great difference doth interpose is sufficiently and over sufficiently known. But to comprehend or lay hold of, to concenter such a pure saltish spirit of SOL, to render it corporeal, palpable or perceivable, and visible, remains hidden and unknown to us by reason of our sins; because God reserves so great mysteries for his own alone, of whom he is honoured and feared; for God himself useth no better similitude than the fire, whereunto the Ancients exhibited divine honour, and by the help of the same, perfected all their Sacrifices: So among the CALDEANS, Fire, and God are called by one and the same name of ESCH: and among the HEATHENS, the chief Philosophers, yea HERMES himself thought the Sun to be a God, and worshipped it for a God. These things are found expressed by MUTIUS concerning the nature of Gods, and therefore those things are not necessary which may be here repeated. Yet this is well to be noted, that God hath always appeared to his Saints under the shew of fire, and hath talked with them out of it, it being that which is full of the greatest mysteries, yet observed but by a few, as in a peculiar little work concerning the concentration of the Heaven and the Earth I will more plainly and fully declare. I affirm therefore, that it can scarce be, that the admirable, yea incredible nature of fire should be described without the revelation of the highest or greatest mysteries of God. Therefore it is better that such Secrets are passed by in silence, than that precious pearls should be cast before Swine, who, are wont to receive them with laughter, and proclaim that they are nothing but the mere sophisteries of triflers, even as is evidently manifest from the description of J. H. S. of the Philosophers Stone, wherein Nature, he saith, makes not use of Glasses, Vessels, Fire, Salt, Urine, and the like in the bowels of the Earth, and the universal ELIXIR may very fitly be prepared by him, who also hath not handled any Chymical Labours, or was never busied about Fire and Salt: Let it shame the man of such stinking lies, wherewith he endeavours to cover his own ignorance, I on the contrary affirm, that all those that know not how to handle Fire and Salt, do in very deed know nothing, but do give credit unto those things only which they hear, or read in others writings, and also for that cause are unworthy of the name and title of true Philosophers; for true Philosophy is to be thoroughly or perfectly learned by the help of Fire and Salt alone, the which God willing shall be more evidently demonstrated.

III. It is moreover demonstrated, that in all Salts an admirable Fire

doth lurk as being laid up therein, though the indeavour whereof very many admirable things may be perfected as well in Medicine as in Alchemy; and also that it may be altogether performed, that out of Vitriol the Stone of the ancient Wise men, out of Salt peter a spiritual Gold, and an excellent yellow tincture, and out of common Salt the true Pearl of the Philosophers may be prepared.

In all Salts, that a most potent Fire doth lurk as being laid up therein, those have best known who have the labours of the fire thoroughly viewed and certainly known. For through the efficacy and operation hereof, salts are reduced unto a fiery force, or power or unto a moist fire, out of which they before arose, after the laying down of their earthiness, ye-tone salt draws out one fire far unlike to the fire of another, so that this is volatile, the other is fixed, and remaining constant in the fire; another is partly volatile and partly fixed, even as the operation shall procure this or the other property unto them, yet all such fiery salts may by the benefit of Art be concentrated, and made more efficacious than they were made by some one distillation. For example sake. If any one beholdeth Vitriol, and considers of the nature thereof, he shall in very deed certainly find that by the help of, a strong fire, there may be allured or extracted out of it that which was in the beginning, to wit, a fiery spirit, which by the aid of external heat or fire, being reduced into a narrow Central room, or Concentration, draws out that internal fire, uncloathing it self of, or displaying so great virtues, that it reduceth into a Coal all things which it moisteneth or encompasseth, even like as if it had been burnt up by common Kitchin fire, or by Glasses receiving the Sun-beams and burning up all things that are objected against it. Concerning these fiery salts, and the preparation and use of them, I being here to deliver a few things, I will take my beginning from the fire of Vitriol, and the preparation of the same, the various and manifold use whereof shall be afterwards explained in its own place.

IV. Of the Preparation of the Fire of Vitriol.

Retorts made of the best earth do draw out the fire of Vitriol by distillation after this manner following.

Common Vitriol is calcined in earthen pots unto a redness, and reduced into a powder, it is put into an earthen Retort, and placed in a

Furnace, and a great vessel adjoined to the neck of the Retort, which is to receive the spirits going forth; the fire is kindled by degrees, and gradually increased until the Retort be brightly red hot, in which degree of fire it is so long to be urged until no white Clouds or little vapoury Mists do any longer appear. This operation is perfected in 24 hours space at the most. But if the Retort shall be very large all the Oil cannot be extracted in the space of 24 hours, but will require a longer time for the operation, which experience it self will determine; after all the Spirits are distilled off and settled to the bottom of the Receiver, the clay luting which joined the Receiver to the neck of the Retort is to be mollified with a wet cloth put round about it, and the Receiver taken off, and the spirits poured out of it into a glass body well coated with Clay, the which (having the Alembick put on) is to be set in sand, that the volatile spirit may slowly and gently be drawn off, and kept for its use afterwards to be taught. Also afterwards the phlegm is to be drawn off, and reserved for its own uses, because it hath its own peculiar virtues. At length also the last spirit is to be received in a peculiar vessel the which, after that it hath ceased, and fiery drops do follow, the fire is (by degrees) to be removed, and when the sand is cold, the gourd is to be taken out, in which (the Alembick or head being taken away) thou shalt find a fiery Oil of a black or somewhat reddish colour, the which is again to be rectified in an open fire in a Retort well coated, that it may be rendred more fiery and clear.

By this Oil admirable things, and those not only profitable for Physicians but also for Chymists, and other Artificers, are perfected as we shall straitway see.

There are indeed other ways or means also by which this oil is attained, but this afore taught is the easiest of all, although it require the more time. But if any one stand in need of a greater of the same, he may procure those greater Cans prepared of the best Earth, they being so joined to each other, that the uppermost being placed on the fire, the rest might be placed without the fire, so that the lowermost may receive the oil going out by descent.

V. A proof whether this Oil of Vitriol be well prepared and strong, and fit enough for that operation of which we here treat.

Let down a quill or some small piece of wood into the Oil, the

which, when thou hast left in it for some small time, draw it out; if it shall be burnt unto a Coal the oil is well prepared, but if not, it is a sign that some what of moisture is as yet therein, which is again to be expelled by fire.

VI. Another tryal or experiment.

Dip in the oil a piece of woolen, linnen, or which is better a piece of cotton cloth extended to the breadth of a finger, and pour on the same being taken out and laid down some drops of the spirit or oil of Turpentine, the which if being kindled they shall conceive a flame it is a sign that the oil was well prepared.

VII. Another further Proof.

Pour into some little glass some small quantity of spirit of wine wanting all phlegm, and pour on the same some drops of this oil by little and little; and if the spirit of wine kindle and burn all away the oil is prepared after a due manner.

N.B. I admonish that every one doth warily handle this operation; for in these two fires, to wit, saltish and sulphureous ones, there is great virtue hidden, the which seems probable but to a few, if it should be manifested unto them, neither that have I consulted or decreed that it should be made known to very many. These few particulars do sufficiently teach after what sort such fires are to be used in Medicine, Alchemy and other Arts; but these experiments are sufficient.

VIII. Concerning the use of this Fire of Vitriol in Medicine.

The use of this fire, as also of the volatile spirit of the same, and of its flegm, thou shalt find described in the second part of my *Furnaces*, and among other Authours; so that the repetition thereof is here superfluous, this is only to be known that this fire being only besmeared or anointed with a feather on all uncurable and Cancerous or eating Ulcers, kills the Poison, and causeth that such Ulcers do very easily admit of cure, if so be the Escharre be but first removed by the applying some ointment or emplaister which cures adustion or burning. For this oil burns up all wild or foreign flesh, and that which (as proud) lifts up it self with an abounding poison, like unto a certain

bright burning Iron, and separates all evil and hurtfull flesh from the good and sound flesh.

IX. Of the general use of this Oil in Alchemy.

By this mineral fire, all kind of Transmutations of things are perfected, but particularly it exalteth some of the more base metals into a higher degree, and makes them more constant, of which more shall be said in the following Chapters or Treatises.

In the general, some Vegetables, Animal and Mineral subjects, may by the operation of this Oil be reduced into fixt Medicines, and indeed far more commodiously than by the common fire of Wood or Coals. And moreover which is a far greater thing in this very oil a fiery Tincture is hidden, and is manifested by the benefit of Art, as Fryer BASILIUS and other Philosophers do affirm.

X. Of the use of this fire in other Arts.

By the virtues of this invisible, and yet essential fire, all sorts of most profitable matters are performed, the which notwithstanding is not here safe for me to describe, but I am constrained to refer it till another time, it only in this place seems worthy my labour, briefly to shew that this fire performs all those things which the fire of Coals is otherwise wont to effect.

Truly it is a fire, but it shineth not like the fire of Wood or Coals: But he that will have it to shine, he must needs add unto it a subtile or fine Sulphur, that he may extract or allure forth of it a visible fire.

This fire being defended against the entrance of the Air, remains occult for many thousands of years, and doth not manifest it self, unless any one make it manifest.

Truly it is an admirable fire, and most fit for the effecting of many incredible things, whereof we have spoken many things sufficient for this time.

XI. An evident demonstration of such a fire lying hid even in the Salt of the Kitchin, and that known to every one.

After that PLATO and many other Philosophers took notice that

nothing endowed with life did consist without Salt, and that dead Carcasses themselves were preserved for a long time from putrefaction by the virtues of the same. They thought and wrote that a certain divine thing lay hid in it. But after what sort this divine and hidden thing is to be made visible, they have not taught. But without doubt, those most wise Philosophers would by this word shew and denote something of a singular excellency.

Because therefore God himself is a fire, and hath never appeared to his Saints in any other shape but that of fire, and besides also all Salts are generated in the moist bowels of the earth from an Astral fire, and on the contrary, a true fire may by the operation of Art be extracted and rendered palpable and visible out of all Salts, it being that which without doubt lay not hid unto them, therefore it is also very likely that those Philosophers have not without a cause of great moment written that a certain Divine or fiery Being did secretly lurk in Salt.

But that they have intimated not any thing to be better, or more noble than that fiery and saltish Spirit may be foreseen by an easie conjecture; for if a certain divine thing shall lie hid in Salt as they write, it shall of necessity follow that that divine spark being freed from all its earthly bonds should be far-superiour to all earthly things in beauty, virtues, efficacy and power; and that next to the eternal God himself it should remain the chiefest and most precious Pearl of the World.

But who shall teach us the manner of separating so precious a Pearl out of the common and Kitchin Salt? None but God alone, or some good friend; who can make his friend a partaker of the knowledge received from God?

But since that very few mortals do seek, love, fear and honour God with sincere hearts, but do much rather cleave fast unto the frail and unjust Mammon, and attribute divine honour unto the same; its no wonder that God doth reserve those things to himself, or at least doth sparingly bestow on us those things which he abundantly supplied the Ancients withall from his own bountifull hand: And moreover the same omnipotent Creator enlightning some fit subject, with a certain spark of nature, grants unto him also so much wit that he knows that by a due silence he is to beware of this wicked dreg or dross of the World. Whence it is no wonder that the light of nature is at this day made known to so few mortals.

But before I treat in many particulars of that precious Pearl of Salt, it seems altogether necessary for me, first to shew the manner and reason of extracting that fire out of Kitchin Salt; the separation whereof can be perfected in no other respect than through the violence of common fire, to wit, when as the Salt being mixt with a certain earthly matter that it cannot flow, is urged in a retort with a most strong fire, that the more pure part of the Salt, which is nothing else but a sharp spirit, may depart into the Receiver joined to the Retort, in which sharp and sweet spirit a most efficacious fire lurketh which in manner following is to be extracted and concentrated.

XII. Of the preparation of the fire of Salt.

Take of this acid or sharp spirit of Salt, rectifie it out of a Glass Retort in sand; the flegm will come over first, which was put in the receiving Vessel in the first Distillation to condense or collect the spirits the more commodiously. After that all the flegm is come off, and acid drips begin to come, remove or change your Receiver, and take your spirits therein; continue the distillation so long until all the spirits be come forth, it being indowed with an acid sweetness, is an effector of very many operations, which doth bring much profit both in Medicine and Alchemy, as is manifest out of diverse of my writings, and especially out of the 2nd. part of my *Furnaces*, and the comfort of Mariners.

In this sweet and sharp spirit like Wine there is an infernal fire hidden, which doth equally like Coals burn up all things put into it, like as the fire of wood and coals doth Vegetables and Animals, and it reduceth all things which common fire doth, by calcining them into ashes, such as are immature metals, tin, lead and the like, which when they are put into it, it burns them up by calcining them into white ashes.

XIII. A Concentrating the rectified Spirit of Salt into a moist and cold Fire.

Every Spirit of Salt consisteth of two things, to wit, Fire and Water, which water the fire doth so firmly co-knit to it self, that it cannot be wholly separated by any distillation or rectifying; but it always adheres to the fire, how often soever it be rectified or

distilled; if any one therefore desireth by rectifying to separate them he must of necessity put immature metal like subjects to the Spirit of Salt, the which, by how much the more immature or unripe they are, by so much they render the spirit of salt the purer; such are LAPIS CALAMINARIS, ZINK, and IRON, which by reason of their moist and attracting nature, do draw to them that invisible fire out of the spirit of Salt, as it were that agent whereof (as to their maturity or perfection) they are necessarily destitute, and without which fiery agent, a metallick kind of body is able to attain unto no perfection in the earth.

Such metallick subjects therefore, the spirit of salt, they being put into it, assaulteth, and as much as it can dissolves them. This solution being distilled out of a glass retort by sand, with the more gentle fire, sends forth nothing but a meer and unsavoury phlegm, the fiery essence it self remaining with the mineral in the Retort, the which if it be more and more urged, and the fire more increased, that it may become plainly burning bright, then that mineral cannot longer retain the fire of the salt, but dismisseth it, which descending into the receiving vessel, is condensed into a thick and fiery oil, which is afterwards to be kept in strong and well stopt glasses, because it fumes without intermission, and desires to return into the air, as it were its Chaos from whence it came forth.

This fire is the operator of great effects in Alchemy and Medicine, of which effects very few have known how to discourse. But it hath far different properties and qualities from that which is extracted out of Vitriol, whereof it shall be afterwards treated.

And although through the help of this fire, incredible things may be performed as well by Chymists as Physicans, and other Artificers; yet it is a consuming, destroying, and also a ripening fire; neither hath it the least of the most noble Pearl with it whereof we have made mention above, and the which in this preparation is converted into such a fire.

That Pearl, if it should be extracted or allured out of Salt, in my simple opinion it were to be extracted not by the benefit of the fire, but through the endeavour of metallick and attracting subjects.

But although I do not profess my self to be so skillfull a Master, and do not arrogate to my self the knowledge of so precious a pearl, yet I cannot but bewray that small little spark of Nature which God hath granted unto me, that so every one may have a clear knowledge and sight of what admirable mysteries Salt doth hide in its own vile body.

XIV. The manner whereby that most precious Pearl of Salt may at least wise in some respect be rendred conspicuous or apparent.

Even as I have admonished in my foregoing writings, that the powers, colours, and virtues of all Vegetables, Animals, and Minerals are found concentrated in Fire and Salt, so also I now affirm and assert the same thing that by Salt through the benefit of Fire, all Vegetables, Animals, and Metals, may in their own species, nature and properties be increased and propagated into an infinity. So that we have the seeds of them.

For example sake, I prepare Kitchin Salt by the fire, that its tartness being lost, it puts on the nature of an Alkali or Lixivial Salt, I mix some parts thereof with some barren earth, or with naked sand, the which I moisten with water, in these I sow the seeds of vegetables, that they may be nourished by that Salt and may grow, which in thus growing do obtain their own proper figures, virtues and colours, they appear green, yellow and red, sky coloured, purple coloured, and white, & etc. and have a sweet, sour, sharp, bitter, savour, even as God hath bestowed on every particular kind its own proper nature, which operation proceeds from this one only Salt, and the fiery beams of the Sun being tempered with air.

When therefore Beasts are fed with these Herbs growing, and receiving nourishment from the Salt, they are of necessity also nourished and increased by the same; even as also the same Herbs growing from the same Salt do supply nourishment and increase themselves.

But if any could obtain the true seed of Gold, and increase that seed by the help of Salt and Fire; he might (without doubt) obtain great plenty of Gold, but God will not have it that the tail of the Goat should be as long as the Cows, the which being lifted up with too much pride, would strike out her own eyes with her too long tail.

If therefore all things and Gold it self, as also Silver, Pearls, and precious Stones, are after an invisible and occult manner hidden in Salt, and may by the help of Art and nature be rendred palpable and visible; why also might it not come to pass that the most excellent Medicine and most precious Pearl of the wise men might be allured forth out of the same Salt? Truly common Pearls are bred out of Salt waters, wherein if the first matter of Pearls were not, after what manner or sort should they bewray themselves out of the same? Therefore that it

may evidently be made manifest, that by the operation of art, also Pearls may be extracted out of Salt, which do far excell those Pearls, which by fishing are drawn out of the depth of the Sea, in beauty, virtue, efficacy and excellency: I will prescribe as much indeed as hath been granted unto me, for demonstrating the possibility of the thing, a certain manner whereby every one shall be able to take to him a firm and sure foundation of weighing or considering of the matter more exactly.

XV. An operation of alluring forth a Philosophical Pearl out of Salt.

Dissolve thou in common water, as much of common Salt as thou wilt, by how much the greater plenty thou shalt take, by so much the more thou shalt obtain.

In like manner dissolve in AQUA FORTIS one or two Ounces of Silver, pour this solution of LUNE on the dissolved Salt, and stir both the dissolutions up and down divers times, that it may become white and like unto Milk. For Silver cannot well indure the Salt, but departing from it is precipitated to the bottom, and there resides, in the form of a snow-like Powder, which by the effusion or pouring off the water is to be separated and dried.

This silver powder hath extracted a spiritual and philosophical gold, or the said precious Pearl out of the Salt water. Because DIANA hath known no less how to fish Pearls in the Salt Sea, than to hunt wild Beasts in the green Woods: But that Pearl is made corporeal and visible in manner following.

XVI. How the Pearl being attained is made visible.

It is to be noted that that silver powder being thus by it self, and without an admixture of other fixed Salts, doth very hardly by fusion return into its former form of silver, but that it flows like Salt, and pierceth any vessel whatsoever, yea doth depart into a smoke. For the spirits of the Salt do render the silver so fluid and volatile, that it is made altogether mercurial; and therefore its more tender and noble part may be separated from its more gross part by distillation, if this could be done by glassen, or earthen, or metallick vessels.

When this mercury of LUNE is melted in an open crucible, it vanisheth into smoke. It being put into a Glass Retort, refuseth to yield to the fire, the which being too much increased makes the glass to

melt, and destroys the glass together with the silver. If earthen vessels be used, the same mercury pierceth the same unhurt like oiled Leather, when it departs, the Salts also depart into smoke, and do leave little grains of silver adhering to the vessel, whereof in this respect there is made a loss, which renders the sublimation void.

Of Iron vessels also here is no use, because of the Salts that are admixed with the silver rising up against the Iron, they dismiss the silver reduced to its ancient body, and besides a little spirit of salt they send forth nothing, so that no separation is made, but the pure and impure do remain co-mixt.

For the sake of avoiding those discommodities I have tried many ways and manners in vain, and at length I took notice, that if such a matter be added to the most penetrating mercury of LUNE, which may so hinder its efficacy of solving and co-melting, that it may be changed into a porous lump, that then, through the benefit of fire there might be an easie separation thereof, which without this help doth most difficultly exist.

In the name of the Lord, therefore adjoin thou unto thy fishing Net; that is, unto the mercury of LUNE, such a matter in due weight and measure which admits not of melting, and which suffers not the mercury of LUNE to conflux, or melt together. Such are wooden Coals being reduced into a fine powder, with the which being mixt with the mercury of LUNE, thou shalt fill thy distilling vessel, whether it be earth, or iron, or glass which is the best of all, even unto the half part, and shall set it in the fire, the which is to be gently increased by degrees, until the glass become burning bright, keep the vessel so long in this heat until all the spirits are departed, which ceasing, thou shalt take away the vessel being cold, in which thou wilt find the remainder of the mercury which did not ascend, reduced into a corporeal or imbodied silver, or at least wise such, to which adding a little borax is easily reduced into silver, the which doth contain somewhat of gold; but keep thou that subtile and pure matter which ascended in distillation as a precious treasure, and meditate after what sort, or by what means thou mayst be able to fix this precious Pearl, and convert it into a fusible, or flowable, and piercing stone.

But in what respect, or in what manner this thing is to be done, in very deed I cannot tell, because I am he who have not hitherto had leisure, nor time of perfecting that thing, and therefore I have been willing here to shew only these things which I have seen with my eyes,

and handled with my hands.

Another shall be able by his own judgement to make trial, and to see what God will bestow upon him, I have shewn in stead of the mercurial Statue or Image, that which shall suffice at present.

XVII. A more easie manner of obtaining a Philosophical Pearl.

If thou shalt be desirous of obtaining a Philosophical Pearl after a more easie manner, thou must of necessity thus operate.

Unto half a Lotion, i.e. two drains of the mercury of LUNE, add a little of the powder of Coals, and put the conjoined matters into a small glass, the which set in a crucible encompassed with sand unto that height which the matter in the glass it self shall determine. On the mouth of the glass put a small piece of some glass that it may be well covered, and so place thou a less crucible with the upside downward upon that little glass, that its (top) utmost and highest bound being overwhelmed with the said sand may drive away all air from that little glass.

Set that crucible being in this manner co-fitted, and containing the little glass shut up between them in live Coals of Wood, and make them bright burning hot, that that may remain fired for a quarter of an hours space, then let them cool, and thou shalt find a little lifted up by sublimation, the rest being melted by borax, will afford a silver impregnated with gold, yet without gain, the which demonstrateth only in the space of half an hour, what may be done; but what gain may be obtained by this very operation shall hereafter be shown.

Furthermore it is here to be seen how most beautifull a Pearl doth bewray it self, although very little of it come forth, because in this labour no small part thereof flies away into the air, and sheweth only its colours alone in the glass, far more beautifull than gold, silver, and precious stones; if any one shall rightly operate, neither shall there be any Painter who shall express it by imitating and painting.

For this time take what hath been spoken in right and good part, and immediately weigh thou so great a thing the more exactly, pray, labour, seek, and in seeking thou shalt find such things which thou couldest never before have believed.

The Brethren of ignorance, my enemies, will here object against me, and say, that these most elegant colours have drawn their original from the silver; unto those I briefly answer, that they were indeed extracted

out of the Salt by the help of the silver, but that they do not (per se) or by themselves pertain to the silver, for if they were of the silver they would also be solved by AQUA FORTIS, the which, since it is not done, they are not silver, but the meer ANIMA or Soul of the Salt. That this thing may be confirmed by a more evident argument, I bring the solution of Saturn or Lead, the which it self also can fish out the same Pearl from Salt, without Silver. If any one shall operate after the same manner which I but now shewed, I also add this, that I am hereafter to teach a way whereby SATURN may be able to fish pure simple gold out of all salts.

Let us now return unto the moist and cold fire of the Philosophers, and see what an admirable fire God hath hidden in Salt Peter.

That a most potent fire doth lurk in Salt Peter is not worth our confirming by any argument. That horrible Gunpowder which shakes or rends all things asunder proveth the thing most manifestly, and AQUA FORTIS, which dissolveth and destroyeth all Metals, yet another fire of far more powerfull virtue is hidden in the same salt, which very few have known and beheld, and the which we will here make manifest, for the honour of God, and the profit of all mankind.

XVIII. Of the preparation of the moist and cold fire of Salt Peter.

Take of Potters earth being without sand, and burnt, 2 parts, and 1 part of Salt Peter very well purified, with both these matters being reduced into powder and well mixed together, fill a glass retort well coated with clay, put it in a Furnace for distillation, and join a Receiver to the Neck of the Retort, into which put as many pints or pounds of water as there were pounds of Salt Peter mixed with the earth, that the Spirits going forth may so much the sooner be condensed into moisture, after thou hast exactly joined and luted thy Receiver to the neck of the Retort, with a due lute (or clay) kindle a fire according to Art by degrees, and the spirit of the Salt Peter (representing a yellow or red mist in going forth) will join it self to the water placed in the Receiver.

All the Spirits being come forth, take off thy Receiver, and separate them from the water, put this sharp spirit of Niter into some strong glass; it being by distillation freed from its superfluous phlegm and rectified, is applied unto Medicinal And Chymical uses; concerning the operations and virtues whereof there is mention made in the second

part of my *Furnaces*, and in the Dispensatory of SCHRODERUS. Moreover, the manner of extracting and concentrating a fire of this spiritus thus.

Pour this spirit of Niter on the powder of LAP. CALAMINARIS or ZINK reduced into small little grains that it may dissolve as much as it can; and when it will dissolve no more in the Cold, place the glass in hot sand that it may dissolve more of the matter, filtre the solution and by sand draw off all the phlegm in a glass retort; the phlegm being all come off, change thy Receiver, and increase thy fire and drive out a fiery oil, which oil thou shalt keep well stopt, because it uncessaritley fuming would wholly vanish away in the Air.

This fiery smoke of Salt Peter, as also that of Vitriol, and common Salt, burns up all Herbs, Grass, Leaves and Flowers, and whatsoever it toucheth, just as if they were burnt with a strong heat of the Sun or Fire.

And this is the preparation of the moist and cold fire of Salt Peter, of the use and efficacious operation whereof in Medicine and Alchemy, it shall be more exactly and fully treated on in the following Chapters.

XIX. Of the moist fire of Allome.

Allome also by the work of Distillation and Concentration yields an efficacious fire most like to that of Vitriol, in efficacy and virtues, but the plenty doth not answer by reason of too much earth wherewith it abounds, yet if somewhat of the other Salts be added unto it, rightly and orderly bestows its fire.

XX. Of the moist and cold fire of Sulphur.

Although Sulphur finds not a place in the order of Salts, because it refuseth the solving in water, yet it contains a vitriolated salt laid up in it, which doth not manifest it self before that the more fat substance thereof shall be withdrawn by inflaming, by the operation whereof the salt is attenuated or made thin, and is carried on high by the flame like a sharp smoke, so that this sharp sulphureous spirit burns all things which it toucheth, after the manner of all those fires which are drawn out of salts.

For the attaining this vitriolated and sulphureous spirit the flame of the sulphur is to be received, in a certain Alembick made of glass or

earth, peculiarly for this operation, wherein that vitriolated spirit of salt condenseth it self, and issues forth like a thick fat, and fiery oil, not unlike to that which is made of Vitriol, whereof it is treated on in my *Furnaces*.

All these things do very evidently confirm those particulars, which I have many years ago committed to memory; concerning Sulphur and Vitriol, to wit, that Sulphur is the original of all metals, and that no metal at all is digged out of the earth, which hath not either Vitriol or Sulphur, or for the most part both adjoined unto it, for no sulphur is destitute of vitriol, nor vitriol of sulphur, so that both of them do challenge the rise or birth of any kind of metals whatsoever unto themselves. And every sulphur is by its own proper agent or vitriolated salt, which it hath in its possession by nature (whereto the central fire of the earth is an assistant) excocted or boiled up more and more into a metal; neither doth this universal agent or vitriolated salt depart from the fatness, or its patient, until the fatness together with the agent shall depart into a malleable metal, or a metal that undergoes the hammer; Lead, iron and copper, do make this thing manifest, which metals do never appear without vitriol and sulphur, and that for this cause; because they being as yet unripe and imperfect ones, do stand in need of their agent. A less plenty of Sulphur or Vitriol is found with silver, than with Copper.

Gold hath little of Vitriol or Sulphur, yea plainly none at all, if it shall attain to its highest maturity, because it is then found to be pure and malleable, and wants not a further fusion or melting, but by how much the more of Copper, Gold, and Silver have, by so much the more of Vitriol or Sulphur they have, as also require the more time for their ex-coction and perfecting.

From these particulars, it manifestly appears in what respect metals may in a long time be generated in the bowels of the earth by their first principle, namely Sulphur; and may be ripened to perfection, by its own Salt, or agent, which it hath in its possession.

If nature doth effect this in a long time, why also may it not come to pass, that art should perform the same in a shorter time?

But let these things that have been spoken be sufficient, he that understands not, nor also perceiveth the scope or mark, which I so clearly shew is blind, and doth not admit of a remedy for his blindness.

Truly I judge these few things, (but yet such as shew a most long way with a most shining Torch) to be sufficient concerning the moist and

cold fires or minerals, by which the ripening and perfecting of metals, are to be perfected as well by nature in the bowels of the earth, as by art above the earth.

N. B. If therefore a mineral may by the help and impulse of its own vitriolated Salt, wherewith it is endowed, be ripened from its vile form and lowest degree unto a better, and at length unto the best of all, that is, unto the purest gold, it being that which none (that is seasoned but with the least knowledge of natural things) will deny.

Also if such a Sulphur is hidden in any vegetable, which answers to a mineral Sulphur in its nature and properties, why also might it not come to pass, that this same Sulphur might be perfected into mature gold, alike equal to the other? From hence it most evidently appeareth that in any Herb, although the most abject one, which is promoted by the Sun unto its maturity, a spark of the immature beams of SOL may be found, which through the operation of art, are to be changed into pure gold. But after what manner such a Sulphur may be extracted out of any Herb or any Wood whatsoever, in all things like to a mineral one, I have long since delivered in my little work concerning the nature of Salts, and in the second part of the MIRACULUM MUNDI, and below I will demonstrate by a much more clear manifestation.

Let us proceed to Animals and Vegetables, and consider whether in these very things, such a ripening fire may be found, and may from thence also be drawn and made visible.

But we must know that no small living creature or small Herb can grow, live, and receive, increase without a certain fiery and Salt Agent; the which although it cannot be believed by any one that is lifted up with pride, and of a stupid brain, yet it in very deed existeth, and can easily be demonstrated by the hand of the Artificer.

XXI. A most powerfull manner of extracting a fire out of any wood, or any Herb whatsoever, and of rendering it palpable and visible.

Fill some glass, stony, or earthen distilling vessel with any dried wood or dried Herb, and distil off the Vinegar or sharp liquor from thence, and separate the Oil from it; and pour that sharp liquor on LAPIS CALAMINARIS, ZINK, or ashes of lead, which matters do dismiss all the unsavoury moisture in distilling, and retain the whole sharpness with themselves, the which being distilled from thence ascends like unto meer fire, it being of great use as well in Medicine as Alchemy, whereof

mention shall be made hereafter. But here it is to be noted that this fire extracted by distillation, is only a part of that fire of the wood and Herbs, and that the other part remains in the Coals thereof, which is far more fixed than that which ascended, and is that Sulphur which we spoke of but now, which wholly answers to the nature of a mineral Sulphur, and which may be extracted out of the Coals being solved by SAL MIRABILIS, which shall be taught and manifested in the following Chapter.

For if there were no fire in them, after what sort should they burn and draw out heat? All Coals being converted into ashes, after that their hidden Sulphur hath done its office, the feces of the wood remains like dead ashes, wherein as yet lies hid a certain singular vegetable fire, being altogether of another nature, and wholly contrary to that which ascendeth in Distillation. This water being extracted out of the ashes presents a LIXIVIUM, the which by decoction exhaleth all the moisture, and leaves the rest a fiery Salt, whereof in the second part of my Dispensatory. If it be made hot without fusion, or melting, it becomes the more fiery, so that it being bound to the skin for some hours in the bigness of a pea, it burns a small hole therein as if it had been burnt with a bright burning iron. And therefore Chyrurgeons make use of such fires that they may open unripe Ulcers, or make Issues.

It may be seen by these particulars that in any wood or any Herb, there are also fires of divers kinds, the which also are found in living creatures, they being partly volatile and sharp, and partly fixed, and obtaining the nature of ALCALIES or LIXIVIAL Salts.

Both Salts or Fires, after they are conjoined they lose their fiery nature, and get unto themselves another quality and property, to wit, a middle one, and these two contrary fires become an essential tartarous Salt, and sweet in use, wherein no fire appears, although that fire being turned out and in by art, may be again extracted and made visible.

Concerning these wonderfull changes of nature, and conversions out of one species or particular kind into another, many things are found up and down in my writings. In the first part of the continuation of the miracle of the world, it is manifestly described after what sort a plenty of such fire may be attained out of woods, but the concentrating thereof is here delivered. In general it is here to be noted, that one wood or one Herb doth more abound with such a fire than another. But by how much any wood or Herb is the elder, and by how much the longer the Sun-beams have operated on it, by so much the more of fire is in it, as

is manifest from the Vine; which hath received plentifull Rays of that sort, and therefore excells all other vegetables in the greater and stronger fire, as appears not only by the burning spirit, but also the tartar, or tartarous Salt thereof, which is almost all fire, and yet without Distillation and Calcination it cannot be manifested.

That therefore it may be brought forth into open view, and be rendered visible, we must make use of the following operation.

XXII. The manner of manifesting the fire of the Vine.

Fill thou a Glass Retort with common Tartar, and distill forth the volatile spirit and oil, the which thou shalt separate after a due manner. Great virtues are in this oil, whereof I have made mention in the second part of my *Furnaces*. The spirit is to be rectified in B that the fiery substance only may depart, and the unprofitable flegm remain behind; the rectified spirit is to be poured on the fixed Salt, (residing in the Retort, which must be first calcined by a strong fire and made fiery) and from thence again distilled, that the fixed Salt may retain the rest of the unprofitable flegm, and the spirit attain the greater fiery virtues for the performing of wonderfull effects in medicine, the which my writings do teach.

XXIII. Another manner of extracting or drawing forth a far more stronger fire out of Tartar.

Dissolve thou that Alcalized Salt from which the spirit was abstracted in rectifying in a little water, that it may become a very sharp LIXIVIUM or Lye; pour one pound of this LIXIVIUM on two pounds of white Tartar in a Gourd, and that being reduced into powder, put on a head which being well luted on with clay, set it in sand and kindle a fire by degrees, if thou shalt rightly work thou shalt obtain a most subtile fire, one drop whereof doth burn the tongue, as if it had been touched with a burning Iron.

How wonderfull things may be effected by this fire, I have already shown in other places of my writings.

XXIV. A manner of drawing forth as yet a more vehement fire out of Tartar.

Take of crude Tartar and the REGULUS of MARS, or the purest metallick part of iron, the SCORIA being separated, equal parts, the which thou shalt mix by beating together, put them in a crucible with a cover so well fenced with clay that it may admit of no air, keep them in a bright burning fire for the space of an hour, then take them away.

From all these particulars it is made known to every one that a vehement fire lies hidden in vegetables readily serving for the effecting of many admirable things in Medicine, Alchemy and other arts, from the declaring whereof the shortness of time and this treatise, commands us at this time to cease. But moreover we must see whether living creatures also are potent in the same fire, and in what respect any one may be made partakers of the same.

XXV. The preparation and Con-centration of fire out of Animals.

As the Vine is the most noble of all vegetables, so man also is esteemed by all that are indowed with judgement to be the most noble of all Animals, or living Creatures; the truth whereof the thing it self affirmeth by a plentiful Testimony.

Therefore we pass by all other Animals in silence, and do here shew (by the following manner) the preparation of that fire only that lies hid in Man.

The Ancient Philosophers have called the great World, MACROCOSMUS, and man as it were the lesser World, MICROCOSMUS, and a comparison being made, they have determined that what things are found in the greater World, the same are to be found in the lesser World, that is in Man.

From whence also they unanimously believed, and also committed to memory, that as well the life of the greater, as of the lesser World, doth consist in a saline and saltish spirit, and that this spirit doth bear rule in one place more, in another less. Neither is there any one also, who will or can deny, that the whole earth is filled with Salt as it were its Balsam; and that minerals are alike equally bred thereby in the very bowels of the earth, as vegetables are in the Superficies.

Yet notwithstanding the Salt of the great World is no where more plentifully found than in water, or in the Seas; the which as it is a thing most known, it needs no confirmation. The same thing is to be understood concerning the little world, viz. Man, and although the whole body in all its parts abound with their true Balsam, yet a greater plenty of this Salt and Balsamick spirit, is found in his flesh than in

his bones, a greater plenty likewise in his blood, than in his flesh, but the greatest plenty in his Bladder, or in the Salt Sea of the lesser world, the which is hidden to none, but it is the custom not to seek necessary things in remote places, but in places nigh where they are most easie to be found.

Hence because a more plentiful Salt is no where found in man

XXVI. The operation of preparing a fire out of man's Urine.

I have at large delivered this operation in the second part of my *Furnaces*, whither I refer the Reader; where he shall not only find a manifold composing of this fire, but also its various use in Medicine.

But although it be needless to describe that operation there repeated, yet it seems meet to me (for a more evident declaration's sake) here to adjoin some admonitions which concern it.

XXVII. Observations which concern the preparation of an Animal Fire.

Such a fire is for the most part drawn forth out of man's Urine being purified by it self for the space of some weeks, and is by rectifying converted into a moist and fiery essence as the second part of my *Furnaces* sheweth; I have there taught a more easy manner of drawing forth the same fire out of SAL ARMONIACK, which is prepared out of Urine, and by the addition of a strong LIXIVIUM it is distilled and rectified.

I have also taught the manner of preparing the same fire out of SAL ARMONIACK by the Addition of LAPIS CALAMINARIS, by distilling it through a Retort.

Spirits rightly prepared after these manners are equally profitable in Medicine, Alchemy, and other arts; because they are those which being well made are all of them good, after what manner soever they may be prepared.

But although these volatile animal fires do readily serve for the performing of famous and notable things (and the fixed Salt of Urine it self, may by Distillation and rectification be concentrated into another kind of Fire) yet they are at a far distance from that true Philosophical fire which the Ancients have hidden with so great care and diligence, because that in these preparations the best and chiefest part of the fire flies away and is lost. But this I say, that these fiery

Spirits of Urine being con-centrated even as I have taught them to be, are indeed able to effect all those things which I have attributed to them, and shall as yet attribute. But indeed they do not coagulate the con-centrated fire of the Vine, which coagulation is not the least key for the composing of an universal Medicine.

For when the Spirit of Urine attains this nature, that by coagulating the most subtile Spirit of Wine, (when poured on it) into a Salt, this Salt extracts the soul of Gold duly prepared; the which also, if it be changed by it self, and converted into a dry and sweet Salt, and be fixed, possesseth the virtues of a Nedicament of a most famous and great use in Medicine.

Every one that is illustrated, but even with the least light of nature, shall be able by an easy business, to smell out what may hiddenly lurk under this Salt.

From the most pure Vine is the substance of the Spirit of Wine, which strengthens the heart of man beyond all other things, as also his brain, and other members.

The Spirit of Urine is the purest and most subtile Mercurial Animal Salt, not having its like in penetrating, opening, and resolving.

This subtile Mercurial, Animal and piercing fire therefore, being joined to the most pure vegetable, that is, the Spirit of Wine, that it may be changed together with it into a dry Medicine, any one shall be able by an easy conjecture to forsee what it will effect in Medicine.

But that I may make manifest the errour, and demonstrate the cause wherefore a Spirit of Urine is so seldom prepared, which will coagulate the Spirit of Wine into a Salt, I admonish that a respect be had by every one of the following particulars.

For first it is to be taken notice of, that the most subtile part only of the Spirit of Urine, and not the more gross part, is fit for the coagulation of the Spirit of Wine. If therefore in the preparation of the same, the most subtile part shall be lost, through the negligence or ignorance of the operator, it can in no wise be brought to pass, that the more gross and dreggy part should cause that coagulation.

But that most subtile Spirit doth not only vanish away in distillation through an insufficiency of the Luteing not being good, but also a great part of the same is lost before distilling, to wit, when the Urine being successively gathered, is constrained to stand and wait too long, so that the Spirit by little and little exhaleth and departs into the Air, especially when it is gathered together in the Summer or

Winter time, for that fire not being patient of any extreme, is expelled by a little heat or cold, and therefore the fittest times for collecting the same are the Months called MARCH and MAY, or SEPTEMBER and OCTOBER, in which Months the Air is temperate, neither too hot, nor too cold, those Months therefore are the fittest for collecting and extracting of an Animal fire out of it.

Furthermore, CALX-VIVE or UNSLAKED LIME is to be added to the Urine (when putrified) and distilled, that the insipid water may be so much the more easily or readily separated from the volatile fire, the which is not done if it be distilled per se.

I would not pass by these few things in silence for the sake of the Reader, and of him that is studious of good Medicines: But after what manner Metals may be amended by this Animal fire is not here shewn, but God willing shall by and by in the following Chapters. But we put an end to the preparation and con-centration of Animal and Vegetable fires, with these sayings, whose admirable virtues and faculties in medicines, Alchemy and other profitable Arts, shall here be manifested in order, as much as time will permit.

Look I pray you on the Elementary Sun, as also on the fire of woods, and the virtues of light, and the virtue of both, the which all creatures, and especially mankind it self, is constrained to make use of for their own safety; could even the least grass bewray it self? Or any small worm be bred and live without the Sun? Could any workmanship or artifice be exercised without the help of common fire? The which, if it were not, we should be constrained to eat unboiled Herbs, and raw Flesh like wild Beasts; yea, the whole conversation and negotiation or traffique among men should be wholly taken away, if earthly fire and light should be wanting unto us.

If there were some one man only in some whole City or Province, or in a whole Kingdom, who alone could make others partakers of fire and light, would there not be made the greatest concourse of all men unto him? But because it is known to every one, and every one hath known by an easy manner, how to strike it out of flints, it is had in no esteem, for it is customary not to esteem those things which are made common, although they are precious. The same thing hath happened to the fire, the which although it ought to be made of greatest account, yet it is reckoned of no worth because it is common and vulgar.

But even as the common fire, and that known to every one, doth by very many most profitable operations bring much good to mortals, who can

least of all want the use thereof; so also I affirm that those artificial and hidden fires are to be very much accounted of, because a Physician can hardly be without them, for the preparations of efficacious Medicines, and a Chymist can never want for the transmutation of the more base metals into better, either of them without the aid of those fires shall perform nothing of any great moment in Chymical Labours.

He that works and is ignorant of such fires, what will he effect in metallick operations? He being conversant in cold and darkness is afflicted with the same difficulty, as a certain brewer or baker is, who wants wood in the winter season, or who is not able to use water, it being congealed into ice, the one he cannot bake although he hath the best meal, and the other brew drink although he have abundance of the best malt.

So also goes the matter with Alchemical Affairs, the want whereof causeth that we handle not the most noble Alchemy with any profit, but rather receive loss from the same, daily experience being witness, that 100 are wont to be sooner undone than that it happens to any one man to get himself riches thereby. The blame of which discommodity is not to be transferred on an impossibility of the Art, but rather to be imputed to the want of those moist, cold, and ripening fires extracted out of Salts, the which after what sort they ought to be used for the amendment of metals, as also for medicine and other arts, shall be taught partly in this, and partly in the other Centuries.

XXVIII. The general use of our concentrated fiery and ripening Spirits, extracted out of Salts, in the amendment and converting of metals into more noble ones; also the preparation of many excellent medicaments, and the increase and amendment of many other arts, are briefly here demonstrated; the which, God granting, shall more largely be declared in their particular use.

That I may discourse in few words whether imperfect metals may by the operation of the more common and gross Salts, and of the fire be broken, destroyed, cleansed, and reduced into a better form, it being that which the fifth part of the prosperity of GERMANY confirmeth by divers experiments.

I affirm that the pure Spirits of Salts, do with a greater efficacy, and far better effect the same, the which, since those simple

Spirits are able, better and more easily to perform than gross Salts, why should not also con-centrated Spirits after the best and easiest manner of all perform the same thing?

From a like reason the use of Salts shall not be of so great efficacy in the preparation of medicines, and other arts, as the using of common Spirits is; the which, notwithstanding being still for the most part clogged with much phlegm, do of necessity not disclose so great virtues, as those concentrated fiery Spirits do which are freed from all phlegm.

The Sun-beams are for an example which do not send forth so great heat, when they are co-mixed with a moist air, as also green and wet woods do not so vehemently burn with heat, as withered and dry ones are wont to do.

Yea if the hot beams of the Sun are con-centred in or by some hollow glass increasing the fire, or the fires of Coals by a strong blowing of the Bellows, and are as it were constrained into straights or narrow passages, they effect ten times, yea one hundred times more than those which are not centred together after such a sort. But by how much the more strictly those forces of the beams of the Sun, or of other fires are con-centred by so much the greater, stronger, and sharper heat they draw out.

A burning glass of one foot Diameter, only enflames wood; but one of two foot Diameter will melt Tin, Lead, and other metallick matters of that sort, which are easie to be melted, as BISMUTHUM, or the whitest, lightest, and basest kind of Lead, ZINK, the non-splendent metallick dark matter KOBOLTUM, & etc. But if you extend the Diameter to four foot, the Sun-beams taking the stronger increase will melt silver and copper, and will render iron it self so bright burning hot, that it may be wrought with a hammer, as if it had been heated with Coals. This effect is to be ascribed unto the con-centring of the Sun-beams by an instrument, and to the constraining of the heat of Coals, by Bellows, or Wind.

The same thing is to be understood concerning our con-centred and moist fires, which ought to be compared, not only with the common beams of the Sun, or with the heat of Kitchin fire, but also with those Sun-beams which are con-centred by a glass, and with the fiery heat of Coals constrained or forced by windy blasts. Whence they must of necessity be of greater virtues than the common Salts, and watery spirits of them, the which the more quick sighted will sufficiently comprehend and

believe. Simple Country People do see this thing with their eyes, and handle it with their hands, as well knowing that the subtile, hot, sweet Spirits of Wine and Ale, (and those procuring strength to the heart) when they are freed from all moisture by Distillation, and con-centred by Rectification; effect ten fold more than if they had still remained with their humidites.

That thou mayest understand the thing more clearly, well weigh thou Grapes, Bread-corn, or the Fruits of Trees, which we eat in that substance as the trees bring them forth unto us; and they afford us a nourishment, but not such a one, as their juice being pressed out, and separated from its dreggs, and by fermentation reduced into a clear and sweet drink.

If necessity compell, Bread corn may be used for nourishment as it is, yet not so well as when it is separated from its husks, being changed into meal, and reduced by water into a mass or lump, and Salt and Leaven added, and by Fire concocted or digested into Bread of the best Savour. By the same reason indeed somewhat better than the water it self, but if it be artificially handled, and boiled up into Ale or Beer, the husks are separated from the more pure juice, the which afterwards by fermentation, separates many dreggs from it, and arrives to a more noble nature, yielding a sweeter and better drink. But if the same juice be after that brought by distillation into a greater purity, and con-centred together by a narrow compass, (because it is a meer fire) it will exercise far greater virtues, than gross Bread-corn which wants a power of exercising so great virtues.

So also doth it succeed with con-centrated Salts, to wit, when the dreggs are separated from them by the help of art, and the more pure parts converted, and con-centred into a fiery substance, performing effects of great moment in Alchemy. But that Salts do commonly destroy metals, as well by a moist as a dry way, is known to every Barber, and persons of no reputation. But after what manner metals being destroyed may be reduced into more noble bodies than they were before, there hath been none hitherto (who being skilled in that artifice or craft) that have not hid it with the greatest care. Hence it hath come to pass, that nothing of profit hath been perceived form metallick transmutations, and Alchemy it self hath been made a mock of by the most unskillfull rout of ignorant ones, as if it were most false, and at the farthest distance from truth.

That this doubt therefore may be taken away, and the truth it self

may be more evidently placed in our view, I have resolved in my mind, by God's assistance, to place before the eyes of the whole world, a true and profitable transmutation of metals, by a clear description, and to assert the certainty of so many writings set forth by such men, by the most true experiments, so that every one that is seasoned but even with a light of small knowledge of the fire, may by an easy business hereafter obtain some profit from them. But I will first treat of common and crude Salts, and then of the simple Spirits of those, and at length of their con-centred Spirits and Fires, which we have taught to extract out of them.

But before I attempt to describe and assert this kingly and noble art, I have been led first to shew the cause why some places do occur in the description of the same, wherein words are omitted, and signs or blanks reposed instead of the same.

Indeed this was therefore done, that the art may be concealed from the unworthy, and they in all respects to be driven from the same, and may be made known only to Adeptists, and the Sons of Art.

Besides also that all secrets may not in all places, and without difference be divulged, but that the chief things thereof may be preserved for friends, lest they be trodden under foot, and broken to pieces by the unworthy, but that they may be left to friends as it were a certain secret stroak, and that an unknown one to others, for to fight successfully.

I therefore earnestly require of every one by a friendly Petition that he be not suddenly angry, if he be not able clearly to perceive, by the sharpness of his wit, all those things which I propose, but rather let him consider that they are not written for him, but for others; by whose capacity they can be perceived. Neither is it altogether necessary that all do know all things, neither also would it be of concernment if friends and enemies attain all those things in their understanding alike, without any difference, which I here openly produce by my descriptions; it is sufficient that some only, and indeed those that are worthy may clearly and knowingly possess the same, and testifie the truth.

XXIX. An infallible practice of changing the more imperfect Metals into more perfect ones by the help of crude Salts.

As I have already a little before, and also in other places of my

writings, evidently enough demonstrated that Salts, or the spirits of Salts, are in the earth, or out of the earth a universal Agent, promoting the maturation or ripening of metals: So here I again firmly affirm the same thing, and do say, that by Salts the gross bodies of metals are destroyed, and trans-changed into more noble metals, and that indeed after divers manners, and that more easily or difficultly as any one shall be more or less conversant in Chymical labours.

I will hear God willing make manifest all things, yet not to every one, but to the worthy only, and that indeed after the manner of a Clock or Watch-maker, who taking some Clock or Watch in pieces, do lay up all the parts thereof in some place without any order; the which he that is unskillfull in the art, shall never again compose and reduce into order. But another who before hath handled that art, will by an easie labour again conjoin all those parts, and reduce them into the former body of a Clock or Watch.

All those therefore who have experienced the foregoing labours to be perfected by the fire, shall by these my descriptions easily dispatch or accommodate themselves in future things, not easie to be understood by the rout of ignorant persons which have made no experiments in the fire; who will in vain look into those things which I have written; no otherwise than as if any one being plainly unskillfull in reading and writing, should behold written letters, and knows not what they signifie, or what argument they may contain: Such a man if he would be angry with the writer, should he not do him much injury, because as being far remote from the fault of that ignorance which hinders him, whereby he cannot read these letters which he had never learned to read.

The same thing must be understood concerning my writings, which are openly published, not for the sake of any one, but only of those who have first learned to understand those kind of writings.

But that I may set upon the thing it self, and may teach the amendment of metals for the better, and shew the very foundation of the whole business, I say, that a true changing of them is attempted in vain, unless they are first destroyed, and wholly slain. A grain of wheat, as Christ himself saith, will never increase or multiply, unless they are first destroyed, and wholly slain; and unless it first putrifies in the earth. If therefore metals ought to be destroyed by Putrefaction, that must needs be done by the help of Salts, according to the truth of the Philosophers Maxim: the corruption of one thing, is the generation of another. The death of one thing, is the life of another.

Since therefore metals must die, it must needs be that death be brought on them by enemies, or contrary things, because nothing in natural or artificial things dieth, unless it be slain by its own enemy.

Since metals therefore are to be destroyed, and killed by their enemies; it is of necessity that they are invaded, tortured, and so long vexed by the same, untill the Agent as the stronger part, be overcome by the Patient as the weaker part; that it be slain by it, (or rather the Patient be overcome by the Agent) and be translated into a better nature, in which action the Patient ought not to depart from the Agent, but to be tortured with an un-intermitting torment.

Whosoever seeing his enemy and conceives himself of the weaker force, indeavours as much as in him lies to decline him, by retreating but all occasions of running away and slipping aside being taken away, he is constrained to deliver his life to his enemy, who handles the Patient or suffering party according to his own pleasure, and doth whatsoever he will, therefore after the same manner is the melioration of metals, the which although they should be melted together with Salts their enemies, yet would they make little account of them, but would separate themselves from the same; so that every part of them being unhurt, would keep its own nature and essence. But if the Salts do take away the occasion of flight from metals, and do inclose them in their Prisons, that they have not way of escaping, but remain, suffer, and die, then they obtain victory over the Salt, and of slain metals are made more pure and better.

This thing is done in the fire by the moist and dry way, of which enough hath been spoken already.

This is the whole and intire art, and there needs no other superfluous teachings; yet he whom these things doth not suffice, let him read the following operations thorough, wherein he shall find truth, and see with his eyes, and handle with his hand; those things which have been heretofore impossible to him, and very many more.

XXX. After what manner Metals may be slain by their enemies and be transmuted into better.

Unto Metals not one but many enemies are adverse; and part of those enemies are enemies to some and friends to others, but the other part is friendly to some, and at enmity with others, For example sake.

Nothing more prosecutes Gold with an hostile hatred than burning

Sulphur and sulphureous Salts, such as are Alcalies, and crude tartar; the cause of this hatred is, because Gold is nothing else, but a fixed Sulphur, and therefore it disagreeeth by a capital hatred, with every burning Sulphur; Silver and Lead do love every SULPHUR, AND ALL SULPHUREOUS SALTS, SUCH AS ARE VITRIOL, SALT PETER, SALT ARMONIACK, AND THE LIKE, the which they stand in need of for their colour; they have an hatred against KITCHIN SALT, BECAUSE IT IS OF A MERCURIAL NATURE, and therefore not requiring its help, but only desiring a Sulphur and Tincture, COPPER, IRON, AND ARGENT VIVE, or Quicksilver do possess both natures, to wit, A MERCURIAL AND SULPHUREOUS ONE, and for that cause they prosecute all Sulphurs, and any Salts with love.

Tin is an enemy of all Salts, whether they are sulphureous or mercurial ones, when it is slain by Sulphur and Salt, and recalled unto life, it obtains a more pure and thin or fine body, whether of Gold or Silver, according as it shall be handled.

Moreover, if any should desire to obtain as yet a better essence out of better metals, its necessary that he slay them by their enemies, and raise them up again by their friends; by how much the greater and vehement the enemies are whereby metals are slain, by so much the more those metals do suffer, and with so much the more famous and better bodies do they re arise.

The whole art therefore consisteth in this, that metals are overwhelmed by their greatest enemies, are slain by them, and after death are separated from them, and that by their best friends, are restored unto a better life.

Thou hast the whole art, neither doth any other thing remain than that thou attempt the matter, and set to thine hand.

For example sake, I will add an operation. Slay a light metallick matter by the sharp Spirits of sulphureous Salts, that it may become a white calx; free this from the Salt Spirits, by water being poured thereon, the which being freed, cannot be reduced into a metallick body by any violence of fire. Likewise slay mercurial metals as are B. by mercurial, Salts their enemies, and change them into white calx's, the which being freed from their saltness WILL BE LIQUID OR FLOWABLE; mix those calx's, to wit, the mercurial and sulphurious being slain, put them into a double vessel of cement, cover the uppermost with a certain plenty of B. fence well the juncture of the cementing vessel with clay, set them into a cementing furnace, and at the beginning administer a gentle fire, that the calx's may rise up against or assault each other,

and the fixed sulphur may bind the fugitive flowable and mercurial caix's, D. for although in the cement something would depart into smoke, yet that is intercepted by E. and after a certain manner is thus exalted into the degree of F. Too much fire is not presently to be joined to the cement or plaistering it self, that some time may be granted to the matter that is swift of flight, whereby it may adjoin it self unto the fixed matter, and may also become fixed and constant with the same for four hours space, therefore the fire shall be somewhat the more slack, and afterwards for the space of eight or ten hours, it shall be kept in a clear bright, burning heat, that G. may not melt; the said time being ended, the fire is to be extinguished, and the cementing vessel to be taken away, in G. a black or brittle body shall be found containing Silver, the easy separation whereof we shall afterwards hear.

The calx of both metals being coagulated into a hard stone, if by grinding it be reduced into powder, and be put into a furnace fit for this thing, a metallick body will be attained, being impregnated, not with a little Gold and Silver, especially if the metals shall be slain, not by the Spirits of common Salts, but with gradatory martial waters. In this cement, H. is rendred aureal or golden, and I. is silvery, by one and the same endeavour. The profit also it self is of no small moment, especially if this operation be exercised with the greater quantity, and the bigger instruments always to supply or afford Silver being pregnant with Gold for separation.

XXXI. A brief and compendious manner of extracting and rendering corporeal, a volatile Gold out of coloured Flints, Red Talck, Granates or Red Marble Stone, Sand, White Clay and the like metallick earths.

At the beginning, these mineral or metallick earths are to be made bright burning hot, to be quenched in cold water, and to be broken in a mill, into meal or powder.

After that they are thus broken, thou shalt put them into some Waldenburge, or Cullein Can, and shalt pour so much of AQUA REGIA on them, that they may only be moistened, and let them, together with the Can, be placed in a fire of coals, and encompassed therewith, to be made hot; after that the minerals and AQUA REGIS have waxed well hot together, so much hot water is to be poured on those very minerals as shall be necessary for the extracting of the AQUA REGIA.

Put the minerals thus moistened with the water into great pots, and those made of the best earth, having many little holes in the bottom, on which lay paper for sustaining of the minerals that they may not fall out through the holes, but may dismiss the water only. After the first water is gone forth, other hot water is again to be poured on, and this effusion of water is so long to be continued, until it depart with the very same sweetness as when it was poured on, and no longer offers any sharpness to the taste. So the common and hot water brings away with it the AQUA REGIS, and the AQUA REGIS Gold out of the minerals.

The earthen pots may be placed in a bench bored through with holes, through which their bottoms may pass, that so the water may be received in vessels set under them.

N. B. The minerals may also be put into Barrels or hogsheads having a double bottom, such as are used for the cleansing of Saltpeter, that so water may be so long poured on them, until all the acrimony be extracted by the water.

XXXII. After what manner out of Minerals being extracted, a true Salt-Peter may as yet be gotten with profit.

The minerals being after the said manner freed by extraction, they are to be co-mixed with an equal weight of CALX-VIVE and wood ashes, and cast together into an heap under some open gallery or room, that now and then it may be moistened with Urine, or in want of that with Rain-water, as oft as they shall be dried.

In this operation the AQUA REGIS, which remained in the minerals, and was not wholly extracted by the hot water by the help of the Urine or Rain-water, changeth the Salt in the CALX-VIVE into the best Salt-peter, the which may be washed off with Rain-water, and boiled up after the wonted manner.

Therefore after the said minerals have been handled for half or a whole year after the said manner, and are by rinceing deprived of the Salt it self; they may again be (under an open Gallery or Roof so exposed to the air, that Rain come not at it) collected into an heap and be handled after the former manner, for the supplying (in thier own time) new Salt-peter, the which may be done for many years together. So also from that AQUA REGIS which could not be drawn forth from the minerals, a profit is received.

The cause of this Salt-peter, its being made, is this, because the

AQUA FORTIS or AQUA REGIS, or Spirit of NITRE in the same waters, contains as it were the seed of Salt-peter, it obtains that nature, that like an Herb it may take an increase from other Salts, and be multiplied; whence perhaps the old proverb arose, to sow Salt, which thing the ignorant have received with mock, saying after what sort can Salt be sown and multiplied, when it is solved and drawn from Rain-water? But it hath lain hid from those, what kind of Salt it is, and after what manner it is to be sown; the which we have here demonstrated, also the saying of the Ancient Philosophers, asserting that Salt may be sown and multiplied like Vegetables.

As to what pertains to those sharp waters, whereby gold is extracted out of minerals, by what skill they are to be handled as also without loss, yea that they may render that gold with profit; the following operations are to be observed.

XXXIII. A way shewing the extraction of a volatile and fixed Gold out of the Water, from which the Minerals are withdrawn, and the profit which may be received by that Water.

The best way is this, into the solution of gold, or into the water which containeth gold, pour in the solution of LUNE or SATURN more or less, even as you suspect more or less of gold to be in that water: As for example. Let there be in the water two or three half ounces of gold, dissolve thou therefore about two or three half ounces of silver, or lead, in AQUA FORTIS, and pour this solution into the water containing the gold, be it more or less, mix them well together by shaking or stirring, that the water may obtain the form of milk; after they have settled in quietness, shake or stir them again, and repeat this motion for divers times the space of one hour, and at length suffer all quietly to settle to the bottom. Separate all the clear water from the sediment by pouring it out, and strain the sediment it self through a filtre, that the water may be wholly separated from the silver.

This silver is to be dried, and reduced into its former body, after the manner which shall by and by follow.

N. B. If the Silver or lead had not extracted all the gold, the which may easily happen, yet that gold is not lost, for because sweet water whereby the AQUA REGIS is weakened is present, the which now remains unfit for another use of extracting out of minerals; now by the solution of LUNE or Saturn deprived of their gold, a sharp LIXIVIUM made of wood-

ashes, and CALX-VIVE may be poured on the same, with which a little ... is to be added or admixed. For ... do precipitate or fix all gold in solutions.

NOTE: (these black spaces are to be found in various places in Glaubers writings, as it were hidden. D.H.)

After this manner the AQUA REGIS is killed, and every metal which it has yet retaineth, it dismisseth like a yellow powder, whether it be gold alone, or mixed with copper or iron, which powder is to be dried, and reduced after the manner which shall strait-way be taught.

N. B. That the water after the total precipitating of the metals, being exhaled in a Copper Kettle unto a thin skin, and exposed in peculiar vessels unto the cold, it will afford thee a beautifull Salt-peter, concreted or grown together into drops or Ice-acles, whereof thou mayst again make an AQUA FORTIS, to be again made use of for the like operations.

He that shall rightly operate shall get so much Salt-Peter as will recompence the charges of the AQUA FORTIS, and AQUA REGIS: So that he shall extract his gold without costs. For five or six pounds of AQUA FORTIS, wherein two or three pounds of Salt is dissolved, and the which hath at length been precipitated by a sharp LIXIVIUM prepared with CALX-VIVE, doth render ten pound of Salt Peter, the which doth answer the price of five pound of AQUA FORTIS, and this is the manner of extracting gold out of minerals without costs.

XXXIV. Another and better manner of extracting gold by AQUA REGIS.

Take of ... by torrifying made into ashes, pour the extraction into an iron Pot, and stir the Calx with an iron SPATULA while it boileth. All the sharp spirits do stick fast to the ... the phlegm alone vanisheth by exhalation. When therefore the spirits wholly con-centred with the ... and ... are dried, they are to be put into a close Tigil or Crucible upon Coals in a secret Crucible or melting Pot, then the fire expels the con-centred spirits into a receiving vessel; the which spirits may be used for a new extraction. A fugacious gold mixt with iron, remaineth with the ... which Calx being reduced in a Furnace fit for those operations, which the GERMANS do call STICHOFEN, draws out a lead mixt with gold, the which being expelled by a Cupel enricheth the operators with the best gold and Silver.

N. B. But if such lead should not contain so much of gold and silver, as

that it should deserve a separation by a Cupel, that is again to be mixt with ... and to be reduced into ashes, and the operation is so long to be repeated, until the lead being rich enough in gold, may deserve that separation.

The separation is also to be perfected with the Bellows, lest so great a plenty of lead should be melted out of the Tests, which operation requires much fire, yet the lead may be collected or conjoined in the Test without a wastefull melting, as shall be taught hereafter.

XXV. An easie making or composing of AQUA REGIS for extracting of minerals.

Because a plenteous quantity of spirit of Salt is easily prepared, the Salt-peter is only to be dissolved therein, and with that solution minerals are to be extracted. For the Salt Peter strengthens the spirit of Salt, that it can so much the more easier set upon and snatch to it the tender gold in those minerals.

The same spirit of Salt, may also without any rectifying be administred for this operation, to wit, such as ascends in the first Distillation.

XXXVI. Another as yet more easier way of preparing AQUA REGIS for extraction.

Because silver doth always in this operation bewray its being impregnated with gold, which is to be separated by AQUA FORTIS, the solution of silver is also fitly used to extract after this manner.

Pour the said solution into AQUA REGIS which hath extracted gold, that the silver may attract the greatest part thereof to it self. But the same AQUA REGIS may again extract other gold, and be attracted by the solution of silver.

But if there should be no solution of silver in readiness, the gold extracted is con-centred with ... and the operation is perfected by the means or after the manner abovesaid, by driving the spirit out of the ... and by reducing it in a Furnace, called by the GERMANS STICHOFEN, as was said before.

N.B. AQUA FORTIS being dissolved therein, or poured on or into AQUA REGIS, or the nitrous spirit of Salt, it adds an increase and strength to the AQUA REGIS, because AQUA FORTIS doth corroborate the spirit of

Salt better than Salt-Peter.

XXXVII. How the Calx of silver, which hath fished out gold by AQUA REGIS, is to be recovered.

When the solution of silver is poured into AQUA REGIS, and the chiefest part of the gold is extracted; rest is so long granted unto it, that the Calx of the silver may settle to the bottom, and afterwards the AQUA REGIS by pouring it forth is separated, cleared from the Calx of the silver, again to be used for a new extraction; unless perhaps as much of iron had been admixed with it, in which case ... the white Calx of the silver is put into some Cloath laid in an earthen or glass Tonnel, and hot water is to be poured on it, to take away with it the AQUA REGIS, which is left in the Calx of the silver. The remaining water is to be pressed out of the Towel or Cloath, and the Calx dried, and reduced in the secret Crucible, or is made use of in the con-centring of into silver or gold, viz. gold and silver

XXXVIII. After what manner precipitated silver is to be reduced without a loss of its weight.

Seeing the greatest fugacity is procured unto this Calx of silver, so that its former body cannot be restored unto it in common Crucibles without great loss, this discommodity cannot after a more convenient manner be prevented than by that which follows.

Mix thou an equal weight of ... with this volatile Calx, and cast it into a close bright burning Crucible, that is narrow above, and broad beneath; the which after thou hast covered with a Cover, and well fenced with the lute of Wisdom, thou shall melt the matter together, nothing whereof shall depart into smoke, neither shall so much as the least of it pierce through the Crucible, and all the silver which the gold received is by this means attained without any loss.

This silver thou shalt by fusion reduce into grains, and shalt separate the gold from the same in AQUA FORTIS. And thou shalt again apply the silver thus reduced unto a new labour, in which labour thou proceeding without intermission shalt have a continual separatory operation of gold and silver; and this labour thou mayest exercise with great profit in all places.

XXXIX. Another manner of reducing a fugacious or volatile silver, with greater profit.

Place thou at the Stern of this little golden Ship, a little fish whose name is REMORA, that it may be spoiled of its swiftness and may be at a stand, cast this silver little Ship with the little fish REMORA, fitting at its Stern, into a close and square Tigil or Crucible, that by fusion they depart into one body. In this fusion not only all the silver is returned without any loss into its former body, but also is by the white FINNS of the little fish, augmented with a certain increase of its weight, and becomes more golden; so that by this additament more of better silver is gotten, than if by the addition of other things it had been restored to its former body.

What other profits any one may be able to obtain through the help of this volatile silver, we will God willing hereafter teach.

These are the things which I at this time have been willing to teach, concerning the extraction of a volatile gold out of stones, and the more poor minerals, as also of the extending or bringing forward silver by successive degrees into gold; of which matter more things shall be spoken in other places.

XL. An operation, teaching to extract Stones and Minerals, or Mines that are poor in Silver, and Copper by a moist way.

These matters being made bright burning hot, are to be quenched with water, then moistened and extracted with AQUA FORTIS; after the same manner as was taught above concerning the minerals of gold, and no difference is here met with but in the waters extracting, since gold is extracted with AQUA REGIS, and silver with AQUA FORTIS.

If the mirieral or mines of gold and silver are at once in readiness, the gold is extracted by AQUA REGIS, and the silver by AQUA FORTIS, and the solutions are to be united, in which dissolving, the silver being precipitated by the AQUA REGIS, doth also snatch with it the gold from the AQUA REGIS; and although copper shall be present with the mine of silver, and it be extracted together with the silver by AQUA FORTIS, yet it is no impediment to the operation, for the silver and gold do sink to the bottom, and the copper is retained by the AQUA REGIS to be afterwards administred for a new operation, and that indeed as often as any one shall be willing.

The copper is recovered from the AQUA REGIS by thin plates of iron being put therein, which operation makes the AQUA REGIS red, and wholly unfit for the like labours.

Therefore the iron being then spiritual, promotes something out of the lead unto the degree of gold, and so the AQUA REGIS being thus often used, it is again rendred profitable.

XLI. A more easy manner as yet by far, of plentifully extracting Gold and Silver out of poor mines, as Sand, White-Clay, and other the like minerals, by fire without fusion.

The mine or mineral ARGILLA, or white-clay, & etc. containing a volatile and fixed gold, being roasted or calcined, and broken in pieces in a mill, fill thou a glass gourd therewith fenced with clay, or made of the best earth, half full, and pour so much of the following MENSTRUUM on that matter, as that it may be well moistened; but as soon as that MENSTRUUM is poured thereon, it presently begins to give a smoak, wherefore it is altogether necessary, that thou presently put a head on the gourd or body, which is to be set in sand, and all the moisture separated by distilling, and that while the distillation is performing the gold may be dissolved, but the solving matter it self is to be collected in a receiver by it self, the which hath the virtues of AQUA REGIS, and may be again applyed for use, as shall by and by be shewn.

After that all the humidity is come forth, take the gourd (being cold) out of the sand, and pour some water on the matter that it may become soft, and that a Salt may be extracted from it, wherein the Gold lurketh, which was contained in the mine; coagulate the Lixivium being full of Gold, into a Red Salt, the which by adding Litharge, is to be melted in such Crucibles which are not broken.

The Litharge draws the Gold unto it out of the Salt, which is to be separated from the Lead, after that manner which shall be shewn in the following Chapters or Treatises.

XLII. The preparation of a Water necessary for the extracting of Gold.

Take of ... this water of small charges, which thou shalt prepare plentifully without trouble, pour upon mines, and again separate it by distillation, to be again used in new labours, that there may be no need

to prepare it again anew, because this doth not only always remain effectual, but also is increased in every operation: So that thou mayest be able to extract mines and minerals AD INFINITUM, if so be thou shalt prepare but one pound or pint at the first.

N. B. By this means all Gold how little soever it be, is plentifully extracted out of flints, sand, and any other minerals, without any cost excepting fire.

XLIII. Another water for extracting silver.

Take ... this water extracteth silver out of the poor mines of silver, sand, and stones; the operation of the same, is like the former one, and its increase is like the increase of the former water, so that after this manner silver may be plentifully extracted out of poor minerals, and no other cost is required besides fire.

N.B. Instead of ... may ... be taken since it performs the same thing in extracting, which the other performeth.

XLIV. Another easie manner of plentifully extracting gold and silver out of poor minerals, as being of little or no cost.

Mix thou the mine or minerals with the requisite waters, fill with the same ... of good earth, set them near each other in a great ... put it in ... and distill the spirits, which pay all the charges, and which supply gold and silver without any costs, the which is to be received by lead.

XLV. Another more easie manner of extracting gold and silver out of minerals.

Mix the mine or mineral with the requisite waters, and moisten it by degrees, cast the whole into ... the spirits depart into a receiving vessel, and in the time of distillation, the gold and silver are dissolved by that dissolvant, the which being extracted, remain with or among ... and are rinsed by water out of the mineral, so that they are attained without costs, and the spirits being collected in the receiving vessel, do recompence all charges.

XLVI. An easie operation of plentifully extracting gold and silver, out of far white Clay or Potters-earth.

Although gold and silver be extracted out of minerals by moist waters, by a troublesome operation as we have taught in the beginning, yet such an extraction brings no small profit, because they may be freed from those waters by precipitation; and those very waters do readily serve for the making or preparing of Salt Peter. With a fat Argilla or white Clay, the matter goes otherwise, because the spirit hath crept into the far earth, and scarce a half part is received, unless the earth be first deprived of its fatness by making burning bright, it being that which doth also require its own peculiar labour.

Seeing that therefore in all places of the world, wheresoever earth is found, such fat white Clays containing gold and silver do plentifully offer themselves, and none hath been hitherto found, who hath indeavoured to extract and bring them to use, especially whenas they contain but little of gold or silver, not able to defray the charges of the lead bestowed.

I could not but open a very easie way of performing that thing with no small profit, the which is perfected by the following labour.

Mix such an earth containing gold or silver, with ... or of that greater one, and cast it by degrees into my first or second Distillatory Furnaces, and draw forth the spirits by distilling, that the solved gold or silver may remain in ... From that which is broken by a Mill or grinding ... is washed off with hot water, and is reduced by lead as is shewed before.

XLVII. After what manner by the help of art, gold may be easily and plenteously extracted from the sand of GRANATES, AGATHS, SAPHYRS, AND RUBIES, and other stony Mineral earths, which do neither admit of fusion, nor Lead, nor sharp Waters.

It is certain that all GRANATES or Marbles, the red, black, ash-coloured, duskish, also of whatsoever colour they are, or wheresoever they are found, whether in Brooks or Rivers, or in Sand, or fat Earth, or in high Rocks, do always contain much of Gold, but that by reason of their glassy nature, they cannot be tamed by AQUA FORTIS, and by reason of their most difficult fusion cannot be wrought by Saturn or Lead; for that cause they have made none partaker of their gold, and they have been neglected as unprofitable earths, whenas notwithstanding they being handled by little labour, they are able to afford much gold.

Some one therefore may ask, because they cannot be subdued either by lead or AQUA FORTIS, what course must be taken, that gold may be extracted out of their bowels? I answer.

... and also by a fusible ... they may be so overcome, that the gold which they have may be withdrawn from them with profit, for ... because they can bear the fire, they are ... and perform by a double labour, one through their sharpness, and another by reason of a strong fire, so that nothing is safe from so great forces, but all things are constrained to yield unto so great violence. Hence they do willingly afterwards enter the Salt of Lead, and in time of melting do readily draw out their gold.

XLVIII. A most firm demonstration, that sharp Waters and Salts after the manner of the ways hitherto described, do draw forth Gold and Silver as it were without cost, out of Mines or Minerals containing Gold and Silver, than sumptuous or costly melting Fires.

It is not unknown to every one that is seasoned but even with a mean knowledge of gold-bearing Mines, that without the addition of Lead or other flowable things, Gold can in no wise be melted out of them, whenas therefore there is little Gold in those, and nevertheless much of Lead or other matters is required to be added for an easie fusion or melting sake, who shall be fit for the undergoing of so great costs? Hence it hath come to pass that such poor minerals could bring nothing of profit in common.

It being also granted, that there is so much of Gold and Silver in Minerals, that they will defray the charges of fire and fusion, and afford Gold and Silver with profit, yet such operations are not comparable to my inventions using Waters and Salts, no more than as Water to Wine, or Night to Day.

For first, fusion or melting far exceeds in its costs the extraction which is perfected by Salt and Waters. And then it can never be brought to pass that fusion should expell all the Gold and Silver out of Mines and Minerals, but leaves some thereof in the drosses, next also there is made a loss of all the volatile Gold and Silver, which are cast forth by a most strong fire, and driven away into the air; on the contrary, of the more ample and wealthy profits, which the extraction of Gold and Silver out of Minerals bringeth, this is not the least, that not onely all the Gold and Silver which is fixed, is drawn out without any detriment or loss, but also those two metals being as yet volatile

are extracted at once and made fixt and constant in the fire, whenas notwithstanding by the vehemence of a melting fire, they are wholly dispersed and reduced into nothing. For the Waters of Salts do fix the volatile fugative spirits of Gold and Silver, the which by the vehement blasts of bellows, are rendred as yet far more volatile, so that by the help of fusion scarce half the Gold is gotten which the extraction by the Waters of Salt affordeth.

Add to this, that not only all the Silver and Gold, as well the volatile as the fixt is gotten together without any loss, but also the charges of Coals are far less, and one operatour may perform as much of this extraction of Gold and Silver, as three in the labour of fusion or melting.

From hence it is easily to be seen, how much profit and fruit may be gained by this my most excellent invention in all places of GERMANY. For this extraction is not only for extracting Gold and Silver as well out of rich or poor Mines, but also snatcheth out all the Gold and Silver, in Flints tinged with any colour, wherewith all Brooks, Rivers, and Fields are filled.

Now follow some particular transmutations of the imperfect Metals into more perfect ones, by common fire, and Crude Salt, and by the not common concentred moist fire of Salt.

XLIX. A fundamental and evident demonstration, that a true transmutation, or trans-changing of Metals may be exercised in all places of the earth, wheresoever Men may dwell, yea in the least Cottages of Country folks, and indeed by the same matters and vessels which are found in them.

It is well known, that even the poorest and vilest or meanest Country can want neither fire, nor salt, nor earthen vessels, necessary for the boiling of Meats. Therefore being furnished with Salt, a piece of Copper of some old Kettle shall easily supply him, the which it shall be free for him, by fire and salt to transchange into a better and more noble body, but because Man hath a far better and commodious Salt for the transmutation of Metals in his possession, which excells common Salt in its goodness, he may of right and worthily make use of his own proper Salt before a strange and foreign one, and that after this manner.

Boil thy own, or the Urine of another man, to the consistancy of Honey, in which decoction, all the unprofitable moisture of the Urine

departs by exhalation, and the Salt thereof remains in the Kettle or earthen Pot; admix thou with this condensed Urine, so much of CALX-VIVE, or the ashes of burnt Woods, that it may come into a thick or gross lump. But thin plates of Copper cut in pieces, and purged by making them bright burning hot ought to be in readiness, and also an earthen Pot having its Cover, wherein let that mass of Urine, and CALX-VIVE, together with the thin plates of Copper be put; when thou hast all these things in a readiness, mix the Urine as abovesaid with the CALX or slack-lime or ashes, and fill thy Pot to the height of three or four fingers, upon which put some of the plates of Copper, and so STRATUM SUPER-STRATUM till the Pot is full, then cover it with its Cover, which thou shalt well fence with Lute made of Meal, Water, and Paper, that not any vapour at all may come forth. For as soon as the CALX-VIVE is mixed with the condensed or co-thickened Urine, the spirit of Urine begins to operate by its own proper efficacy, and therefore it is necessary that the Cover be straightway laid on the Pot, and be fenced with a due Lute or Clay; the Pot being thus filled and covered, set it aside in some certain place for the space of half a year, in which time the spirit of Urine being stirred up by the CALX-VIVE, displays its virtues on the Copper, and exalts it into a higher degree, as that it is tinged of a skie and green colour mixed, and is rendred fit for the Painters Art; one pound whereof is more worth than two or three pounds of Copper, one pound whereof doth for the most part render one pound with four or five ounces of this colour, and so it affords a profitable transmutation of Copper.

L. After what manner, out of this partly Green, partly Skie-colour of Copper, Gold and Silver is to be separated.

He that desires to separate Gold and Silver out of this colour, whereof no great masses are attained, but only and alone whereby it is demonstrated that the thing may be done, he must use the following operations.

First, he must take good heed in taking the colour out of the earthen Pot, lest any thing of the mass of the Urine, and CALX be mixed with the beautifull colour, and render it impure.

The thin plates being taken out, they are to be often crookedly bowed, and moved upwards and downwards, that the colour may fall off from the plates like scales. The remaining Copper which is not yet

turned into colour, is reserved for a new labour; to be repeated after the same manner. Wine-vinegar is poured on the colour, or the sharp water of Tartar extracted after the Distillation of adust Wine from its Lees, with water by decoction, and it is to be so long boiled in a Copper Kettle, or an earthen Pot glazed, till all the colour shall be solved; the solution being cast into a Filtre, the Vinegar or Water of Tartar only passeth through, and a reddish powder is left in the Filtre, the which being melted with Lead in a Cupel, after the exhalation of the Lead, it leaves a grain of Gold. For the spirit of Urine hath ripened somewhat of the Copper into Gold, which the Vinegar or Water of Tartar did not dissolve but left, attracting only the Copper by solution. And because somewhat of Silver is ripened in the Copper through this same operation, and is dissolved with the Copper, by the Vinegar or Water of Tartar, something of common Salt is to be added to the Water of Tartar or Vinegar, that the Silver may not be solved by the same, but may remain with the CALX of Gold, and may be retained with the same.

N. B. Pure and clear Vinegar ought to be taken for this labour, if you would preserve the colour unhurt, for after some part of the Vinegar is evaporated away, the green colour of the Copper grows together into fair green small stones, one pound whereof is more to be esteemed than five or six pounds of Verdigrease, which is sold in the Shops.

This artificial operation therefore affords a beautifull and christalline vitriol of VENUS, and some small quantity of Gold and Silver; whereof although there be not so great plenty that it may bring profit, yet it shews the possibility of the thing, and teacheth that a transmutation of Metals, may be exercised in any small Cottage by any Country Man.

But if any one shall collect Urine, and extract from thence the volatile spirit of its Salt by Distillation, he shall far more deeply pierce the heart of the Copper, and shall obtain more of Gold and Silver than he can get by the but now mentioned rustical labour, of which matter more things are found in other places of my Writings.

LI. After what sort pure Gold may be extracted out of any Copper.

In all Copper a spiritual occult Gold lies hid, the which in the labour of separation by Lead in a Cupel or Test, is not taken notice of, or considered. But this very Gold is nothing else but the colour of Copper, so firmly adhering unto its body, that it remaineth very

difficult to be separated from thence, but the operation being rightly instituted, although it be not gainfull, yet it demonstrates a possibility of the thing, for the sake of experiencing whereof, to wit, whether there be Gold in all Copper, thou must labour after the following manner.

Dissolve Copper in AQUA REGIS, and pour much water on the solution, that by this water the dissolved Copper may be largely diffused into this solution diffused by the water, pour Lead that is dissolved in AQUA FORTIS, so that one or two half ounces of Lead may answer to one pound of Copper. But as often as the Lead shall settle to the bottom, thou shalt shake or stir it, that the solution may be well mixed, and that the Lead may attract something of Gold; and may precipitate it with it self to the bottom, the which being dried and separated in a Cupel, will leave a small quantity of Gold, not an argument of profit, but a token of a possibility, which testifies that there is Gold in all Copper. But if any thing of profit were to be received, such Copper was to be taken which was already changed into vitriol. But among vitriols the HUNGARIAN, CYPRIAN, INDIAN, JAPANICK, and other the like do excell, which do offer themselves in the Mines of Gold-bearing Copper, and are handled after the following manner.

III. The manner of extracting Gold out of natural vitriol.

Dissolve thou vitriol in common water, and pour on the vitriol dissolved, a little of dissolved Lead, and stir both solutions by frequent motions, that the Lead may attract the Gold out of the vitriol, to be dried and separated by a Cupel, which will remain like a grain of greater or lesser quantity, as the vitriol shall contain more or less of the same.

Of the vitriolated water out of which the Gold was extracted, thou shalt again make vitriol by so long boiling, and evaporating till a thin skin appear, which being then exposed to the cold will shoot into Crystals. But this operation brings with it more profit, if it be not now boiled up into Crystals, but that vitriol only be taken which is drawn out of its Mineral into Water, and after the extraction of the Gold, is at length boiled up into vitriol.

But least this fishing of Gold out of vitriol should seem wonderfull unto any, we will shew a way, whereby Gold may be extracted out of Sea Water, or Sea Salt, the solution of Lead assisting: The

manner is as followeth.

LIII. After what manner Gold is to be extracted out of Sea Salt, or Sea Water, not indeed with profit, but only that it may be demonstrated, that Gold is hidden even in Sea Water or Sea Salt.

Fill a great Copper Kettle with Sea Water, and pour therein a little dissolved Lead; the which goes to the bottom because it cannot indure Salt, and is straightway precipitated into a white powder, move and stir the water in the Kettle often, that the solution of Lead may every where touch the Sea-Salt-Water.

Through this action, a spiritual Gold adheres to the leaden powder, and sinks to the bottom together with it, which powder being freed from its Salt by common Water, and dried, and melted in a Cupel, leaves a small grain of Gold, as a remainder.

N. B. For this fishing Silver is more fit than Lead.

LIV. How, out of poor Mines of Copper, from which no profit can be perceived, Copper, as also Gold it self if it be present, is to be easily and without costs, extracted and separated.

The sandy or sulphureous Mine or Mineral of Copper is to be roasted or calcined, by burning even to the consuming of the Sulphur, because sharp waters do not assault sulphureous matters, the Mineral being calcined and beaten into a powder, full a gourd, and pour our solving secret on the same, the which I have taught above at the extracting of Minerals.

The whole dissolvent in abstracting or distilling is recovered, and that indeed not without increase. But the Copper, and Silver do stick fast in the dissolved Salt, which remained in the Mineral after the abstraction, and the which is to be washed out with water, out of which water, which drew out that Salt, the Gold contained therein, may by the solution of Lead or Silver, be drawn forth.

But if the same water be boiled until a thin skin appear at the top, and exposed to the cold, it will shoot into a green vitriol, but for the extracting the Copper out of the Salt-Water, Rods of Iron are to be put therein, which do attract the Copper, the which being withdrawn and washed clean, and melted into Copper by fusion, is administred for other uses: For because it is like to a tender and filed powder, it is

changed by an easie business into Verdigrease, after the manner which shall by and by be taught.

LV. After what manner Gold may be by an easie business by Fire and Salt, be separated out of Copper.

If Gold shall be mixed with a mass or lump of Copper, all the Copper is to be reduced in a bright burning Fire into Ashes; and the Ashes are to be infused in our secret ACEUM or Vinegar, the which dissolveth the Copper only by decoction, and leaveth the Gold undissolved, like a shining powder, to be dried and melted with Borace, out of which Gold of twenty three Carats proceedeth.

That Vinegar, our secret ACEUM, draws all the Copper from the golden CALX. The Copper is separated from the Vinegar by Rods of Iron, being laid therein as we have taught in the foregoing manner.

LVI. How Copper being extracted out of vitriolated Water, and adhering to Rods of Iron, is to be changed into Verdi-grease.

This pure Copper may be moistened with the strongest Vinegar, and put into earthen Pots, the which being covered with its Cover well fenced with Clay, are to be placed in Horse dung, and to be left therein for a time, yet so as that the heap of Dung be sometimes renewed. All the Copper is in a short time changed into Verdi-grease, and indeed far more pure than that which is set forth to Salt in the Shops, and which is made in SPAIN, by the husks or pressed out of clusters of Grapes.

N. B. In extracting Copper out of Mines, regard is to be had unto this thing, to wit, that with poor and wild or course veins of Copper, LAPIS CALAMINARIS, or ZINK is sometimes found to be admixed; which is no ways perceived to be in them. But if those Minerals are extracted with AQUA REGIS, and this be to be taken away by Distillation, none of the AQUA REGIS goes forth, but only a flegm without savour, because the LAPIS CALAMINARIS or ZINK doth retain all the Acrimony with it, just as if those two Minerals should say to the AQUA REGIS, we do not as yet let thee go, because as yet, we have need of thy indeavour for our amendment; & etc.

But it is certain that whatsoever Minerals and Metals do retain with them sharp spirits, are as yet immature, and may be ripened by those spirits, that they may bestow Gold and Silver, as hath been

already said, and shall as yet more largely be spoken to.

LVIII. Out of wild or course Minerals, or veins of Lead, admitting of no melting, out of which no good Lead, much less Gold or Silver, can be drawn, how to extract not only Lead, but also Gold and Silver with profit.

As we have said above, that some Minerals or Veins of Copper do appear in Mines, the which by reason of LAPIS CALAMINARIS or ZINK, do refuse all melting, and can be by no fire reduced: So also we here admonish, that Minerals of Lead are found, the which do indeed contain much Lead, but by reason of the LAPIS CALAMINARIS, ZINK, and a sulphureous Sand being admixed with them, they cannot be overcome by any melting, for these matters do take away a ready flowing from the Lead, and do cause that such Minerals, which for the most part together with Lead, do also hide not a little of Gold and Silver, are cast away as altogether unfit, and unprofitable, whenas notwithstanding very much profit might be received from them after this manner.

Let the Mineral by pounding be broken in small pieces, and in my little secret Furnace which I have fitted for the calciſing of Minerals, let it be roasted with bright burning Coals, that the gross Sulphur may conceive a flame, and burn. If in time of operation the matter should gather it self into heaps or knobs, and in co-heaping should make round Pellets, it being taken out of the Furnace, let it again be beaten, be set upon live Coals and roasted, and these labours be so often repeated, until all the Sulphur shall be consumed, and the Mineral doth no longer co-heap it self into knobs, but being made bright burning hot like dead ashes; it no longer sends forth a sulphureous stink. At length out of these ashes being well washed, a dead and unprofitable matter separates its self from the good and metallick earth, the which being melted by it self in a Furnace called by the GERMANS STICHOFEN, becomes a flowable Lead which containeth Gold and Silver.

But if the Mineral be so stubborn that it altogether refusing all melting, could not by it self be reduced, and nevertheless contain Gold and Silver, something of Litharge is to be added to that metallick earth, which procures a flux unto it, and yields that Gold and Silver bearing Lead, which by the common operation wholly refuseth to offer it self.

LVIII. Another way teaching by the help of Salt and Fire to draw Silver and Gold with great profit, out of all stubborn or rude and untamed metallick earths, in whose Veins Lead, Copper, Gravel, or course Sands, Iron, or LAPIS CALAMINARIS have for the most part conjoined in Society, and which do deny all profit by vulgar operations.

As Fire burns up every gross and combustibile Sulphur in Mines or Minerals, that these do at length subject themselves unto melting, and do render Metals easie to be hammered; so also Salt fixeth, and makes constant whatsoever volatile body endeavours to flie away into the air, that it may afford a ripened, melted, and profitable Metal. For that cause such Minerals common Salt being added as was above-said, are to be roasted in live Coals, that that devouring gross Sulphur may vanish by burning with a flame, and that together also the Metal it self may be promoted to maturity, and so that by this very thing, good Gold and Silver may be separated, whenas notwithstanding otherwise, not any one should obtain so much as the least thereof out of these very Minerals.

Such an amendment and changing the more imperfect Metals into the more perfect ones, may be attained by the help of Salt and Fire.

If therefore common Salt, and gross Fire are able to perform this in Minerals, what shall not these not common but secret Fires of Salts effect, in trans-changing Metals already pure, into more pure and subtile ones?

LIX. After what manner Metals are to be amended by pure Fire, or the fiery spirits of Salts.

It may easily be perceived if a gross Salt and Fire do some good to more gross Metals, that also a more pure Fire and Salt may do more good on purer Metals. Instruments whose edges are made very sharp by whetting, are far more fit for operation than those that are dull, and will perform more. By how much the sharper an Auger or Wimble is, by so much the sooner it boareth through the Wood, and on the contrary, by how much the more blunt it is, by so much the slower it pierceth through.

He that is earnestly desirous to obtain any good in the amendment of Metals, he must of necessity apply the subtile and strong spirits of Salts, that he may destroy Metals with the same, may kill them, and reduce them into their former life, and so may procure more noble bodies unto them. When their former body is restored to those moist and cold

Fires of Salts, to wit, that they may return unto the form of Salt, but of a more noble and subtile one, Metals may far more speedily be destroyed; a double Fire performs more than a single one, since therefore Salt is by it self no other thing but a meer and con-centrated Fire, and the Fire of Wood or Coals joining it self with the other a greater efficacy must needs be expected from them than by common Fire alone, but we have hitherto made mention of such operations, and therefore its needless here to repeat them. From what hath been hitherto said, every Chymist may gather and learn those things which concern the amendment of Metals, wanting the help of Salt and Fire; more God willing shall follow.

LX. Let us now ascend higher, and demonstrate what incredible miracles or wonders our secret Fires of Salts may effect nigh to that great work of Philosophers.

As in the foregoing Chapters it hath been sufficiently confirmed, that unripe Metals may by the help of Fire and Salt, be particularly promoted to a more perfect maturity: So also in the multiplying of Animals and Vegetables, that thing evidently appeareth; to wit, if sufficient meat and drink be administered to any Infant, that he groweth dayly in bigness, and strength of body, until he come to the age and perfection of a Man. The same multiplying in Vegetables offers it self to our view, in that a small seed or root do snatch to them their nourishment from an earthly Salt; and the beams of the Sun, and do rise up into a perfect, great, and fruitfull Tree. This particular transmutation is conversant before our eyes, and therefore is a thing most known, but after what sort the most noble part or purest essence is to be extracted out of the bodies of Vegetables, Minerals, and Animals, that other more weak bodies may be strengthened and amended by the same Philosophers have always hidden and covered with the greatest endeavour. Hence it is, that there hath been very few, and as yet are, who have had the knowledge of this highest Science.

As to what therefore belongs to the great work of the Philosophers, all the Philosophers do in their writings with one accord affirm, the which I do also in all my writings affirm to be most true, and do as it were show with my Fingers, to wit, that nothing in the nature of things doth effect a Tincture and Tinge with a most gratefull colour, but Sulphur alone, and that one only, and that this same combustile immature

and volatile Sulphur is fixed and changed by the operation and help of Salts into a true Tincture, the which is as certain as that which is most certain, and yet labourous also, and requiring a space of time long enough, especially if any one doth insist in a moist way. The way of coming unto the end of such a work as I think, yet with the safety of others judgement, this is the best, if any one bind or fix such a Sulphur, which was already brought unto a perfect maturity by nature, they might bring this profit with it, that it should not require a longer time for its maturity.

But such a fixed, and tinged Sulphur, is no where more nearly found than in Metals, and especially in Copper and Iron, but the better and more pure in Gold; the finding out whereof notwithstanding (by reason of its most firm and intimate conjunction with its body, as also its separation) hath been always esteemed almost impossible. For unto diligent searchers, a true separator which might separate the pure part from the impure, hath for the most part every where been wanting.

For as it is known such a hard or compacted metallick body, can very difficultly be separated and divided into its parts.

The solution of sharp waters, sups up indeed every Metal, but it effects no separation. For because Metals are Homogeneal things, and the metallick Sulphur is so strictly bound to its metallick Mercury, by the bond of the metallick Salt, it can never be brought to pass, that by such solutions, or by precipitatings, or by other ways, one part should be separated from the other.

If a Metal being dissolved by a water be precipitated all its parts being so mixed as they were before its dissolution do fall down and settle, and admit of no separation. But if any one would also render Metals spiritual, that so the more pure parts might be disjoined from the more impure ones by distillation, yet there is no separation made, but the more pure body it self ascends, and again as before, it consisteth of three principles, performing indeed more in Alchemy and in Medicine than the more gross bodies of Metals, but is unfit for a true Tincture, because nothing operates in all bodies, but a lively Soul, and that which vivifies or quickens other dead bodies, for it is the spirit, as Christ saith, which quickeneth, the body is unprofitable. Let man, or any other living creature be for an example, the which as long as it lives, it moves it self and operates as long as the spirit, the Authour of Life is present with it; but that vanishing away the body wants all motion, and remains a dead Carcass. If now it could be brought to pass,

that we could lay hold of such Animal Spirits, and could render them corporal ones, we might also perform incredible things by the same, and perhaps fashion or form a living creature of a lump of earth, the which notwithstanding God hath reserved to his own self. But this that bountifull Father hath granted unto us, that out of unmoveable subjects, or those wanting a moveable and animal life, we may extract their pure Souls or Essences, and render them corporal, and effect thereby things of great moment in Medicine and Alchemy.

But the souls of Metals do excell herein, as being more fixed and constant than the essences of vegetables, but they are far more difficultly attained. For the souls of vegetables do suffer themselves to be easily extracted, but the colours and souls of Metals do hardly admit of extraction, and for that cause are accounted of by the ignorant for a thing impossible to be done, nor indeed is it altogether, without some cause; for the separation of the tinging soul from the hard metallick body is a thing of great moment; many are the ways that have been attempted for the procuring of this Sulphur; and some ignorant fellows have written Books, of the acquiring or getting of the same, whereas 'tis evident that they never saw such a Sulphur.

The most learned and most witty HELMONT wrote egregiously concerning this Sulphur; but yet not so clearly as that any one could out of those his writings get a perfect knowledge of the same. Nor indeed is it expedient that such kind of Pearls should be cast under the feet of swinish Men. There is no Writer (as far as I know) that hath mentioned any thing concerning this matter, clearer than ISAAC HOLLAND in his CH. DE AMANSIS, where he teacheth, that he who hath gotten the art of changing Metals into transparent Glasses with their peculiar colours, hath purchased a notable secret in Metallick affairs. He alludes (by way of likeness) to the bodies of Men brought to a clarity or brightness after this life, and thus declares his Doctrine and says; The souls of Metals do shine forth through their AMAUSA'S, or clarified bodies, clad in their proper colours, even as the Souls of Men shall hereafter shine in the other World, from (or through) their clarified bodies. And further he saith, that when such AMAUSA'S (or Glasses) are reduced into their former bodies; then the AMAUSA'S OF COPPER & IRON become fixt, that of Silver becomes Gold, and that of Gold becomes Tincture. The said Authour hath not clearly expressed the manner of accomplishing this, but in my opinion (without prescribing ought to any one) this is the nearest way of attaining to such an operation, viz. of

getting the souls, or the pure Sulphurs of Metals, viz. If the metals be first reduced into AMAUSA'S or transparent Glasses, out of which their souls are easier extractable than out of their gross bodies. But now, for such an extraction here is such a MENSTRUUM required as doth not work upon all the whole body, or dissolve it, but doth only attract there out of the colour and purest Sulphur, and leaves the body behind white. But where shall we find the description of such a MENSTRUUM? None speak of it openly, but many mention it obscurely; nor indeed is it so necessary that such an ARCANUM of so great moment be manifested to every one.

But however, this in brief you are to be admonished of, that like draws its like and extracts it. If a mercuriality be to be extracted out of the metallick masses (or bodies) then 'tis expedient to use a mercurial MENSTRUUM, for like rejoiceth in its like. So sulphureous essences are extractable by sulphurous MENSTRUUMS, and not by mercurial ones. For Water doth willingly associate it self with Water, and Oil with Oils. And forasmuch as all the Philosophers write that the Sulphur or tinging Soul in Iron and Copper, doth as to goodness and nobleness equalize the Sulphur in Gold, it will be needless (in my opinion) to take Gold, but to bring Iron and Copper to that pass, that they may become transparent Glasses, from which their colours may be extracted. But if so be that any one is minded to prefer Gold before these, and to extract the tincture hence from, he may do as he please, and will find in many places of my writings a manuduction, (directing him) to the transmutation of Gold, (and so of the other Metals too) into transparent bodies, which thing is highly necessary. For there is not an easier way of extracting the tincture out of Metals, than by first reducing them into transparent AMAUSA'S. Now the MENSTRUUM serving for this extracting of the Sulphurs out of the metallick bodies is to be so prepared, that it dissolve not the body, but extract only the Sulphur or pure Soul thereout of. Such MENSTRUUMS PARACELSUS himself makes mention of, and affirms, that with them the skie coloured Saphyrs, the red Rubies, and the yellow Jacyrith may be so deprived of their colours, as that there remains no more Of them save only the white bodies. Besides, that white Crystals may (by the help of tinging sulphureous spirits) be died with various colours. Verily 'tis a secret of most mighty concernment, to have the skill how to prepare such a MENSTRUUM as will penetrate the most hard Stones and most compact Glasses to extract them, and withall to communicate to othersome various colours, without the corrupting,

breaking and destruction of any of the bodies, the which thing seems in my opinion very likely to be true, though as yet I know not how to do it. That which I have tryed by my operations I can write and teach, viz. how all the Metals may very easily (yet one more easily than another) be changed into fair transparent and most delicately coloured glasses, and how out of these glasses the pure and tinging metallick souls may be extracted, viz. by such MENSTRUUMS as are sulphureous, subtile, not dissolving, but only extracting.

But forasmuch as these kinds of MENSTRUUMS are not (as far as I know) described by any one, and yet are the producers of such notable effects; I could not omit the discovering of something concerning them, for the sake of such as are Students in true Philosophy, and after some sort shew that kind of extraction, which is to be accomplished by the help of our con-centrated spirits of salt, or of our moist Philosophical fires.

LXI. How a vegetable subtile sulphur is to be so actuated by the nitrous moist fire, that it may extract the fixt sulphur of metals, or their pure tinging soul.

First of all, the oils of the vegetables are to be exalted 'by distillations, and often repeated rectifications to the highest degree of purity and subtilty, and afterwards to be once rectified by some con-centrated nitrous fire, that so being already of themselves subtile, they may get a fiery vigour endued with a faculty of seizing upon metallick sulphurs, and of extracting them out of the hard and compact bodies. For any vegetable oil how subtilly soever it be prepared, hath not any power of entring into the metals, and much less of having any ingress into their glasses, nor can it extract in the least, though such bodies should be covered with it for a long season. But now if an artificial operation shall have sharpened such an oil with those most subtile spirits of salts, and have rendred, it more acute and penetrative than those con-centred spirits of the salt do lead in the sulphur, and bestow on it a power of attracting to it self its like.

And albeit that such concentrated spirits do when PER SE, and alone, wholly dissolve metallick glasses and make no separation at all, no, nor do not extract the least particle of any sulphureous substance, yet the case with them is castly altered, when such fiery spirits are artificially united with most pure sulphureous oils; insomuch that they

bestow on them a faculty of working upon metals, and of extracting from them a most pure sulphur; nay farther, they purchase these oils a capacity not only of extracting the colours out of metals, but also out of other things. Now we have taught at large in our second part of Furnaces, the manner of rendring the oils of vegetables subtile; and as for the nitrous fire requisite to this operation, the way of concentrating it is to be found in this Book a little before, so that 'tis wholly needless to repeat the same things over again which have been afore treated of. And thus far is my knowledge come, viz. how by the help of oils animated and actuated by the aforesaid means; to extract the most pure soul out of metallick AMAUSA'S, or those hard and glassy subjects: But how such a sulphur is to be brought into a tinging medicine, I (professing not my self to so great a master) do not as yet know. Neither is it at present needfull to exceed the due bounds by so large a treating of such worthy things; for things wonderfull may be effected by this MENSTRUUM both in Medicine and Alchemy, and in other arts, concerning which we shall (God willing) presently add somewhat more.

And whereas I have made mention here of clarified bodies, and concentrated spirits; I judge it worth while also to shew what difference there is betwixt those concentrated spirits and clarified bodies as the Chymists call them.

The clarified bodies therefore are nothing else save bodies purged and mundified by the operation of the fire. For the fire is the ultimate examiner of all things, as being endued with such a power by which it burns up all things, reduceth them into ashes and powder, and out of the ashes makes glass; that being the utmost or ultimate thing whereunto all things are reduced. If therefore there be in any thing any good, which being burnt in the fire is by fusion or melting, turned into transparent glass, it doth manifest it self in its utmost or ultimate essence, and shine forth in its brightness, insomuch that every one may see what lay hidden in its life afore thus burning it. For example, I take wood, an herb, or an animal, I burn it and transmute it into ashes; these ashes I melt and turn into glass. Having thus done, there appears no colour visible, for the glass is white, and that because the sulphur is consumed in the burning; and the mercury is fled away into the air in smoke, as being two principles which are no ways able to resist the force of fire: But the salt, as being a contemner of the fire remained in the earth of no efficacy.

But now a metal being by the fire turned into ashes, though part of the sulphur and mercury hath in the combustion and vitrification flown away into the air, yet notwithstanding the best part remains; and this is the reason why such metallick glasses are coloured according to the metals nature and property, and which (afore thus burning it) was hidden. We will yet farther evidence it by an example.

If I add to burn iron or CROCUS MARTIS the glass of lead, then the glass made by melting will have the yellow colour of a Hyacinth. The same CROCUS MARTIS being molten with common glass, made of wood-ashes and salt; yields a greenish coloured glass which is the natural and proper colour of the iron. For the lead altered the colour of the former mentioned glass of the iron and made it yellow in the melting, and so hindred it from manifesting its true and natural colour. The glasses of two several colours being molten together do exhibit false colours, as may be seen by co-melting a skie colour and a yellow glass, the which being molten together yield a green colour, and doth so represent it self both in the fire and out of it too. From hence took I occasion to write and teach the way of finding out (by molten glasses) what kind of metal is hidden in any mineral or metallick earth. Which way of proving mines or minerals is far better and speedier than that which is usually done by a decoction and exhalation of lead in the Cupel. Thus may you mix five, six, eight or ten grains of some finely powdered mineral, with one or two lots of Venice glass being of easie fusion, and put the matter thus mixed in a well covered crucible, and by melting it reduce it into glass. The colour which will be in the said glass, will shew what metal the MINERA contained: Lead will yield a duskish colour, tin, a white, copper, a Sea-green; iron a somewhat greenish, silver a yellow, and gold a skie coloured; each of which colours is the true and internal colour of the respective metal. Gold doth also resemble a Ruby as to colour if other colours be added there-unto. But yet in the mean time, the skie colour is its proper and natural colour, and so is yellow of silver; and this is notably agreeable with the truth, though to such as are ignorant, it seems a thing wonderfull, for indeed such mens knowledge ends in external things, but they are wholly ignorant of internal ones. But now the colours of gold and silver are better and more perfectly known, if there be added unto them some fix and white sulphur, which prevents the gold and silver from being thoroughly reduced into their peculiar bodies by fusion. If the CALX of gold or silver be molten with Borax, they both return into their former bodies,

and do not pass into glass any ways coloured: But that some glass of easie fusion be mixed with these CALX'S, together with a little powder of flints and so molten, then the flints will (by reason of their sulphur) hold with themselves the gold and silver and so keep them that they admit not of fusion (or reduction) in their whole body, but do remain in the glass with some part of the metalline property which renders their internal colours visible, which else would not appear to sight.

N. B. If you have the mineras of gold and silver at hand and melt them with glass, their colours will also appear, because that in the minera's there always is some sulphur that hinders the metal from wholly returning into a body, so that some part of it abides in the glass, and therein shews its colour. This also is to be minded, that if haply some minera or metallick earth contains not one metal barely, but 2 or 3 more metals, then always that metal of which the most quantity is in the said minera doth after fusing shine in the glass beyond the rest. As for example.

Suppose I would make tryal in the red Granates (stones) I powder some eight or ten gr. and mix them with one lot of white Venice glass finely powdered, and I melt them, and so turn them unto glass. Now in this transmutation the glass doth not become red, but of a delicate grass colour, and so teacheth me what metals are hidden in those Grariates, viz. copper and iron, and also more of this, (viz. the iron) than of the other. And though there should be some gold too, yet is it unperceivable because of the predominancy of the iron over the copper and over the gold: For in this operation that metal only manifests it self to sight, which is in greater plenty therein than the rest be.

ISAAC HOLLAND would by this vitrification signifie unto us, that after this life, viz. when the would is consumed with fire, there shall arise from the bodies of men reduced into ashes other clarified bodies, and of such and such colours, according as their souls have (either good or bad) framed, or as it were made unto themselves in this life-time in their gross bodies. What other thing (I pray) are fair colours, but the virtues of those subjects out of which they emit or send forth their splendour.

Take a similitude hereof from the melting of minerals, wherein though a mineral of silver or copper hath in it much silver or gold, yet if the superfluous sulphur be not (before the melting the said mineral) separated by a little as 'twere roasting fire; but be (together with

that gross sulphur) set in a vehement melting fire, there will not verily be any metal gotten hencefrom, but that stinking sulphur would transmute the good metal into black Scoria's. So likewise, no fair and transparent glass can be by melting) made out of pure metals, if that kind of gross sulphur should adhere unto them.

These few things touching clarified bodies, I could not pass over in silence, and much less could I omit this, viz. that the bodies of all things may be much better transmuted into clarified bodies by our secret fire, than by the common fire. For the common fire drives away the volatile parts, whereas on the contrary, our fire doth preserve them and renders them fixt and transparent as well as the other parts. And therefore of necessity these bodies must needs shine with fairer and brighter colours than those others, in which the common fire hath expelled the mercury and sulphur, and left remaining nothing else but the salt.

But now as concerning such a transmutation into ashes by our moist and secret fires, any one may easily guess the way. For whatsoever is put in them must be necessarily burned into ashes, and they far better ashes too than are made by burning in the common fire after it the common fire burns any herb or wood into ashes, the sulphur burns away in a flame, the mercury betakes it self to its wings and away it flies, and the salt abides behind in a few ashes, or a little earth. Now out Philosophical calcination takes away nothing but conserves all (the principles so called) together; and doth in the first place produce to view a black coal, then afterwards other various curious colours, and then a white colour; and at last to complete the operation, it yields a red fusile and medicinal stone.

N. B. Here it is to be noted that for preparing a pure medicine, a pure subject is to be made use of; for if to be that any one would endeavour the transmutation of an herb, wood, or any animal into a medicament by the help of the secret fires, then all the ashes and feces which were in the herb would also adhere unto the medicament and would render it impure, therefore necessity requires that you do not take the whole herb, of the whole animal, but only their essential salt, the which being void of feces consists only of the pure principles of the herb; and doth easily admit of being transmuted into a red tinging, and more soluble stone than the herb it self with its feces by it, doth.

I would not have you to account of these things here delivered you as if they were of small moment. No, for they are such things as cover

over with this their vile or base covering, such matters as are of great weight, and which will not come to every bodies knowledge. Surely 'tis a considerable thing that a part of any vegetable, animal or mineral body should (by conserving all the most volatile parts, and by rendring them altogether constant and stable, without the least loss of weight) be ripened into a fixt soluble and tinging red, and medicinal stone. This way of transmuting all things without loss of the weight thereof into clarified bodies, is of all others the best. And those bodies on this wise clarified are without doubt of greater efficacy than are the gross bodies themselves of the animals, vegetables, and minerals, which do as yet abound with their gross and impure feces.

But if so be any one be not herewithall content but panteth after higher things, he may advise with himself about extracting the soul out of this red and fixed stone, and reduce it again by a reiterated operation unto the form of a stone, whereby he will without doubt make it yet far more effectual. And by how much the oftner any one shall repeat this same operation, so much the more effectual a medicine will he obtain, for it will at every reiteration notable augment its virtues, for by such actions the efficacy and virtues of things are con-centered and driven into a very little compass, wherewithall wonderfull things may be performed.

We are yet moreover to see what spirits are, but principally what con-centered spirits are, and what they are able to do.

And because the matter in hand gives occasion of treating thereof in this place, we will briefly give you a declaration of the same.

LXII. What spirits are, and by what means they operate good or evil.

In the first place, there are spirits called vegetable ones, viz. When vegetables are beaten to pieces, and being confused are moistened with water, (provided they have not juiciness enough of their own, or do altogether want it) and so termented, being fermented they are to be distilled, which distillation brings forth subtle and efficacious spirits, and such as are the effecters of many profitable things in Alchemy and in other arts, besides the use thereof in medicine.

Secondly, sundry and divers spirits are also made out of animals by distillation, as out of Blood, Urine, Hairs, Horns, Hoofs, and such other parts of animals, also which spirits have their use in Medicine and Alchemy.

Thirdly, there are also spirits which are expelled, or forced out of minerals and metals by the force of fire, but principally out of Salts, as Vitriol, Allum, Salt Peter, common Salt and such like; of the preparations of which kind of spirits, the Books of Chymists are full, and therefore stop us from the superfluous repetitions of the same. But as for the concentrating of them and the utility of them, it hath been already described by us.

I hereby give occasion for all the diligent searchers after true Medicine and Alchemy; to contemplate, what may be effected in Medicine and Alchemy, if those fugitive spirits were, by our fixing and moist fires which separate not any one part from each other, but do fix all the parts together, deprived of their volatility and made fixt. These few things we were willing to mention concerning the spirits which are subjected to a Man's power and are within his reach, and serviceable for the use of mortal man.

LXIII. The particular medicinal use of the con-centrated spirits of Salts.

We have heard that the con-centrated spirits or moist fires of salts do reduce all things into a CALX, after a Philosophical manner, without a forcing away of the mercurial part, and a burning up of the suiphureous; insomuch that (by conserving, altering and bettering) they fix the whole. Being therefore compelled by a love to my neighbour, I have a mind to set down in this place some medicaments, as well universal as particular; but yet so as that they may not fall into the clutches of (my) unworthy enemies, but may be reserved only for friends.

And first, here shall be a medicine mentioned, that amendeth the weak digestion of the Stomach.

Take out the teeth of a Wolf or a Dog when he is half dead, (being first shot with a Gun) and pour thereupon two or three parts of the con-centrated spirit of salt in a Cucurbit, set the glass upon sand that it may be heated moderately, whereby the oil of salt may dissolve them and bring them into a thick pulse or mash. Upon this mash pour warmed water that so all the Acrimony of the spirit of salt may be separated therefrom, and that there remain only the white pulse, wherewith (because some of the oil of the salt doth yet remain, and is not washable off wholly with water) a Sugar candy is to be mixed, that so that remaining Acrimony may be allayed, and the pulse be the pleasanter

for your use.

LXIV. An Antidote against Poison.

The teeth of a mad Dog being prepared after the aforesaid manner, do yield an Antidote against Poison. And indeed so do the teeth of all Animals, but especially the teeth of Stags and their Horns, do (after such a preparation) resist all Poisons.

LXV. What Beasts they are whose Teeth and Horns do (as a medicine) exceed the rest.

The teeth of all ravenous animals, as likewise of Sea monsters, and their Horns, are of great use in medicine; as of WOLVES, BEARS, LYNXES, TIGERS, LIONS, LEPARDS; and as to the watery animals, CROCIDILES, and such like ravening fishes, whose horn, teeth, and scales, and likewise the claws of Birds of Prey, may be by the concentrated spirit of salt, converted (after the aforesaid manner) into good medicaments.

LXVI. An experimental discovery of what Vermine are fit for use of medicines.

Take strong and well rectified spirit of salt, or only a strong AQUA FORTIS, put thereunto your Vermine, of what kind soever it be, and it will presently endeavour to get out as soon as ever it feels the said moist fire. But being it cannot get out, it will struggle till it dies. Now by how much the longer the worm or flie liveth in the AQUA FORTIS, by so much are its virtues in medicine greater, and this may serve as advice to every one. As for the way of preparing medicaments out of Bark or Trees and Husks shall be mentioned by and by.

LXVII. An experimental discovery, of what Herbs are profitable for Medicine, or unprofitable.

You are to make use of the way but now mentioned concerning Vermine, and such Herbs as thou knowest not, or such whose virtues are to thee unknown, put (one after another) into the moist fire; and that Herb which is of a slower solution, excells that which is sooner dissolved, both in strength and virtues. For example, Lettice, Purstane,

Melions, Cucumbers, and such like waterish Herbs, (and so is it with fruits too,) have a moist nature, and are presently turned into water by those fires. But Rosemary, Sage, Thyme, Dodder, and other hotter Herbs, require a longer time for their solution. Ginger, Pepper, Cloves, Nutmegs, Cinamond, Cardamoms, Zedoary, and etc. do require a yet longer time as to their solution, afore they will thoroughly pass into a water. From hence may any one know the nature and properties of Herbs very easily. This also is to be observed, that the Medicine out of a Vermine, or out of any Herb, is by so much the more efficacious, by how much the vehementer venenosity it abounds withall.

LXVIII. The manner of preparing an effectual medicament out of venomous Vermine and Insects.

I have taught in the second part of my spagyricall PHARMACOPAEA, a way of correcting venomous insects by the fixt Liquor of Niter, and of transmuting their venome into an effectual Medicine, which (way of preparation) he who is studious of good medicaments will there find. But now in this place is taught, by what means such like Vermine, and such Herbs as abound with Venome are to be corrected by the con-centrated fire of salt, and to be turned into excellent and penetrative medicaments. The operation whereof is thus.

Pour into some glass vessel, one, two or three ounces of our con-centrated fire of salt, then put thereunto such Vermine as you would prepare your Medicine of, one after another, provided that you do not put more in, than the said fire is able to dissolve and consume. When all are dissolved and converted into water, all the poysonousness is lost (or gone) and they become good medicaments.

LXIX. The manner of separating the medicament made of Vermine dissolved by the moist fires.

There is found to be a great difference amongst Vermine and venomous insects. For some of them are of a dry nature and property, some of a moist, some of a fat and oily nature, insomuch that it is altogether needfull to make a due distinction of their natures. Such insects as be of a dry nature as Cantharides and such like, are to be used in the form of a salt. The aqueous Vermine, as Earth-worms, Spiders, and such like; they exhibit their medicinality in the form of a

Liquor: The Balsamick Vermine, as the May-worms, and others of that kind, do (beside the medicament they afford) yield also a fat and Balsamick Oil; and indeed (both for external and internal medicinal use) much more effectual than the Liquor it self.

But that the thing may be the better understood, I will here set down an operation, which every one may follow as a leading Star.

LXX. How the operation in dealing with all kinds of Vermine is to be used.

Take some ounces of May-worms, put them in a glass, pour upon them so much of the con-centrated spirit of salt, that the Worms may be well covered therewith and be by little and little dissolved; after that they are wholly dissolved, put the solution into a separating glass, shut the mouth of the glass with your finger, then turn the glass upside down, keeping it so long shut with your finger, till all the fat oil swim at top of the Liquor. Then take away your finger that the Liquor may run out, and when the oil comes, shut the mouth of the glass again with your finger, and let it run out into another glass. Keep this Oil or Balsam as a precious treasure, with the which thou wilt perform wonderfull effects in the curing of diseases, but principally in the Gout and Stone. But yet thou wilt get but little oil from these Worms, and when you put them into your dissolving Liquor, you must have a care that you do not touch them with your hands, but take or catch them with a small Forceps, and so put them into your glass. For they have in them this property; if you touch them with your hands, they presently colour them with their fat Balsom that they cast out, which somewhat resembles the smell of Musk. As if they should say, PRAY LET US LIVE, FOR WE GIVE THEE ALL WE HAVE: TAKE THIS BALSOM AND MAKE USE THEREOF FOR THE CURING OF INCURABLE DISEASES.

Some men studiously carefull in such affairs have gathered this Balsom, and have found it to be far more efficacious than the Worms themselves, yea indeed too strong, because they were ignorant of the way of correcting it.

LXXI. The separation of the medicinal Liquor from the moist fire, after the separation of the Oil.

As concerning the Liquor from which the Balsom is separated, viz.

the medicinal parts is very hardly separated without a mortifying of the moist fire; therefore the moist fire of the Salt is to be killed with a contrary fire, that so the separation that is required may be made; and 'tis thus to be effected.

Filter the Liquor consisting partly of the dissolved Worms, and partly of the fire of salt, that so it may be rendered clear, and free from the Coals or Husks of the Worms, if haply there be any of them remaining undissolved. And if (by reason of the too much fatness it be very difficult to filter, pour thereunto so much common water as to make it tinner, and more ready to pass through the Cap-paper. Into this thus cleared Liquor, drop the Liquor of Salt of Tartar, and it will kill the sharp fire of the salt; so that there will arise from the fire of the salt and from the Alkaly-salt a salt of a middle nature, and concreting into Crystals, and will leave the other part in a Liquid form; the which said part will be either white or yellow according as the saline fire which you made use of, is. Now this Liquor is more virtuous than the concreted salt is, as being that which contains the essence of the Worms, which doth not congeal or shoot with the salt, but abides in the form of a Liquor. Experience will teach the business more largely.

Now, such qualities as these Worms had afore their preparation and as yet not deprived of their Venome; the same do they obtain after their preparation, but with this proviso, these qualities are safely used, which afore were hazardous. But now the properties of these Worms are these. They do not only draw out of the body all podagrical humours, but also expell the Stone out of the Reins and bladder beyond all other medicaments; and besides, do cure other such like diseases as are meerly unknown, and are adjudged plainly incurable. More, it wholly takes away that volatile Gout, which runs wandring through the Members of the Body. But here ariseth the Quaery.

LXXII. Whether or no every moist fire of salt is also fit for this labour?

For answer I say, that indeed this very labour may be accomplished by any moist fire; whether it be prepared out of vitriol or common salt, or salt peter. But withall I affirm, that there proceeds a great difference from those salts. For the con-centred spirit of niter, doth (after its being mortified with a fix salt) shoot into salt peter. The con-centrated spirit of salt, shoots into square Crystals. The same doth

oil of vitriol and salt of tartar. But the salt that is in this operation made of the common salt exceeds the others, as to sweetness. That which comes from vitriol, doth beget a nauseating by reason of its bitterness; and that which ariseth of salt peter is of a middle nature. But yet they do all three of them enjoy a laxative and purging faculty; and likewise provoke Urine either stronger or weaker according as the Vermine are, which these said fires have been used in the dissolution of.

N.B. That the operation of the Liquor doth always exceed the virtues of the salts. When the sharp spirits of salt are not mortified with a LIXIVIUM of Tartar, but with the spirits of Urine or of SAL ARMONIACK, the salt and liquor become far stronger, than when the precipitation is done with Salt of Tartar. For the spirit of SAL ARMONIACK doth for the most part precipitate the dissolved and corrected Vermine into a Powder, which being washed off with common water, and freed from all Acrimony or sharpness is used in medicine, in a dry form. But this, the LIXIVIUM will not do, but always conserves the Vermine in the form of a liquor.

LXXIII. Question. Whether or no there may be any more or any other usefull things learned from this solution of venemous Vermine?

For Answer. Yes, for this operation doth not only teach the good and bad properties of all Vermine, but doth withall evidently demonstrate, that every animal of what kind soever, (yea and Men themselves too) when they are put into such an agony and perceive the approach of death, do discover and clearly evidence the internal motions of (their) nature, which they have (in their life time) been indued withall.

LXXIV. The way how to know the internal nature of every Worm in the earth, Fish in the water, Birds in the air, yea evon of Man himself.

Take a SCARABAEUS or Beetle, either such a one as lives in Horse-dung, or else one that is of a coppery colour, put him into a glass wherein is some AQUA FORTIS, and you shall see that in the utmost necessity (or last agony) of death, he will not endeavour to get from out of the AQUA FORTIS, but will strive to hide himself in the earth according to his innate property. But whereas the bottom of the glass is too hard for him to get through, he will be so long endeavouring to

accomplish his desire, and in striving to get through the bottom till he dies. From hence may it be perceived what his ultimate refuge (or shift) is; viz. to endeavour the shunning of his approaching death, by sheltering himself within the earth.

If you put a flie in the AQUA FORTIS, she will not go to the bottom but will do her utmost to get out at top, because her living is in the air, and so all volatile or flying things are wont to do. As for a fish if it be put to its shifts, it endeavours to shun the danger by betaking it self to the bottom.

In such a kind of manner doth the nature of men become apparent, when they are reduced to the extreamest of difficulties. A Godly man, whose thoughts are in this life time always upon God, will constantly adhere unto him in his Agony, and being upon dying will betake himself to him for his refuge, in whom he hath at all times built his hope, and waiting or looking for help from thence, from whence he hath always hoped for it.

But the ungodly Man who hath never in his life time feared God, nor set him before his eyes, but hath always yielded himself with his thoughts unto the will of Satan, he will very hardly Implore (in his greatest anguish) the help of any other than of him, to whom he hath (in this life time) adhered in all his thoughts and actions.

LXXV. The preparation of good medicaments out of venemous vegetables, by the con-centrated spirits of salts.

We have hitherto taught, that our moist fires of salts do indeed destroy all things, but do not burn up, or force away ought of such things as the common fires are wont to do. That this is true, even the vegetables themselves bear witness, which being put into our moist fires are therein dissolved, and pass into a water. But their oil which is in them is separated, and swimmeth at the top, and so may be separated thencefrom, as we have mentioned above, concerning the May-worms. After the same manner the essence of the herb may be severed from the spirits of the salts, as we have there declared. The oils which by this operation are drawn out of the herbs and other vegetables, do obtain great and peculiar virtues, because they are excellently well corrected by the efficacy of the moist fires, and are amended, which correction, and bettering they do not at all attain by their being distilled and expressed.

LXXVI. The correction of the too vehemently purging subjects by the moist fires, whereby they may be safely made use of.

DLAGRIDIUM or SCAMMONY, HELLOBORE, CATAPUTIA, GAMBOGIA and other vehemently purging subjects may be dispoiled of their venemous faculty by the aforementioned way, and be rendered more sweet and milder.

LXXVII. The correction of the too vehemently operative Diureticks, whereby they may be of safe use in the cure of the Stone.

Dissolve Cantharides, May-worms, Earth-worms, Millipides or Piglice, in our con-centrated fires, and follow those ways of operation which we have afore prescribed, and you shall acquire an excellent and safe medicament, having a faculty of healing the Stone of the Bladder and Reins.

LXXVII. The amending of narcotick and somniferous subjects, by our moist fires, that so they may perform or shew their virtues without hurt or danger.

Take OPIUM, Henbane seed, Mandrake, or the like subject that provokes to sleep, pour on it the con-centrated spirit of salt, and it will melt (or dissolve) therein; if there be in it any oilyness, as in the Henbane seed is usual, it will separate it self, and swim on the top of the liquor, the which is to be severed from the liquor, and to be warily kept; because it being only anointed on the Temples will presently cause sleep. The liquor is to be used internally, as we have prescribed in the precedent preparations.

LXXIX. The amending of venemous subjects, that are together purgative, suderifick, diuretick, and somniferous, by our moist fires; insomuch that they do not only become safe, but are the effecters of much good in medicine.

Amongst the number of such kind of subjects, are Stavesacre, or the seed of the louse killing herb, Levant Berries, vomiting Nuts, and many others of such a like faculty, which are to be proceeded withall after the same manner, and by the same operations as the former.

By this or the like way may all venemous, and vehemently operative vegetables and animals be corrected, so as to be safely admitted to internal uses, and to be producers of such effects as are of great moment in Physick; whereas otherwise (though they have in them excellent virtues) they cannot by reason of their vehement operations be taken into the body without danger.

LXXX. Whether or no poisonous minerals may be corrected as well as the vegetables and animals, by our secret and moist fire of salt, and be turned into wholesome medicaments.

You are to know, that not only venemous animals and vegetables but likewise all the minerals that abound with poison may be amended, and their most present or speedily operative poison be converted into most excellent medicines. For example.

LXXXI. How the venenate and volatile minerals are so to be inverted by our moist fires, that the volatile be rendered fixt, and the poison be made a medicine.

Take of white or red Arsenick one part, pour thereto two or three parts of the concentrated fire of niter, the which (niter-spirit) you shall distill thencefrom in a head and body in sand; then take the remaining matter out of the glass, and wash it with common water, which being done, you shall have the Arsnick, Diaphoretick, and such as may with safety be taken into the body; but yet in a small dose, because it doth sometimes provoke vomit, and principally when the nitrous fire is something of the weakest. But to prevent such vomiting, the said fire is to be twice or thrice drawn off from the Arsnick, by an Alembick; that so the poison may the better be slain, and the volatility transmuted into a fixity; and the same Arsnick may be afterwards molten and handled with the other metals without all danger of poison, which was impossible to be done afore. For the Arsnick whose poisonousness is not as yet removed from it, cannot be admitted into the body without great danger. Neither do we here insert the preparation of such medicaments out of Arsnick, and the like venemous minerals, for this cause that they should be introduced into medicine; no, for there are other safer medicaments to be had, our aim herein is only this, to shew that even the most poisonous, and most fugacious or volatile minerals may be inverted or

turned in and out by our moist fire, and dispoiled of their venenosity and rendred fixt.

LXXXII. The manner of transmuting the fugacious and easily fusible (fluxible) minerals by the moist fires of salts, so that being fixed they hardly admit of fusion or melting.

To exemplifie this, let us consider of Tin or Zink, which are reckoned amongst the metals of most easie melting, and are most volatile. For the vulgar know that Tin is molten with a very little fire, and doth thereby vanish in fume, if it be but kept in continual flux. But if it be calcined by continually stirring it into ashes, it becometh fix, nor doth it admit of reduction to its former body by any violence of fire, but is turned into glass.

So after the same manner do we roast or calcine Tin, ZINK, and the other flying metals with our moist fires, and burn them into ashes, and they such ones too as do not return to their former body, and thus 'tis done; when we pour on them our fiery liquors, so as that they heat together, or do even by abstraction (or distillation) again free the said metals from those liquors; for then these metals remain in the bottom like dead ashes, nor do they suffer themselves to be by any means reduced to their former bodies.

N. B. But whoever he be that knows the using of such matters and powders thereunto, as can reduce such ashes to their former and fusile bodies, such a one will not spend his labour in vain; for he will get a metal of a much more noble and better nature than Tin, whose greatest internal part is gold and silver.

But yet let no body imagine that he can perform this reduction by the help of Borax or Salts; no, in no-wise. For there are metallick matters required to this labour, to cause a fluxing or melting, sundry preparations whereof I have taught to and again in my writings, but not under such a title or name as if this power or efficacy of thus doing were ascribable unto them. For I have barely mentioned their use in other metallick transmutations.

LXXXIII. How flying mercury is to be so fixed as to admit of heating red hot.

Coagulate common mercury with common sulphur into a black ashes,

and then mix this ashes with the con-centrated fire of vitriol, or rather with such a fire as is extracted from sulphur it self; so as that there may arise from this mixture a thin mass; of which mass put one or two lots in linnen or cotten rags, and so rowl them up that one fold may come over another, and the mercury may be in the middle. Then tie this ball firmly and strongly with a thread, and let it be environed all about with the fire, that so all those rags may be red hot and changed into Coals.

Take out all this red hot mass, let it cool, separate the burnt linnen rags, and you shall find the mercury turned into a red powder; but yet it hath no ingress into the metals, nor performeth it any thing of much moment in medicine, because it is converted by the burning of our fire into a dead earth. Neither have I here mentioned this coagulation as if any gain were to be received thence-from; but only on this account, that the most great virtues and powers, of our fires may by the operation thereof be demonstrated.

LXXXIV. Another experiment easily demonstrating the possibility of rendering mercury constant in the fire, by our secret fires of salts, which thing the known and common fire can never do.

Melt one part of common and yellow sulphur in a crucible or earthen Pot, and being molten like oil cast thereinto two parts of common mercury, and mix the matter well with a SPATULA, that the sulphur may assume the mercury, and may pass with it into a black mass. To which mass you must yet add so much sulphur as the weight of the whole mass in the Pot is of. Then all is to be molten together, and to be by well stirring so long mixt until it get an ashy colour. Then you are to dip in the said mass as it is in flux, pieces of linnen, such as they are wont to use about fuming their Barrels with a brimstony odour, to preserve them from stinking. Such rags being put on an Iron Crook may be kindled, by which kindling they are burnt up, the sulphur and part of the mercury vanishing into the air, but some part being calcined with the flame of the sulphur, and fixt, sticks to the burnt linnen. But what virtue this calcined mercury abounds withall I cannot tell, as having never experimented it, and I have only inserted here this operation, for this end, that the power of our moist fires may be made apparent. Many more meditations and inquisitions will be thereby laid open, which otherwise would never have been sought after nor found out. For in this

labour there operateth a twofold fire, viz. the visible flame, and invisible moist fire which the sulphur hideth, and by the burning up of its body, manifesteth, and renders visible and efficacious.

For that heavy acid oil of sulphur, which sticks hidden in all sulphur, performeth most great matters in metalline things; because the flame or external fire exasperates and forceth on the internal, sharp and moist fire of the sulphur, that acid quality sets upon that subject that is adjoined to it, and destroyeth the same, and advanceth unto a more fixed state.

But that I may in some sort satisfie the greedy searcher after truth in this thing, it seems to me expedient here to mention the occasion, which (without studying thereafter, viz. this coagulation of mercury) did by chance bring me thereunto; and did chiefly shew me an excellent ARCANUM of bringing all Wines, Vinegars, and other such like drinks easily and speedily to a clarity and transparency. Such a secret it is, as I believe never was known as yet to any, and therefore worthy to be here set down for the common benefit of mankind.

LXXXV. An historical discovery of the reduction and restoration of tenacious and corrupt Wine, to its former clarity and goodness.

I had some Wine in a Vessel that became viscid or ropy and tenacious; for the amending of which, I sent for a Wine cooper, he pours it out as is the usual custom into another fresh vessel, and used thereunto all his art, that so he might better it. He passed it oft times through a long Pipe made of white plates, and perforated with many small holes, and many other means he used, even whatever he had knowledge of, but yet all he attempted was in vain. Then at last he put into the Wine no small portion of salt, and shook them both together very strongly, but all in vain, insomuch that he left my Wine corrupt (as he found it) and out of all hope of restoring it.

But because there was too much salt thrown into the Wine, yea so much as that it might be perceived even by the taste, the Wine was rendred unfit to be drunk, though it should have (thereby) recovered its former clearness. So there remained nothing else to be done therewithall, save the extracting of its spirit by distillation. Yet nevertheless I had a good mind yet to try whether or no it could possibly be freed from that tenacity; to this end therefore I kindled some sulphurized rags, being sprinkled over with the mineral or ore of

lead reduced into powder, and with that fume imbued I my Wine, as is the usual custom when Wines are through corruption degenerated from their good state or condition. I added thereto the ore of lead because that as the sulphur was burning the fume of the lead might penetrate the Wine and precipitate all the defilements to the bottom. But this experiment did not fadge. Then I took mercury and mixt it with sulphur after the aforeshown manner (in the foregoing Chapter) and dipt some rags therein and kindled them, hoping that the mercury being transmuted into fume, would have ingress into the Wine. But yet it appeared quite contrary in the use, the sulphur indeed was consumed by burning, but the mercury would emit no fume, but was contrarily turned into a red powder, and stuck on to the burnt rags. After these burnings, (viz. of this murcurialized sulphur) often reiterated, the Wine did not smell of the Brimstone, as its usual to do, but of Musk or Ambergrease, and recovered its former clarity; but yet not fit to be drunk because of the overmuch quantity of the salt thrown thereinto.

Thus it happened unto me, the which thing others may consider of with a more accurate meditation, and may haply (from this history) apprehend such things, as may in other matters be very profitable. For it is not in vain that I mention these things in this place. Enough is said to the wise. 'Tis sufficient that I have showed the way, if any one refuse to go in the same let him blame himself.

LXXXVI. How our moist fires of Salts are able after a sort to fix the yellow and common sulphur, so that it may be used with profit both in Medicine and Alchymy.

Take one part of yellow sulphur beaten into powder, and four or five times so much in weight of the con-centrated fire of salt peter, which spirit pour upon the said powder in a glass cucurbit, and extract or abstract it thencefrom several times by an Alembick; this done, the sulphur in the cucurbit will get a red colour and become pellucid or transparent.

If it resolves in the air into a fat oil, the operation is well handled; if not the labour is to be repeated either with the self same fire or with more new, which is the better way. For the said fires are to be so often drawn off thencefrom until it flow (or resolve) into a fat oil: An oil I say of sulphur which is endued with great virtues, not only in Alchymy and Medicine, but may likewise be used in other arts

with a great deal of profit. But especially it is an egregious Balsom, resisting all the sicknesses of the Lungs, and other putrifying corruptions, as shall be apparently evidenced in the following Centuries, more largely treating about these things.

LXXXVII. A way of turning Antimony into a snow-white medicament, by our moist fires of salts, and which is of safe and profitable use against the Plague, all Fevers, and other diseases.

When the REGULUS of Antimony made per se without iron, and beaten into a powder is persued or throughly moistened with the con-centrated fire of salt peter, and is for a while kept in warm sand; the moist fire burns the REGULUS of the Antimony into a white powder. After that the whole shall be of a white colour, pour therein common water, and it will imbibe or draw to it self the fire of the niter, which will again be fitting for other labours, and perform the office of spirit of niter.

The white powder being by many washings rendred sweet, and then dried, performs the office of an excellent diaphoretick medicament and may with safety be used; it strongly resists the Plague, all fevers and other diseases, that are to be expelled by sweat.

LXXXVIII. By what means black and crude Antimony is to be reduced by the nitrous fire into a white powder, and the combustible and yellow sulphur separated therefrom, that it may serve as a PANACAEA for the resisting of all diseases, and may operate by the four Emunctories, Vomit, Stool, Sweat, and Urine.

Antimony is by so much the better and nobler, by how much the longer and fairer Rays or Stria's it appears to be of, and therefore such is of greater efficacy in medicine than all other sorts. To this therefore being powdered, pour so much of the nitrous fire as may serve to dissolve it; the which fire will presently even in the cold, begin the work of its dissolving. When that is done, put the glass in warm sand that all the Antimony may be dissolved, and its yellow sulphur may swim at top of the solution like a yellow powder. The solution being cold, strain it through a pure linnen cloth, and the sulphur will stay behind in the cloth, and hath its peculiar use in Medicine and Alchymy. But to the solution pour common water, thereby to quench and weaken the nitrous fire, so that the Antimony may fall down to the bottom, in the

form of a tender and snow-white powder; the which being well washed and dried, may be made use of as a PANACAEA to drive away many diseases: For it operateth with a singular efficacy by all the Emunctories, but yet very safely, unless any one doth too foolishly and unskillfully abuse the administration: It is also endued with all those virtues that I have ascribed to my red PANACAEA.

LXXXIX. By what means the con-centrated fire of Kitchin salt drives over Antimony in a retort like Butter, and affordeth a matter of profitable use in Medicines and Alchymy.

Pour upon the REGULUS of Antimony beaten into a powder, the heavy con-centrated oil of common salt, the which being again drawn off thencefrom in a retort by distillation, brings over with it as much of the REGULUS of the Antimony as it can, and ascendeth like a thick Butter. It is a mighty fire, and very fit for the ripening of some immature metals; and withall is most profitable in Surgery, and lays a good Basis and foundation for the curing of incurable and cancerous Ulcers. If you pour water upon this oil, the Antimony precipitateth out of it, in the form of a white powder; and is to be afterwards well washed and dried; so that being reduced into that white powder, it becomes a good medicament to be used in all those diseases, wherein the aforesaid medicaments are appliable; but with this caution, that it be given but in a very small dose, because it is of a more powerfull operation than the aforegoing medicaments prepared by the help of the nitrous fire are of, and that for this reason, because the oil of common salt makes things fugacious or flying, but the nitrous fires renders them more constant in the fire.

XC. The way of turning mercury into red, and strongly purging medicament by the operation of the nitrous fire.

Abstract two or three parts of our nitrous fire, from one part of purged mercury, by distillation in a glass cucurbit; and it will make the mercury far more fixt than if AQUA FORTIS were many times drawn off therefrom by distillation. This red mercury is to be freed from its saltiness with common water, and so becomes a strong purge, and is to be used in a small dose of one, two, three, or at the most four grains, and effecteth the cure of MORBUS GALLICUS, and other such like loathsome

diseases.

After the same manner there may be easily prepared, not only sundry and excellent medicaments, by the operation of our moist fires, but there may be likewise done things of great moment in Alchymy and other arts; concerning which time will not permit me at this present to make a more ample narration of, but I will remit it to the next following Centuries.

Now forasmuch as I call in this Treatise the con-centrated spirits of salt, moist fires, and yet as to their outward shape they represent no shew of fire at all; I deem it necessary to shew by a more firm demonstration, that they abound not only with fiery virtues, but also are (after their inside is turned outwards, and their outside inwards) true, visible, palpable, and sensible fires, but especially the nitrous fire, which best of all confirms this our opinion and saying, it being prepared by the Chymick Art and operation out of a fiery subject.

XCI. The way of converting or turning the internal and yellow colour of our moist and white nitrous fire from the inmost parts, outward, and making it visible.

That there is hidden a yellowness and redness in niter, is not beyond the reach of any ones capacity, but it is very easily likely, and credible. For seeing that salt peter is a solar child, it must necessarily answer to (or resemble) its father the Sun in colour, form, virtue and efficacy, if it would purchase belief with any one as to its original and nativity. But salt peter shines with a white colour, but the Sun is clad with a yellow garment and shines like the fire; insomuch that there is no correspondency or likeness of colours, though otherwise there is found the greatest similitude in burning, and in ripening all things. This only being the difference between salt peter and the Sun, the one, viz. the peter doth particularly only augment, ripen and advance all things; but the Sun doth universally bestow on all things, life, increase or growth, and nutriment, but yet the salt his companion is an helping assistant as shall be evidently proved in the end of this book.

I do verily believe, that if it were an easily accomplishable thing by us, viz. to extravert the internal and innate redness in salt peter outwards, and to separate the same from its unclean and gross body, and knew we how to render it fix and constant, we should perform things of

most great moment, in an universal way.

But yet for the removing of this doubt, I will shew that salt peter is the son of SOL, though (as to its outward Physiognomy, it resembles not its Father. I do therefore say, that its Father is the yellow Sun, from him it is generated, but yet by the help of the white Moon, she is the Mother, and bestows on it the white colour. But I say, that the paternal blood and fiery virtues it hides in its inmost bowels. So wisely is Salt Peter signed by its Parents, viz. by the Sun its Father, and the Moon its Mother. The Father bestows on this, his Son a fiery heart; the Mother a white and cold body; from hence 'tis that it is clad with an Hermaphroditical nature, being Male and Female together, hot and cold, red and white, vivifying and killing.

XCII. Of the admirable nature of Magnetism, attracting to it self its like.

According to my simple and small judgement, the red colour of salt peter is not (by the operation of any other thing to be separated from its white body, better and more commodiously than by the affinity and likeness of some certain magnet that will touch it.

For example: Let us consider a little of common gold and Common quicksilver, they are so linked with a tye of mutual love, and internal likeness to each other; that the one draws the other unto it self.

For if in dealing with mercury any portion thereof should happen to fall on the ground, and dashing it self into a thousand Atoms, it cannot be by any kind of way better gotten together again, than by the help of such a magnet, as will attract to it self the dispersed and dilated Atoms; such a magnet metals are, and especially gold, as being conjoined to it in the nearest affinity; therefore I sweep together this so widely dispersed mercury, together with the earth and other defilements from which the said mercury is scarcely distinguishable as being all over covered therewithall; and to these defilements do I put a piece of copper, silver or gold, which being well shaken to and again amongst these filthes, draws to it self the widely dispersed and small Atoms of the mercury, and so recovers it by extracting it out of all that rubbish.

Now when the metal hath attracted mercury enough, and can attract no more, the mercury is to be wiped off from the metal with a linnen cloath; which being again well shook amongst the trash as you did afore,

draws to it self the other Atoms; these labours are to be so often repeated, till it be all extracted, and so renders it thee the same without any loss.

Just so and after the self same manner may the inmost soul, and which is largely dispersed throughout the whole body of the salt peter, be extracted thencefrom; were only such a magnet but known unto us, as had a great affinity with the soul of the niter.

I will yet set down another, and a more evident similitude, that so the business may become the more clear and manifest and be the better understood.

XCIII. A clear and evident demonstration, whereby is shown that even the most hidden things may be manifested and rendred visible by their magnets.

Let the admirable nature and property of the common magnet be well considered; nature having endowed it with two plainly contrary virtues, one of attraction, the other of expulsion. For on one of its sides it draws iron to it self, and on the other of its sides it drives it off; and thus it does, not only in its great pieces, but also when 'tis broken into very small bits. For always on one side it draws to it self the iron, and on the other sides drives it from it self, by this operation respecting both poles, viz. the Northern and the Southern.

But to return to my purpose; I will demonstrate by evident examples and operation, that the inmost and most hidden nature and properties of things, are wont to be most evidently manifested and obtained, by attracting, and repelling magnets. For all the things that are, have their enemies and their friends, as shall be proved in the following operations.

XCIV. An operation demonstrating or affirming, that the internal and hidden natures and properties of things may be manifested and obtained by attractive or repulsive magnets.

Dissolve some lots of lead, and such as is wholly void of silver, in AQUA FORTIS, and precipitate the lead by pouring thereunto some salt water, this (precipitated lead) wash with fair water and dry it. Take some three or four ounces of this CALX of lead, and thereto admix a fifth part of pure gold, being first reduced into most pure and most

subtile Atoms, on such wise as hath been taught in other places of my writings; but if you have not at hand such a CALX, use another CALX of gold prepared any kind of way, but yet the first CALX is the fittest for this operation. Melt both the CALX'S, viz. the leaden and golden one in a crucible, that the lead may become a fusile stone; but the gold CALX will (by this operation) be much heavier, and be white, this whiteness is nothing else save pure and good silver, drawn out of SATURN by SOL sympathetically, and made visible, which (afore) lay hidden in the lead in a spiritual and invisible manner.

But some may here demand; forasmuch as there is so much silver hidden in all lead, whence comes it that none are found that get it out from thence? I answer, that there are indeed a many that would get out great masses of silver out of lead, did they but understand the art, and could so bring it to effect. But seeing they are ignorant of the natures of metals and their properties, and know not how to do any thing, they cannot become masters of their wishes. Now in this extraction, there is a two-fold cause presents it self, viz. Sympathy, and Antipathy. The gold by reason of the kin and amity it hath with the lead, draws thencefrom unto it self the spiritual silver; and because of an inbred hatred it has to salt, it drives away the same from it self. The gold therefore (in extracting the spiritual silver out of the lead, hath an assistant, aiding it by a contrary operation, and so bringing to pass, that there is so much the more silver extracted, because the salt being added to the lead, doth by reason of that inbred enmity and difference 'twixt it and silver drive this, (viz. the silver) away from it as its enemy.

And although that out of such lead prepared with salt may silver be always molten, yea without adding any gold thereunto, meerly because of the inimicitiousness that is between silver and salt, whereby it caused that the silver is thrust out of the lead by the same as by its enemy; yet so much silver is not gotten by that way, no not by the half, as is drawn out by the addition of gold.

For when the gold attracts, and the salt expels, there are made two actions together, the one by Sympathy, the other by Antipathy, both aiming at this mark, viz. to extract the hidden silver and gold out of the lead.

Let there be evaporated in a cupel two small centenaries or hundreds weight, each of like weight; and to one of the centenaries add some pounds (of the proportionable small weight as the centenaries are)

of pure gold, and there will come from that centenary more silver by the help of the gold, than from the other, whereto was added no gold: But the gain by this operation will not be much, or haply none at all; but this is only to shew, that it is verily possible, for gold being put upon the cupel with lead, to get some silver thereout of, and to be more in weight; which effect is produced only by a sympathetical faculty. Be now if salt doth also lend to gold its assistance, then is there a twofold operation of a double operator; whilst in extracting of the silver out of the lead, the gold is occupied in attracting, and the salt in expulsion.

These things were of necessity to be laid open by me, forasmuch as they teach by what means the inmost and most pure parts are to be separated from the more gross; so that every one may know the natures and properties of things themselves, viz. with what love they imbrace each other, or what hatred there is betwixt them.

By this experiment then, may any wise and understanding man easily learn and believe, that even out of salt peter or (any) other white body, the red soul may be extracted. Whosoever therefore shall know how to get these helpers, viz. Sympathy and Antipathy for his purpose, shall never labour in vain, but shall at all times reap fruit by his labours.

And as we have shewn that out of any lead, by the help of gold, a good part of silver may be extracted; so likewise may the same be clearly proved to be done with the other metals, and which may also be effected without the help of gold. Yet nevertheless the more fixt metal doth more readily and willingly attract the more volatile and purer part of the other impurer metals, than an unclean metal doth, and even much more readily yet, when there is afore adjoined to that metal from which any thing is to be extracted, an enemy of that thing which you labour to extract.

Upon this account therefore was I willing to insert an experiment, that so none might account of the thing mentioned as of small moment, but rather that he accurately ponder thereupon in his mind, that so he may thereby arrive to things of great moment by a well examining of the same.

Now as it hath been clearly and evidently taught that fixt silver may be gotten out of any lead, as well by Sympathy as by Antipathy, even so may it easily be proved, that the spiritual gold may be extracted out of other metals, partly by Antipathy, and partly by Sympathy, but much easier by Antipathy and Sympathy jointly together, so that one matter

may draw unto its self the object it loves, and the other may drive from it what it hates; as we have proved in lead. If then this may be done in metals, why must it not be likewise done in other subjects.

We will therefore proceed on and see, whether or no it can be so brought to pass, that the hidden redness may be drawn out of salt peter by Sympathy and Antipathy.

Having therefore understood by the things already spoken, that like draws to it self its like, and is repelled from its unlike, there remains nothing else for us to do but to know what that like is, by which salt peter suffers it self to be extracted.

When we advisedly consider the rise or birth of salt peter, it is not to us unknown that it draws its originality from the excrements of animals, but especially from the dung of horned Beasts, as Cows and sheep. And forasmuch as Sheep and Cows do feed only on Herbs and Grass that grow in the Fields, and that those vegetables do proceed from the terrestrial salt by the help of the solar beams, it is more clearly evident than the Noon day light that the hot Sun is the Father of salt peter and the cold night the Mother, the earth the Nurse, and Salt the Food, nutriment and encrease of the same; the which is to be understood as in reference to the MACROCOSM or great World. But the vegetables, or all shrubs, herbs, and all grass which arise out of the earth in the MACROCOSM, cannot be more aptly compared with ought, than with the Hairs and Wool of Men and beasts, which are born out of the earth of the MICROCOSM or out of the animal body, like as the shrubs and herbs, and grass do spring forth and grow out of the MACROCOSMICAL Earth. Upon this score, the hairs, hoofs, or claws, and horns of Beasts; likewise the feathers and claws of Birds, and also the teeth and scales of Fishes, do altogether square as to their similitude with salt peter; they being such things as whereout of, together with other superfluous excrements of nature, true and good salt peter may be made with ease.

And like as to the procreation of vegetables in the MICROCOSM, and for their increase or growth, there is requisite a fat and salt earth, the warm splendour of the Sun, and the fruitfull Rain, whereby all kinds of fruits are born, and ripened; but contrarily by the penury or want of salt (it being the only nutriment) and of the warm Sun beams, and of the Rain which is the promoter of all fertility, every thing that is vegetable must needs perish and die; even so is it in the body of Man: For as long as the heart of Man is in a prosperous healthfulness, and that the central fire, or vital spirit, and radical moisture be not

defective, all things are well and in good equipage, and the whole body takes increase or growth, and the hairs grow plentifully: But on the contrary, when meat and drink fail, the whole body suffers loss, consumes and withers away and the hairs fall off.

But to comprise all in brief, I say, that all growths and augmentations as well in the MACROCOSM as in the MICROCOSM, must of necessity be at a stand and lessen as soon as the warm solar beams, together with the nutriment it self ceaseth and is deficient. So then it is a truth, that in Man as being a MICROCOSM or little World, and in the other animals, the hairs may be compared with the Trees, Shrubs, Herbs, and Grass of the great World, because of the great likeness that is between them.

And therefore the hairs of animals and hoofs, claws, feathers and scales of them are very like to salt peter, insomuch that one part doth after a sympathetical manner extract from the other, the most great virtues and inmost soul, and so one doth manifest the other.

For example, when the skin, claws hairs, hoofs, or nails of a man or any other animal, as likewise the feathers of Birds are smeared with the spirit of niter, or anointed therewithall, they presently become as yellow as gold, and do as twere put on a golden hue. It may now be demanded, from whence ariseth that colour? Comes it from the hairs themselves, or from the niter spirit? If that golden colour did arise from the hairs themselves, then it would of necessity be, that it should also discover it self, when the hairs are moistened with other sharp and strong waters; but thus twill never do, but only when they are smeared with the spirit of niter, or else with AQUA FORTIS, which containeth the niter spirit. From these things therefore it is evident, that the superfluties of the MICROCOSM have a most notable affinity with the superfluties of the MACROCOSM, viz. herbs and grass. Hence comes it to pass, that one part draws or sucks from the other part its best virtues and power, and renders them visible, which afore lay hidden invisibly and impalpably in their gross bodies.

XCV. The manner of extracting out of niter its gold-like soul.

If we would go the nearest way to work with niter to extract its soul, then the gross niter is first to be mundified by distillation, then afterwards out of this purged body is the most pure part to be extracted by a convenient magnet, and the gross foeces to be removed;

and this most pure soul to be brought by concentration and fixation to the utmost degree of perfection and dignity.

And albeit I could here set down in more clear expressions, the manner of extracting it, yet I am not so minded to do because of the unworthy. Let this manuduction suffice, whereby it is shown what means it is to be done by, viz. by some magnet attracting to it self its like by a magnetical operation. I can at all times exhibit such a yellow gold like soul of niter, and use it in the sicknesses of my neighbour. But, enough as touching these matters, we shall be more large concerning them, in the following Centuries.

XCVI. How the moist and cold fire of nitre is to be so ordered as to yield its visible flame.

Put some ounces of our con-centrated and moist fire of niter in a glass, and pour thereupon drop by drop a sharp LIXIVIUM made of Wood-ashes, or rather of fixed niter, and keep pouring on so long, till all the noise, fuming, and ebullition cease, and that the moist fire it self be wholly allayed and slain. This done, all the corroding faculty is taken away from that fire, which said fire doth by this operation return to its former nature, and is changed into such a salt peter as it was afore its being converted into a moist fire. Out of this salt peter, being now made purer and better by so many conversions and operations, may a new moist fire be extracted by distillation and con-centration, which is far better and much stronger than the former.

And now if this second moist fire be again extinguished with a LIXIVIUM of fixt niter, and be again turned into salt peter, and this peter be by a new distillation and con-centration turned into a moist fire, this said fire will be endued with a far greater virtues: For in every mortification and vivification it becomes one degree stronger, nobler, and more efficacious; and so is the salt peter it self too by those conversions and reductions exalted several degrees, and is at length brought to that pass, that it can do more wonderfull things than the common is wont to do; for one pound of such a salt peter being exalted to the utmost degree of subtility is far more efficacious than many pounds of common salt peter, and stronger, and much excels it in virtue. But it is not expedient that every one should know, what may be effected with such a most subtile and most pure salt peter.

The ancient Philosophers hid the preparation and use of common salt

peter; and why should not we also hide such a salt peter exalted to the utmost degree of subtilty, wherewith the common peter is not at all comparable, especially in all such labours whereunto the common sort is wont to be applied, this operates much readiler, and far better and more effectually.

XCVII. An operation shewing the manner how by the help of Salt peter promoted to the highest degree of subtilty, the superfluous combustible sulphur of the imperfect metals may be kindled and burnt up; even as common fire burns up wood, insomuch as nothing will be left remaining save a little fixt Salt and ashes; so likewise in the burning up of the impure metals by our most pure salt peter, there remains also nothing save that fixt gold and silver which lay spiritually hidden in the metal, and is (now) left by the combustible Scoria's.

Every one knows that out of the common Salt Peter and Brimstone, may Gunpowder be made; but yet short in goodness, of that which is made of purified salt peter. By how much the purer and subtler the salt peter is, so much the better and stronger powder doth it make. The same may be understood as touching the other uses of salt peter.

Further, every one knows that the common salt peter reduceth the common metals into a Scoria by burning them, and washeth gold and silver, and leaves them pure, concerning which fiery washing I have hitherto mentioned several things. But that the common salt peter doth perform this washing better than the pure, and this pure better and more efficaciously than the purest, is no such matter in the least, which thing experience will most manifestly open to him who will try the same. Verily a small fire will not do those things which a greater will do, nor will the greater effect such things as the greatest will, and this is so evident and manifest that there is none dares deny it.

Take one part of the REGULUS of Antimony and four parts of pure Tin; melt them in a crucible and pour them out, and let them cool; this mass makes all iron and steel fusile, therefore when you would melt iron or steel, fill a crucible with either of the metals, set it in a Wind Furnace, and leave it so long in the Coals till all the matter wax highly red hot. Then take off the cover and put into the crucible, half as much of the said mixt mass of REGULUS of Antimony and Tin, as the iron or steel put in the crucible weighed, then put on the cover, and cover it over with the Coals, and urge the fire as strongly as ever

possibly you can, that so the mass you put in, may cause the iron or steel to melt. When tis all well molten, pour it presently forth, least the Tin flying away in fume, leave the molten iron, and so it returned to its former hardness and not suffer it self to be fused.

This matter consisting of the REGULUS of Antimony, Tin, and Iron, or Steel, is so hard, that you may strike fire thereout of with a flint.

Now then if you would experiment the abovesaid combustion or burning up, take a good strong crucible made of potters earth, and fill it with salt peter, set it on live Coals so that the salt peter may melt, then having cast your tin and iron in the form of small rods, heat one end of the rods so as not to melt, hold the other end in a pair of Tongs, and put it into the molten salt peter, that the iron together with the tin and REGULUS of Antimony may be burnt up as if it were wood, and vanish away with the flame into a fume. For almost all tin and iron are a meer sulphur, and being consumed by the flame, leave nothing else in the crucible save SCORIA'S, which being washed with water, and boiled on a cupel or test with lead and blown off, do leave behind, the true gold and silver hidden in both metals.

For when by the flame of so pure a salt peter, the impure sulphur of the iron and tin is burnt up, it must necessarily be that what good soever was in the metals do remain behind.

I do not therefore here set down this operation, as if I would thereby promise any one golden mountains. No such matter. For I only manifest these, and such like labours meerly for this end, that every one may know, that salt peter being brought to a requisite purity, is wont to burn up imperfect metals as one burns up wood; and it may be easily gathered thencefrom, that such a pure salt peter doth as to its virtues much exceed the common peter.

As for such like labours of burning up the imperfect metals by salt peter purified in a due manner, and of getting pure gold and silver with profit, they shall be taught in the following Century (God willing).

For even as this first Century doth for the most part treat of fire and salt; so the chiefest part of the following Century shall treat of the wonderfull and great efficacy of purified salt peter in destroying, and reducing metals, and that with great bettering of them, and with no small profit. And albeit I was desirous of inserting in this first Century, such like profitable betterings of the metals, yet it could not well be done; principally because that there are many other things concerning the profitable use of the con-centrated spirits of salt, that

I must necessarily pass over here, because the number of this Century is already up, and therefore must I refer them to the following Centuries.

And forasmuch as there is frequent mention made in this Century, of glasses and crucibles, which none can be without in the preparing and use of these moist fires, because of the many hazards and losses wherewithall common instruments are accompanied, for they often break, or else easily let out or spill the boiling matters; it is altogether requisite that I should here have manifested this excellent invention of mine, which preventeth all such discommodities; and which I hinted at in the second part of my MIRACULUM MUNDI.

But whereas I have bestowed both those inventions there on the poor, of meer gift, it would be an unjust thing to take away from them what is theirs; nay rather they should have by good right more bestowed on them. So then being not able to proceed any farther as to this case, this thing only remains, viz. an affirmation that neither Medicine nor Alchymy can want or be without such excellent Inventions. But yet if any one desires to have them, he may write to those two men, to whom I have given them, that they may trade for the poor; whatsoever any one that is desirous of knowing those secrets shall bargain with them for, he will not be repulsed but obtain his desire, and purchase from them the secret; the which process I will nevertheless describe, omitting the naming of the matters.

XCVIII. The way of putting glasses in distillation and digestion, and so conserving them, that the boiling matter be not spilt.

TAKE ... with this matter fence your glass, that the matters you put into them run not out, or be spilt, and you shall not lose them.

XCIX. The manner of preparing such crucibles as will hold metals in flux a long time, and which can neither be broken nor melted.

R. ...

Mix these matters and moisten them with common water, that they may be converted into a mass, of which you shall (by a crucible mold) frame small and great crucibles, knocking them into your mold with an heavy mallet, according to the manner I described in the fifth part of my Furnaces. Then take them forth of the mold and dry them in the air, and when they are dry use them; for they need not any burning in the Potters

Furnace. They will (being rightly handled) stand a long time in the coals, and will not chap, neither will they melt with the most vehement fire.

C. An infallible demonstration, that in salt and fire all things lie hidden; or, that by the help of the Sun and Salt all things are generated, arise, grow, and encrease.

Forasmuch as I caused to be stamped at the beginning of this small work, a circle with a square in its inside, and with these annexed words, IN THE SUN, AND IN SALT ARE ALL THINGS; (the truth of which figure and inscription is sufficiently enough evidenced by the so many operations described in this Century;) it seemed worth while unto me, to make an assertion here in the end of this Treatise by a true and evident demonstration, that all things are procreated, conserved, and encreased by the Sun and Salt, as being the principal and most noble creatures of God; but with this provizo, that there be present the seeds of those things that require multiplication.

For though the Sun and Salt were yet far excellenter and nobler subjects than they now be, yet notwithstanding could they not produce or generate so much as the smallest herb or meanest worm (to say nothing of a Man) without seed. If we have but seed, then it is permitted us by God, to propagate the same by the Sun and Salt. The beginning of seeds, God hath reserved to himself alone. The seed therefore is for us sufficient, which if we have, we are able to propagate and encrease it even to infinity, by the efficacy of the Sun and Salt, (that universal nutriment of all things).

The universal medicament and nutriment that the Country men use about conserving their Vineyards, Grounds, and Pastures, is the Dung of Cattle and Sheep; from the which Dung being laid to the roots of the Vines and Trees, and thrown into the Fields and Pastures, the Vegetables do attract their necessary nutriment, do grow and bring forth fruits needfull for the support and nourishment of Men and Beasts.

But forasmuch as this nutriment which all the Vegetables do extract out of the Dung of the Beasts is nothing else by a urinous Salt, and that we know how to prepare out of the common Salt, such a urinous Salt which may be used about dunging and fatning the Earth instead of Dung, therefore verily we may be without that said Dung, being but furnished with such a Salt; the which being Alkalized by the fire doth extend it

self much wider, or goes farther, and dures much longer in the Earth, nourishing and dunging it, than the Beasts Dung doth.

Besides it gives to all Fruits and Corn, a far sweeter savour, and smell, than Dung it self doth, the truth of which will easily appear to him that will make tryal of the same. Nay more, and what is of far greater moment; there may (by the help of such Salts be communicated to Fruits, especially to those that grow on Trees, and to Grapes, a most fragrant odour; if instead of Dung, such Salts be used to the Fields and Gardens, and some spices or other things of a fragrant smell be mixed with those Salts, and put to the roots of the Vegetables. An example will illustrate it more clearly.

Plow up some part of some barren Ground, such as is so for want of Dung; or, even some meer sandy ground, and throw upon it of the said salt as much as is sufficient, and by plowing mix it with the Earth it self, and sow therein any kind of grain you please, and it will spring up out of the salted Earth or Sand, and be increased, and recompence the pains taken about it, with an hundred fold increase of the seed, even just as if you had dunged it, nay better than with the common Dunging.

And now I pray, whence doth that faculty of growing, encreasing, and multiplying arise, save from Salt alone, which you sowed your barren Field withall? For the seed cannot purchase to it self nutriment, and aliment, growth and encrease from the barren Sand and Rain water only. And this you may try the truth of very easily, if you fill two wooden Chests or Boxes with common Sand, and put to the Sand in one of them one, two, or three pounds of that inverted Salt, (according to the bigness or smallness of your box) and in the other box let there be only Sand. If now you sow divers seeds in each of the Sands, and set them in the air, moistening them with Rain-water, those seeds will indeed grow out of both the Sand boxes and get increase; but yet that which grows where it has been sprinkled with Salt is far fuller and perfecter, insomuch that it will hold on its growth till it comes to its utmost ripeness, whenas the other seeds in the other Sand box will by little and little perish and die.

It evidently appears from hence that the faculty of growing and increasing, in all things proceedeth from Salt only. If so be therefore, that Pease, Beans, Oats, Barly, Rye, Wheat, Wine, and all kinds of Fruits, do grow, and are increased by the benefit of Salt, it necessarily follows, that Salt is the subject and universal nutriment.

But that it may be understood how the common Salt (which otherwise

is wont to corrupt or extinguish all the faculty of growth in those things it is mixed withall is to be inverted or turned in and out, that its hurtfull corrodng property being put off it may put on the nature of Alkalies or urinous Salts, I do here covertly set down the manner of the operation, so that it may remain hidden to mine enemies and be communicated only to my friends.

Take common Salt, & etc. (See the Preparation in Appen. 5 p. PROSPERITY OF GERMANY).

Let them be well heated red hot together at the fire, this done, the salt will be dispoiled of its Acrimony and get an urinous property, and being used in a due quantity instead of Dung, to barren Grounds, causeth that the seeds sown therein produce much fruit. But this kind of dunging requireth frequenter Rains than that which is done with Dung; and therefore it may be better and more commodious in moorish places than Beasts Dung, if it may be done, which conjoins the said salt, and produceth the most wished effects.

But especially the said salt is far better for Vines and Fruit Trees than Dung is; for it gives to Grapes, Apples, Pears and such like Tree-Fruits, a far better savour than Dung is wont to afford: Besides, this benefit accrues to Vines thereby, that being sprinkled with that Salt, they have oft times nutriment enough for twenty years, and do every year bring forth Fruit most plentifully; whereas the nutriment of dunging will scarce suffice for five or six years.

Further, That Salt may be far easier, and with much less costs carried and transported into the high Mountains than Dung can; for a far greater quantity of Dung is required than of the said Salt, which said Salt diffuseth it self far larger, or goes much farther than the Dung, and dures longer.

I did this very spring time last past, put such an inverted salt to some half dead Vines, which being planted in a lean sandy ground could scarce grow up a fingers heighth, and they presently began to flourish, and grew up so fast that the growth was day by day perceptible. When therefore on a certain day I was shewing some Friends of mine the melioration of metals, in my Laboratory, to be effected by the help of common salt, as they were wondring at the thing, I shewed them those Vines afore my Laboratory, that sprang up from the half dead stocks, and they measured some of the branches of the Vines, found that in two or three months they were grown some 6, 7, 10 and 11 foot long, and the stocks or stalks whence they grew were two or three times thicker than

at first; which great change or transmutation in the Vines, proceeding from the salt, would be more admirable and profitable than that of metals, if we did not look upon that transmutation of gold with such covetous eyes. And forasmuch as this transmutation spoken of, was observed in the month of JULY, and that there are almost yet three months for Vines to encrease and grow, any one may easily conjecture what an encrease the wood (or branches) of the Vines would have in the space of a whole Summer.

But let this suffice concerning the inversion of the common salt, being a most profitable promoter of the growing faculty in all things; the which things I was necessitated to declare here in the end of this small work. That so I might demonstrate those things which I asserted at the beginning of the same, viz. that in salt lie all things hidden, and by the seeds of things and the help of the Sun are rendred visible, palpable and essential.

An Admonition to the friendly Reader, or a Proposition not proscribing or tying to any body, whereby is shown how much benefit the Country may in general obtain by my not chargeable extraction of Gold and Silver out of the fugacious or flying Minerals.

That my inventions may be in many places profitable for the whole Country, I judged it worth while, briefly to declare my meditations or conceptions thereabouts; and to make a declaration of the way or manner which I judge it may most exceeding profitably be done by.

First of all, I suppose it is sufficiently well known that Princes and Noblemen are occupied or troubled with otherguss burdens and business than to employ or busie themselves with the care and enquiry after the metalline mine-pits, that are here and there in the Countries subject unto them. And if they should commit the care of these things to their servants, 'tis likely that they would rather pass their time in feastings or merry meetings, than in a painfull search of Mines and metallick Veins in the woods and mountains. And as for the subjects themselves, seeing they are altogether rude and ignorant of such arts, by what means, and with what success they can undertake such kind of Labours, any one may easily guess. These are the Causes why things of such great moment are let slip without any profit at all, and are plainly neglected. But in my judgement, though it be but slender, any Prince that hath many Subjects under his obedience, may every year gather store of gold and silver, and that without costs, if he would but only cause a small Laboratory to be erected, wherein the poor Mines

may be extracted with due waters; and leave given to such of his subjects as breathe after the knowledge of such Arts, to frequent such a Laboratory, and there to learn such Arts, with this PROVIZO, that every one should bring the gold, silver and copper boiled or gotten out of the poor minerals by the help of the said extraction, into the Money-shops or Coining-house, at such a rate as they are every where esteemed or valued at, and not transport it out of the Country. Now by this means, not only the chief Magistrate would without any cost and labour get no small profit by the money, but likewise every body would to their utmost, labour in the inquisition after such poor Mines, that he might get Gold and Silver, and other Metals, out of those poor metallick Veins, and get gain for him and his. But now if the Prince or Magistrate will not permit his Subjects the exercise of such a work, but keep all to himself, any one may easily conjecture, that not so much as a man will set about searching after such Mines, but will rather hide them, especially if the Magistrate (as is wont to be sometimes done) would constrain his Subjects to such kind of Labours.

This (according to my simple opinion, no ways prescribing to any what to do) would be the readiest way, without hurting of any man (nay rather it would help and assist many a man) of furnishing our Country with Gold and Silver Coin, which Foreigners have made it bare of. But this will not be by any way, unless the Magistrates themselves do make a beginning, as to the institution of such a work, by this means inviting and stirring up their Subjects to undertake such like Labours, which will bring great Treasures even to the whole Country. By this means may rich Mints be set up in very many places, instead of those which at this time afford Money or Coin so sparingly, and no small portion of Copper too, mixed with it.

These few things was I willing to advise for the sake of the good of the whole Country; only laying down my simple opinion without prescribing a rule to any, hoping, that no body of what rank or condition soever they be, will take it otherwise than well.

Secondly, Every Prince and great man would mightily promote the common welfare of this poor, if he would but take the care of shewing the way of so inverting common Salt by one hours heating it red hot, and bringing it to that pass, that it may be made use of instead of Cattles dung, for the fatning and bettering of barren Vineyards, unfruitfull Gardens, and other Fields that are backward or slow in bearing Fruits: for verily, even from this very Art would redound much profit to some

Countries. For many Vineyards here and there, and many Grounds do want due tillage because of the scarcity of Dung, whereas otherwise they would prove very profitable both to the Subjects and Magistrates, if they could be fatned and made fertile by this kind of way.

Besides too, all Wines would be had in much more plenty, and be of a far sweeter and pleasanter taste, by such a medium, than if the Vineyards and Fields were dunged with Beasts dung. But as touching this thing, see more in the continuation of my MIRACULUM MUNDI.

The end of the First Century.