

THE
MINERAL WORK:

THE FIRST PART.

Wherein is Taught the Separation of

G O L D

Out of Flints, Sand, Clay, and other Fossiles by the Spirit of Salt; which otherwise cannot be purged. Also a Panacea or Universal Antimonial Medicine, and the use thereof. Invented and published in favour of the Studios in the
CHYMICAL ART.

By John Rudolph Glauber.

A Preface to the Reader.

THere will be some without doubt, because the Edition of other Pieces (of which I made mention in some former Treatises a few years past) hath been hitherto by reason of diverse journeys, and other various impediments, neglected, who will think (having no knowledge of me) that I am unable to perform my promise; and there are others, who knowing my Condition, and the Contumelies of my Enemies, will fear that I being diverted from my purpose by these Reproaches, will make void my secret promises. But I have resolved to stand to my promise, that these men may see that I am neither moved nor altered with the Taunts of the Envious; but that they may be convinced by real demonstration of my secrets; some of which, I shall now for the publick good endeavour to communicate. And although the ingratitude of the World be cause enough for my silence, yet the uprightnes of my Heart would not permit me to conceal those things, notwithstanding the malevolent and ungrateful. Beside also the following Reason moved me, because there are some ambitious men, who falsely boast of the knowledge of diverse of my secrets; wherefore, some have been moved to think that mine are not my own, but the Works and Writings of others; by which means I have been deprived of my due Praise, being attributed to another. And this I have often found, that one or other having by entreaties obtained a secret from me, have afterward through Ostentation ascribed it to themselves. There are others also who fear not to reproach me, and my Writings, as though they were trifles, not attaining their desired end, who (rather than I who have written plain enough) are themselves to be blamed, for being ignorant how to work. Such and other things might deter me, but I would not omit the publishing of these Writings for those mens sake who are pious and honest. Wherefore I openly affirm, that these things published by me are not on-

ly no trifles, but most true, and also my own, and not the Invention of another. And I call him a lyer, who shall boast himself the Author without any of my help. But of these enough! yet I would have the Reader know, that for the meane of the stile, I am not like many Writers, who more look after the flourish of words than the thing it self; I rather seek that my Neighbour may profit by me. Wherefore, for his better understanding, I had rather be prolix in words, tedious to delicate ears, than write in obscure brevity adorned with Rhetorical figures. For I know that the studios in the Art do affect a prolixity, plain, and distinct information or instruction, rather than a Ciceronian or obscure. And now, in the Name of God, I will begin my Work which is most profitable to all, and will faithfully communicate and publish the same in that manner as it was written by me in my travel, under the title of The Mineral Work, divided into three parts. In the first of which shall be taught how out of sand and golden flints, corporeal gold may be drawn by the help of Spirit of Salt. Which secret, although it may seem small, yet it is that whereby (a knowledge of the true Stones and true sand being obtained) life may be sustained, and also the cost laid out may be recompensed, as shall be proved in the following parts.

In the second part shall be treated of the original and generation of metals, and also of the destruction of Minerals and Metals.

In the third part shall be demonstrated the possibility of metallical transmutation by Nature and Art, and that with divers reasons: which demonstration is not (unless I am deceived) performed yet by any, being the foundation of all metallick Philosophy, and the Golden Crown of all my Writings. Which God grant I may perfect; to the glory of his Divine Name, and the good of my Neighbour. Amen.

THE



The First Part of the

Mineral Work.

A most profitable process of the separation of Gold out of Flints, Sand, Clay, red and black Talk, and other Fossiles, containing very subtle Gold, thin and spongy, which otherwise cannot be separated, either for its scarcity, or the obstinacy of the Mineral, by reason of the great Cost to be bestowed; viz. very easily with the spirit of Salt.

KNow first, (good Reader) that not all Sand, Clay, nor all Flints, and other Fossiles do contain Gold, but only some, without the knowledge of which, this secret availeth nothing. And because the knowledge of these are very necessary for the Artist, I will shew how they are to be proved, whether they contain Gold or not, that he labour not in vain, but that it may prove to his commodity or profit.

The madnes of Men, searching after uncertain things is wonderful, but neglecting certain, although exposed to every ones view, for many seeking the perfection of Metals to gain Riches, are busied about an uncertain thing, because of a thousand scarce one obtains his end: altho' they may be perfected and purified, I mean imperfect and impure metals, so that good Gold and Silver may theese be extracted, but this Art is given to few; neither is every one fit to perform the business; because it requires an ingenious and experienced ARTIST: But the thing which is certain, may be performed with small cost and labour by any vulgar Chymist, having any knowledge of the Art of fusion and separation, being an ingenious man, and not seeking things too high or too gainful at the first tryal. Be cautious therefore in the extraction of the aforesaid Stones, for if thou shouldst with the spirit of Salt extract many of them, having no Gold without doubt thou shalt find no Gold there: And if thou shouldst extract some contained in them, and if thou be ignorant of the separation of it by Antimony, thou canst these hope for no profit.

First then, the knowledge, viz. of those stones is necessary afterward of that separation by Antimony. Impute therefore the fault, if thou erreft, not to me, but to thine own ignorance, if thou knowest not to extract the Gold; for I have written clearly, though thou shouldst not know any thing that were omitted. And I before admonish

thee to be cautious in thy work, lest thou labour for nought: For it is certain, and no fiction, that in many places there are found golden flints, and golden clay, and sand, oft-times abounding with gold. And if they do not abound with it, yet may they be extracted with profit: but the flints abounding with it are extracted with greater gain. There are also found whole Rocks and Mountains of Gold, and great Mountains filled with golden Sand and Clay, not returning the charge of washing, either for its too great rarefaction or spungiosity and levity; by reason of which, its washed away with the sand; all which, how poor soever, may be extracted by the spirit of Salt with gain, and by Antimony fixed and purified. In brief, this is such a secret, by which, no man can be an impediment to another, as in other mechanical operations, whereof no man may be alhamed; for God did therefore create Gold in the earth and stones, that we may therefore extract it to the glory of His Name, and the benefit of our Neighbour; neither hath he forbidden the true and genuine use of it. I say therefore in truth, that I have here described this Art, how ever despised by the ignorant, yet of greatest moment, and almost incomprehensible. Now consider the thing a little farther, thou shalt find every where in the earth great Treasures to be hidden, which only through ignorance are not discovered. Truly it is known to all, that there is found golden sand and clay in diverse places, which for the aforesaid Reasons are left unlaboured, but by this our Art may easily be worked upon.

There are found also silver Mountains, out of which, silver cannot be extracted for the little weight it yields: there is also found in many places a certain yellow or reddish earth, or such like clay, which though it contain store of silver, yet it cannot be extracted with profit by this way, yet separable, with gain, but not by the spirit of salt, which

D d

which leaves it untouched, but by some other thing, every where to be found in plenty, of which, for some reasons we shall speak nothing here.

And this way of separation makes much for the poor mineral of copper, which with profit cannot be worked upon by the vulgar way, to be separated from the Copper, afterward by ripening it into a better metal, or turning it into verdigrise for want of a better art, which business also may well and honestly more than maintain a family. This way also may the rejected dross of the gold, silver, and copper be with profit separated. But because I have decreed to handle here only the extraction of gold out of stones, therefore these menstres which are used in the extraction of copper and silver, are deservedly omitted, and reserved for another place, where sometime they shall be delivered, to wit, if I shall see that this demonstration shall be accepted in mens eyes, which more very excellent shall follow. As now I have undertaken a more excellent matter in love to my country, by which it may appear, that *Germany* however reduced to want, is yet rich enough, if it would but at last look upon its hidden treasures. There is no need to offer a fore-chewed bit, for demonstration is sufficient, neither will we obtrude a good upon the negligent; for to the ungrateful the best things are unacceptable. These therefore being waved, in short we will give the demonstration and extraction of those flints, not doubting but the expert and experienced, though the sluggish may not, will thence reap profit, and give God the praise.

What belongs then to the aforesaid stones, out of which gold may be extracted, thus the matter stands. All kind of flints for the most part have invisible gold, sometimes visible and invisible, volatile and corporeal together; but many commonly contain impure iron-like volatile gold, and also mature, and a few, sulphureous and copper-like.

Stones which the *Germans* call *Quartzens* and *Hornstein*, containing pure and corporeal gold, although mixt with silver and copper, may be burnt and ground, and extracted with Mercury, and if they abound with gold, be purged by flux; which labours are usual with diggers and dealers in metals, of which I do not intend to write, because others have heretofore writ of them. But those flints *Quartzens* and *Hornstein* every where almost to be found, containing but a mean quantity of dispersed iron-like Gold, Marcasite-like, and that either fixt or volatile, cannot be separated with gain, to wit, neither by Mercury nor by Flux, wherefore they are neglected by the Miners, either out of ignorance or for the intolerable costs. But I having tried those base stones, that how little gold soever they possess; yet may it be separated with great gain. I would not intermit to publish this knowledge for my Christian neighbours sake, not doubting but this publication will be profitable to very many. For I am not ignorant that there are as well learned, as unlearned, noble as ignoble, secular as spiritual, either by war or otherwise exposed to poverty, so that they are hardly able to maintain their family, &c. and for their sakes and others in want. I have published this secret, which rightly handled may bring no small gain yearly, but especially where those stones are plentiful, and also that spirit of salt, whereof the description is given in the first part of the Philosophical Furnaces, and hereafter there shall be given a better, if nothing hinder; in the mean

while use and enjoy these. And if it happen so that thou canst not rightly perform all things of the aforesaid tractate, blith not to learn the manual Operations [which cannot be so exactly described] from those that are experienced, lest you hereafter unprofitably spend your labour and costs. As for those stones know that very many of them are found in several places, chiefly in those that are sandy and mountainous, but in some more and better than in others: for there is seldom seen sand without flints, and oft-times the sand it self, though very little doth not want Gold. But they are very likely to be found on the shores of Rivers, where the waters washing away the sand from the flints they are found in great abundance, though they are not so easily known by their outside, as those which were found clean in the sand, because they are covered with slime. Wherefore they must be broken with a hammer, that that may be seen which is in them, which may better appear if they be burnt, and quencht in cold water. For the stone retaining its whiteness when it is burnt and quencht doth contain nothing; but acquiring a redness it shews there is something in it, and the more red it is the better token it is.

N. B. But this is not to be understood of sandy stones, waxing red in some part, in the fire, containing no gold, but of flints out of which by a mutual percussion fire is brought forth, which the more pure they are the purer gold do they yield. There are also flints out of which fire is forced by percussion being red in the fire, which contain no gold but Iron; which you may know by that clear redness before the burning, which being burnt is changed into an obscure redness, not shining and crude: but the flints containing Gold, being burnt do acquire a fair golden yellowness, or reddish colour, as if they were covered with gold, and that through the whole substance if they be broken in pieces. And these give a pure gold, but those other yield a red extraction like blood, yielding not gold, but the purest and malleable iron, good in Chymick uses, (but chiefly for silver to be cemented and exalted) for gold is seldom to be found in them; the which is well to be observed lest thou draw out iron in stead of gold, and so lose thy labour.

Also the best stones containing gold, are those which are white and shining, here and there throughout having in the whole substance green spots and lines, red, yellow, skie coloured and brown. There are also black flints out of which fire is forced by percussion, having gold and iron, which may be separated with profit, yielding sometimes plenty of ironish Gold, which may in like manner, be separated of which afterward.

They are very good flints also which being burnt retain a whiteness, with veins green, skie-coloured, and such like, neither are they disesteemed which burnt, have black spots, and not veins.

But the stones (*Quartzens* and *Hornstein*) although they in burning are not altered, yet if there be seen before gold volatile and spiritual, they by separation of themselves yield gold.

Gross and subtle sand having light and yellow gold, yields in the burning a skie-coloured smook, and is exalted in colour, viz. brownish: but that hath nothing which is not altered.

Subtle earth, yellow or red, passing through sand or a mountain like a vein contains also gold, which is for the most part volatile, and not mature, flying away in reduction, having ingrels into silver and other

other metals, and therefore for this reason separable.

For thy better knowledge thou mayst prove the stones, with white fusile glass, which thing is treated in the fourth part of the Philosophical Furnaces, that thou mayst not have cause to impute the fault of thy error to me; therefore I would have thee understand, viz. that all stones contain not gold, neither in all is it separable by the spirit of salt: they are therefore to be known before they be applied to the work.

Now follows the preparation of flints; and the extraction of the gold contained in them, by the spirit of salt.

First the flints being made red hot in the fire, they must be quencht in cold water, after taken out and cooled, and finely powdered.

N. B. When they are broken in a Mortar the better parts may easily be separated from the baser; for while they are finely powdered, always the best part goes into red powder first, the worse part thicker and harder, containing little or nothing, being left; And if they be coarsly powdered and sifted through a fine sieve the more subtle part like red powder goes through the sieve, the unuseful part being left in the sieve like white dust, which may be cast away: and if yet some redness appears, it must again be powdered in a Mortar, and the better part shall go into a red powder, the baser part being left in the sieve hard and white which is to be cast away, but you must observe that not all and every of these flints are thus separable by powdering; for some being beaten do every where retain the same colour, without any separation of the better parts, which you must finely powder and extract in the whole substance, but they (viz. those separable) are more easily extracted, because all the gold contained in one pound for the most part may be gathered out of three or four ounces finely powdered and separated in the aforesaid manner; so that it is not needful to extract the whole stone, nor to spend so much spirit of salt. But sand and clay need not such a preparation, but without a preparation being made, before, are extracted by the assuasion of the spirit of salt.

R. then of the flints as aforesaid prepared and separated two, three, four, six pound, to which being put into a cucurbit of glass whole (undivided) pour of the spirit of Salt to the depth of three or four fingers breadth, and place it in hot sand or *Balneo*, that there the spirit of salt may be hot, and may extract the Gold, and so let it continue for five, six or more hours space; until the spirit tinged with a deep redness, can extract no more. And perchance at the first time (though seldom) it may not be tinged with so great a redness, then must you decant that same imperfectly tinged spirit, and pour to other flints after the manner expressed, prepared in another cucurbit, and place it with the flints in a moderate heat for to extract the gold; which done pour it off again, and pour it to fresh flints, and do so often until it hath drawn to it a sufficient quantity of gold; which afterward thou must keep, until thou hast gotten a greater quantity, and all the Gold may be separated at one time from it, as afterward shall be said.

Which done pour to the reserved flints in the first cucurbit, a fresh spirit of salt, and leave that so

long in heat, until it be coloured, and extract the gold that is left in the flints, and was not at the first time extracted; which spirit being afterward decanted, pour it to the flints reserved in the second and third cucurbit, to extract the residue of the gold which was left at the first time; and so consequently to the others reserved, until the spirit be sufficiently coloured, and can attract no more; which afterward pour off and put it to the first, which was reserved. You must also pour a fresh spirit to the remainder of the extraction for the extracting of all the gold. At length pour to it also common water to wash away the tinged spirit of gold remaining in the flints, that none of the Gold may be lost.

And this labour is so long and often to be repeated till there remain neither flints nor spirits; in the mean while you should cast away the flints extracted and washed, that the cucurbits may be filled with fresh flints, and so continue the work; and if there be no more spirit left to continue the extraction, you may then separate the extracted gold from the spirit, which is done as followeth: but first, you must have plenty of glass vessels, or retorts of the best earth, which may retain the spirits; which you may so far fill with the impregnated spirit, that the spirit in the abstraction run not over, which done, it is to be extracted in a dry *Balneo* by little and little from the Gold, which spirit ye may use again in the aforesaid work. And the Gold which is left in the bottom of the vessels, is to be separated from the vessels with a crooked iron wier and (kept being very like to red earth) for its use, until thou hast gotten a good quantity, viz. so much as sufficeth for separation and purgation (of which afterward) to be made by Antimony.

N. B. But when thou shalt extract red talc with spirit of salt, red or black granates, *Smiris*, or *Lapis Calaminaris*, and other *Fossiles*, which beide fixt Gold contain much immature and volatile Gold; you must in the abstraction cast in a little iron, viz. to the solution, which retains and fixes the gold which otherwise flies away in fission. Wherefore those solutions and extractions of Talc and other things containing volatile gold are better extracted out of iron Cucurbits by earthen alembicks than out of glass and earthen retorts, because then that volatile gold doth attract only so much thence as is sufficient for its fixation; which iron is after easily separated by the Antimony from the gold, as shall after be taught. And this is to be noted, that not the whole granate is soluble in the spirit of salt; although it be long left in digestion, always retaining its former colour; wherefore there is a difference to be made, or a preparation to be learned, requisite for the solution of the gold contained in them.

And you must extract Talc not with too much or excessive heat, lest its substance be totally dissolved in the spirit and be a hinderance to the work; because there is little profit then, for it is therefore appointed, that a little gold dispersed in a great quantity of Talc may be reduced into a little compass that it need not that all the quantity of Talc be made fusile, because it will thereby procure loss. But there is no danger in flints, because the spirit of salt doth not dissolve them as it doth Talc, but only extracts gold from thence, the stony body being left. The *Lapis calaminaris* may also otherwise be handled in the extraction, and fixation than granates

nates, flints and Talc, because it is almost wholly soluble in the spirit of salt; which work is not here to be handled, because the extraction and fixation is taught in a peculiar way in another place, neither do I mean to treat of it here, but only of the extraction of gold out of flints every where to be found. And this is the way of extraction of Gold out of flints and sand in heat by the spirit of salt, to be done in glass vessels. But there is another way too, which is done in cold without glass vessels, which I thought worth the setting down, that in the aforesaid work you may choose which way you please, this or that, and it is done as followeth. We must have in this way store of earthen funnels well burnt, and not sucking up the spirits; for want of which we must have such as be of strong glass: there must also be a form with many holes in it to receive the aforesaid funnels, under which must be placed glass dishes or basons to receive the strained spirit.

Here follows the work to be performed by Funnels.

The Funnels being put in the holes of the form, you must first put a big piece of flint in the straighter part of the Funnel, to which after put lesser pieces, and on these again less, viz. as much as serveth to fill the straight part of the Funnel, of which the larger part is after to be filled with powdered flints, but so that there be left a depth of three or four fingers breadth for the spirit of salt. By this means those greater pieces in the lower part will hinder the passage of the fine powder in the Affusion of the Spirit of Salt.

Which being done as it ought, pour to the flints contained in the Funnels the spirit of salt, two or three fingers breadth in deepness, which forthwith shall work on the flints, and attract their gold, and then run into the dish or bason set underneath: and because for the most part at the first time, some of the powder passeth through with the spirit, you must so often pour the same spirits on the flints until there be a stoppage, and the spirit come clear; afterward pour this spirit into the second Funnel with flints; and then into the third, and so consequently, until it be strained through the flints of every Funnel; or till the spirit be sufficiently coloured, which you must keep until you have gotten a sufficient quantity to be distilled by retort for the separating the spirit from the gold. Then that first spirit being strained through the flints of each Funnel according to order and collected, pour a fresh spirit to the flints of all the Funnels according to order, beginning at the first, till you come to the last, until that be sufficiently coloured; which being done, pour a fresh spirit of salt to the flints (according to their order) contained in every Funnel. And when you see the strained spirit not to receive a tincture, it's a sign that all the gold is extracted; and then pour on no more spirit but common water, that it may be strained, and the water will attract the spirit of salt left in the flints, that none shall be lost, which acidities water save by its self to the same, and the like uses: which being done, take out the extracted flints, and fill the Funnels with fresh as before, viz. flints, and do this so long as you have to be extracted; and do this so long as you have to be extracted. But you must not pour a spirit not sufficiently tinged into the spirits that are well coloured and impregnated with gold, but keep it

a part, and pour it still to fresh prepared flints, according to order, contained in divers Funnels, viz. until it be sufficiently coloured; and being coloured, separate it by the glass retorts with the rest, extracting it from the gold by abstraction; and being abstracted again, use it to a new work like the former. And by this means with 100 pound of spirit of salt may be extracted some thousand pounds of flints prepared, and separate the gold contained in them, which otherwise by fusion cannot be done. But the chief point consisteth in the extraction (the spirit of salt being well and rightly first administr'd) viz. that the spirit may not be wasted, whereby many stones may be abstracted with a little spirit. But this caution is to be observed in this extraction, which is done in cold, that it requireth a stronger spirit of salt than that, which is done in heat by cucurbits, or else the business goes on slower: but with a stronger spirit by this (the cold) way they are extracted sooner and easier than by that which is done in heat; and neither so dangerous, laborious or costly: this extraction then, viz. the cold, requires a stronger spirit of salt (which is worth noting) than the hot.

And this is that way, by which those golden flints, and other golden fossiles are prepared, and with the spirit of salt are extracted, and by which it is again separated from them: Now shall follow the manner of purification, viz. of the Gold left in the Retort.

N. B. The pure gold being extracted out of the flints, not the iron-like, there needs no great business of purification; for thou mayst purify it by fusion with borax, or with the fluxing powder made with the equal weight of nitre and tartar: but if the gold extracted out of flints be mixt with iron, as for the most part it is, then you must not fuse it with Fluxing Powder, because it is not thereby purified, or rendered malleable Gold, but separate it by lead, by which way it is purged and made malleable. And if such Gold have any sulphureous impurity mixt besides, it is not to be separated with lead, because it is then partly turned to dross and other impurities by the iron with loss; wherefore it is to be purged with three parts of Antimony and separated; by which means nothing is lost; which is the best way of separation and purification of Gold, viz. the ferrous, without which it cannot otherwise be separated without loss.

How impure Gold may be separated and purged by Antimony.

This work is necessary to be known, if you think to have any benefit by the aforesaid extraction of flints by the spirit of salt, which without this separation and reduction is of no moment: and what profit I pray by the common way cannot be purg'd, requiring the industry of the Artist in fusion, whereby it may be separated from its sulphureous faces and fixed? For it is easie to conjecture, that such spiritual and volatile gold mixed with iron, by that common flux is not reducible into a body, but rather into dross: for experience testifies that gold dissolved with the spirit of salt, end also iron, or any other sulphureous thing, the spirit of salt being abstracted cannot be reduced whole by the vulgar flux made of Nitre and Tartar, going

going into dross: which if it happen to corporeal, pure and fixt gold, how shall it be otherwise with that which is incorporeal, unclean and volatile? for the Gold being ironish commonly, which is extracted out of stones, and iron having great affinity with gold (by reason of which being nearly united, it is difficultly separated, so that it easier goes with iron into dross than parted from it) you must necessarily make a flux not only attracting that impure gold, but also purifying and cleaning it, that which Antimony alone doth, which with its combustible fusible Sulphur easily caters that ironish Gold: But by its Mercury it attracteth the pure corporeal gold, and cleanseth it, and separates it from all dross without any loss; wherefore there cannot be a better flux, but requiring industry, or an ingenious separation of the Antimony from the gold, without wasting the gold; which is done as follows.

And first your ferrous gold, that is left in the abstraction of the spirit of salt, must be finely powdered in iron retorts or pots, and mingled with it two or three parts of Antimony powdered, and mixt in a very strong crucible filled and covered, and then fused in our fourth furnace, until that flow like water; which soon appearing, pour them together into a heated Cone, smeared within with wax, and when they be cold, separate from the dross the *Regulus* (having most of the gold) with a hammer, and keep it by it self. Which done, you must again melt the drossy Antimony (as yet containing much gold) that was left, in the crucible, and add to it a little filing of Iron, mixing them with a crooked wier, and that Antimonial combustible sulphur will be mortified by adding iron, and will yield a *Regulus* containing the rest of the gold, which, as a regard is had to the quantity of iron added, will be more or less, and for the most part will answer in weight to the weight of the iron; then cast the mass (well flowing) into a Cone heated and smeared on the inside with wax, which being cold, separate again the *Regulus* from the dross with a hammer, which also is to be kept by it self; melt the dross again, as before, and precipitate it with iron, and extract the *Regulus* thence, which keep by it self, for it contains gold and silver mixt. For the best gold is precipitated the first time, but afterward the baser sort, and at last only Silver. Wherefore every *Regulus* is to be kept by it self, that the purest gold may be a part, and the silvered gold by it self.

N. B. And if the Antimony, by the addition of Iron, do lose its fusibility, and therefore can yield no *Regulus*, it's required, that you at every time when precipitation is made, by adding iron, that you do also cast in some *Ally*, to make the mass to melt in the crucible and precipitate the *Regulus*. All the gold and silver being reduced into three or four *Regulus*'s, you must keep the drossy parts by themselves that were left, of which we shall speak hereafter.

Now follows the way of separating the Gold and Silver from the Antimony.

THE aforesaid antimonial *Regulus*'s may many waies be purged, and first by help of Bellows on a plain earthen test, as the custom is with Goldsmiths when they make Gold fusile by Antimony, which labour is tedious and dangerous; which can-

not be done often without the loss of health, nor in great quantity; wherefore when a better way is known, 'tis a folly to do it so. The *Regulus*'s also may be purified by lead on a reffe, which work may be done in a great quantity, but it requires abundance of coals and lead, where the Antimony cannot be preserved: but it may be done with gain, and is to be preferred before the former waies: Thou maist if thou please calcine the aforesaid *Regulus*'s to ashes, and then fuse them; which way the gold and silver may easily be drawn out. Thou maist also fuse them in a crucible, and by the addition of some salts, separate the antimony from the gold and silver, turning the antimony into dross, which being separated, those are found purified and malleable, which though it be the easiest way, it is yet also very dangerous, for the salts often, if you do not warily proceed, do spoyle much gold and silver, and sometimes leave gold unmalleable, and fo double the pains.

But he who knows how to do this by Nitre only, he may with great gain, and in a short time, purify a great quantity of the aforesaid *Regulus*'s without loss of the gold, silver, or antimony. There are also other means for the doing of it which to relate were tedious and indeed impossible. Wherefore I will set down the best of all, most profitable in the separations of great quantities of *Regulus*'s. Where first is required some peculiar little Furnace with a Fire almost like to that in our first part of Philosophical Furnaces, built for the subliming of Flowers; it wants indeed a grate, but it hath little vents for to make the coals burn, that thy antimony separated from the gold, may be sublimated or elevated into sublimatory vessels. Which being rightly built and heated, let so much of the *Regulus* be cast in with a spoon as the Fire can bear, which will quickly melt and be elevated, the air being attracted by the vents, without any trouble: which being sublimed, you may cast in more, if you have more, until all the *Regulus* be separated and sublimated from the gold and silver, which are left in the Fire pure and malleable; the furnace being cold, you may take out the Flowers and keep them (of which afterwards) for uses, which way you may not only separate a great number of *Regulus*'s from gold and silver in a small time, but also keep all the antimony, which may many waies be used in Alchemy and Medicinē with great profit. Which fire is an excellent knowledge, for not only hereby may any one get abundantly, without wronging his neighbour, but also help many sick People, viz. by that excellent Medicine made of the Flowers: which is a special gift of God, for which we owe immortal Thanks. And this is, of all others that I know, the best way of separation of gold from antimony, which is not only done in great quantity, in a short time, and with small charge, but also without loss of the Antimony.

Here follows the Use of the Antimonial Flowers.

If you may take the whittest of the Flowers out of the lower hole, and keep them for a Universal Medicine; but reduce the rest (being less pure) into *Regulus* by the salt of Tartar, for divers uses, as shall be said afterward; or you may mingle them with an equal weight of common sulphur, or antimony, which being mixt in a covered crucible, melt them, and they will yield an antimony like to a natural,

tural, good to purify gold: or thou maist mingle them with other metals or minerals, that by this means they may be made better. Or thou maist use them in Chyrurgery, for they of all stiptick plasters make the best. In brief, the aforesaid Flowers may many waies be used with good gain and success.

The aforesaid antimonial drofs may also be reduced into Flowers, and used in the same manner; which indeed are endowed with excellent Properties, as they which are made out of *Regulus's*, because in that fusion and separation of gold extracted out of Flints and Talc, the gold only that was fixt and mature, was separated from the *Regulus's*, (the immature and volatile being left in the drofs) and elevated with the Flowers: It follows thence, that these are better, as well in medicines as in the transmutation of metals.

Or, if thou wilt, add to the antimony (as aforesaid used) old iron, to reduce it in a furnace, and take the *Regulus*, having gold and silver, which may therefore be used in other operations of Chymistry, where there is need of *Regulus*, as we may shew hereafter. But the drofs doth yield a *Regulus*, viz. in a very strong Fire, and a Furnace with a peculiar separatory by abstraction, which although it contain not gold, yet it may be used not without gain, as if it be mingled with Tin in fusion, it procures to it a hardness and sound, useful for fashioning divers sort of Household-stuff, which is not so easily darkened as the common Tin, or if thou wilt not, thou maist make weights of it.

Hitherto we have treated of the extraction of gold out of Flints, and of its putrification by antimony; now we will teach you how to use the rest of the antimony, as well in the perfection of base metals as in medicine, as well for the preserving of Health, as the curing of Diseases.

But seeing we have made mention of an Universal Medicine, to be made out of antimony aforesaid, I would not have thee think that that is such as can take away all distempers in general, without distinction, which vertue is only ascribed to the Philosophers Stone, but not by me to this medicine; to which I attribute no more than I have tried: But this in truth I dare affirm, that there is, besides the stone, scarce any comparable to it; for it doth not only preserve the body from divers Diseases, but also happily frees it from the present, so that it may deservedly be termed a *Universal Medicine*.

The Preparation followeth.

Of the flowers purified from the drofs a pound, viz. of Antimony, by which the extracted gold was purified, which for the most part are of a yellow colour, having gold volatile and immature: in defect of which, take the flowers made out of the golden *Regulus's*, being for the most part white, to which pour in a Glass Vial, strong and long-necked, of spirit of wine tartarified, three or four pound, mingle and stir them well together, and put on it another crooked pipe (within which let there be some ounces of Quicksilver, as is described in the Fifth Part of our Philosophical Furnaces) and make strong the joints with a bullocks bladder thrice folded, made wet; which dried, place the glass in *Balneum*, and give fire by degrees, that the spirit of wine with the antimony may digest, in which leave

it for 24 hours space, and so soon as the fire is out, take out the glass, when it is cold, pour off the spirit tinged red from the Flowers, and pour on fresh; and place it, as before, in *Balneum*, to digest 24 hours space, till it be red, and do this the third time, or so often till the Spirit be no more coloured, for then no more is to be poured on, and that which is coloured, is to be filtered with Cap-paper. The rest of the Flowers, after the extraction, as not requisite to this business, are to be either kept by themselves, or thrown away. But the tinged Spirit is to be abstracted out of a glass cucurbit by an alembick, to the half, from the tincture, which distilled spirit may again be used in the same work: but the tincture left in the cucurbit is the medicine, of which mention has been made.

Now mention being made also of tartarified spirit of wine, that I may satisfy the doubtful concerning that I will here also give its description, which is as followeth.

R. of Tartar 20 or 30 pound, put it in a large coated retort, and place it in sand, and distill the spirit off with a soft heat.

N. B. This work may better and sooner be performed by that instrument of our second Furnace, and because it requires great and large receivers, as being very penetrative, thou maist first apply a tin or copper Serpent to the neck of the retort, instead of a receiver, which is placed in a tub filled with cold water, that the spirits being thereby cooled, may be retained, which afterward you must abstract to the half, out of a glass cucurbit by an alembick: for the other half with the black oyl is unprofitable in this work, and therefore to be taken away. After that, mingle the more subtil part, distilled with half of the *Caput Mortuum*, of the aforesaid Spirit, calcined to a whiteness, and abstract it half again in a gentle *Balneum*, out of a glass cucurbit by an alembick, the joints whereof are every where to be well closed, and the calcined Tartar shall receive with it self the stench, together with the Phlegm, only the purer part of the Spirit, and more subtle distilling forth, which is again to be mingled with the other half of the Tartar calcined to a whiteness, and to be rectified by another alembick; the *Caput Mortuum* may again be calcined to take away the fetidness, that it may be used again. And this is that tartarified spirit of wine, with which the aforesaid tincture and essence is extracted, and truly not only this, but of all other metals, which no other can do. And if it were lawful, I would write something more of its wonderful force and vertue which it hath in purifying baser metals, with which it hath a great affinity; for it can separate the pure from the impure, of which more in another place. But when it is to be used in mending of metals, it needs not so much rectification as is required in the extracting of metallick medicines; where you may draw it in plenty out of the dry lees of wine. But there is also another tartarified spirit of wine, which may also be used in this same work, which is made after the following way: Dissolve in a pound of the spirit of wine six ounces of Crystal of Tartar; which solution use in the aforesaid extraction, in the same manner.

Of the Vertues of this Medicine.

This Antimonial Tincture doth, above all other Medicines evacuate vicious humours, and insensibly purgeth impure blood; opens any obstructions of the Liver, Spleen, Reins, and the other vessels, attracting to it all malignities, and leaving no impurities behind it. And because it cleanseth the blood, it cures the Leprosy, French-pox, and itch, and other Diseases proceeding from the impurity of the blood. By its penetrative and attenuative vertue, it resolves all tartareous humours, and evacuateth them, viz. which ingender the Gout, the stone of the Bladder and Reins; but not the Stone perfectly coagulated, only it mitigateth its pain, and hinders its increase; but being not hardened or coagulated, it attracteth and evacuateth it totally and fundamentally out of all parts; it takes away also all Feavers, and other diseases coming from the superfluity of humours. It gently evacuateth the water between the skin by siege and urine. In brief, it strengthens and purges the principal parts, and preserves them from all preternatural accidents. It is a most excellent preservative in the time of pestilence, and other contagious diseases; and of them being caught, it is a most absolute remedy, expelling the disease suddenly from the heart, and evacuating it. In few words, 'tis of all others a most excellent Universal Medicine, very profitable to both old and young, and also very safe; but warily to be ministr'd, by reason of its strength with which it is endued, which is most powerful, for it is as a great fire, which extinguisheth the lesser. Truly a better medicine cannot be desired than this, which is extracted of a very mean thing, in a short space of time, and with very small cost and pains. I ingeniously confess, I never saw its like, which I doubt not to be the best in the World. Wherefore then do we seek any other but this, viz. which excels in those things which are desired from the real medicine? But as it is most excellent, yet I am certain, that many deluded people will be offended at it, being prepared out of Antimony, a mean and despised thing, and after a plain way. But 'tis no matter, for the world will be deceived, looking after gay things, disrespecting and despising mean things, when all good things, yea, even when God himself doth rejoice in simplicity, for which, by wicked and proud men he is not sought unto. But this is the effect often, by which man is so blinded, that though he know not good, when set before his eyes, yet he is stordious of evil.

Of the Use and Dose of this Medicine.

Seeing of all medicines it is the most powerful, it had need be warily used, for a smaller dose is always safer than a greater; which therefore may after be given; the which is to be observed in all diseases of young and old. To children of 2, 3, 4, or 6 months old, against the Worms, Scabs, Feavers, and Epilepsie, you need not give above half a drop with a proper vehicle, which you may repeat three or four times a day: it killeth the Worms; it emptyeth the stomach of evil humours: it refresheth them, and preserves them from scabiness; and because it evacuateth evil and corrupt humours, it preserveth them from the small pox and measles, viz. if it be used every month; but to

children of 1, 2, or 3 years old, you may give a drop, and to children of 4 or 5 years old a drop and a half: to young people between 15 and 24 years, may be given 2, 3, or 4 drops; To stronger bodies from 25 to 50 years 4, 5, 6, or 7 drops. But the dose must be greater or less, with a regard had to the sickness of the patient. And in the Stone and Gout, may be daily administr'd in wine or beer, viz. in the morning fasting, unless the patient be very weak; for then you may give it twice or thrice in a day, and continue this till the cure be perfected; where is to be observed that he must keep a temperate diet.

In the Leprosy, French-Pox and Scurvy, every morning may a dose be given, and the disease shall totally be rooted out. Otherwise, viz. the strength being too much wasted and weakened, you may give only every other day, viz. so long as shall be need.

In the Epilepsie it may be given daily; and also in the Dropsy. In all Feavers, two or three hours before the fit. In the Plague it is to be given presently, and every day to be repeated: but for a preservative to be drunk every week once. In all other internal affects it must be given daily, until the declining of the disease; but afterward by little and little, the medicine is to be used till the disease be fully cured.

In external, as in fresh wounds by a blow, thrust or shot, broken bones, &c. every day once; with a necessary extrinsecal application of a Plaster. In old Fistulas and Cancers, it may be used once every day intrinsecally and extrinsecally, the place affected may be cleaned with Mineral Oynments. For by this means every inveterate evil, how desperate soever, is thoroughly cured, and pleasantly, without all pain.

But although this be most precious of all medicines, yet there is a *menstruum* not corrosive, which not only more easily than with the spirit of wine tartarified, a Universal Medicine may be extracted out of Antimony, and endued with better than the aforesaid vertues; so that for the charge of one royal, in three dayes time, so much may be gotten as may serve to cure some thousands of men, but also all vegetables, animals, and minerals and metals, are radically dissolved and reduced into their first matter: by which means not only very great Poysons are changed into most wholesome medicines, but also bitter things are deprived of their bitterness: for by it things are so corrected, that they do no more provoke stool and vomit, viz. which are very vehement Catharticks (by nature) being changed into most excellent restoratives. Also fetid things being corrected by it, do acquire a sweet odour. And it doth not only (which seems a wonder) dissolve vegetables, animals and minerals with those things which come of them, but also the very Glasses; wherefore you must always chuse the strongest glasses for digestion and solution, or in the defect of such, the weaker are to be changed every 6 hours. And yet it is not at all altered by those things that it doth reduce and turn into their first matter, medicinal, neither in vertue nor colour; for it always keeps the middle place between pure and impure, of which this falls to the bottom, but that swims on the top of the *menstruum*, which may again be used. In brief, it's vertues in preparing medicines cannot be enough praised. But it may be compared with the Mercurial water of *Basilus*

Valentius; and the *Alcabeft* of *Paracelfus* and *Helmont*, which I judge to be the *Fire* of the *Maccabees* turned into a thick water under-ground. It is a perpetual fire, but not always burning visibly; it is a water permanent, not wetting the hands, the *Sop* of the *Wife*, the *Philosophers Azoth*, and the *Royal-Bath*.

Which *Menstrue* though I have known some years, and have often used it with metallicks, and by it have found out many secrets, yet I never thought of its use in *Phylick*, until being askt of one who was a great Student of *Helmont*, whether I knew the preparation of the liquor *Alcabeft* of *Paracelfus*; and naming some of the vertues of this liquor in preparing Medicines, I began to betink my self, and I observed that it was my *secret Bannum*, that purifies minerals. Wherefore I presently made tryal with vegetables and animals (for I knew the Vertues thereof in metallicks) and I found wonderful and astonishing things in it, which before were incredible to me. I affirm and confes therefore fincerely, that all and every the invented medicines published by others and my self, how rare and costly soever, are most mean things in my estimation. For this *Universal Key* was wanting to us. For our vegetables and minerals, however by art macerated, cannot be perfectly resolved, and therefore we hitherto have had but part of their vertues. But now we need not much art, labour and cost, to reduce a whole body without corrosives, into the first matter, like in shape to some clear and excellent water, of its own accord casting forth its superfluous restreftrey, and becoming a most wholesome medicine, consisting of the three purest principles; the which cannot be done without this *menstruum*. For, What else could Physicians extract out of herbs than *Syrups*, *Electuaries*, *Conferves* and *Waters*? With which Preparations they were not amended, but only qualified with the addition of *Sugar* or *Honey*, because there is no separation made of the pure from the impure, or good from bad. For all are left mixt together in the *Electuaries* and *Conferves*, but in the *Syrups* and *Waters* distilled there is only some part. Extracts indeed by the spirit of *Wine* are not to be disesteemed, if rightly prepared, but they are no better than their simples; and besides, want that which the spirit of *wine* cannot draw out, which remainder, though being calcined for the drawing out the salt, which is mingled with the extract, yet that is not of much moment, for fire destroyeth the vertue of herbs, so that fixed salts, as crystallised, do perform nothing in medicine, those excepted which without combustion are made out of the juice of herbs, of which in the third part of our *Furnaces Philosophical*. But none dares extract the most strong or efficacious sort of herbs for medicine, because they in preparation are not corrected or amended.

But by this means the most strong Herbs, which without this Preparation are poysons, are matured and purified by the liquor *Alcabeft*, so that they may safely be taken against most grievous Diseases. For God did not create these herbs in vain, as some think, which he purposely created that his wonderful works might appear; and that it is possible to take away the Curse from them by a man, being freed from the malediction by the regeneration through Christ. See *Opium*, *Mandrake*, *Henbane*, *Hemlock*, and other stupefying things, how deadly they are, being cautiously used; which corrected by this *Menstrue*, be-

come most safe and excellent medicines. How dangerous is *spurge*, *scamony*, *hellebor*, *gambogium*, and other strong purgers (being administred unwarily); no man is ignorant: all which are by this way corrected, and changed into most wholesome medicines. Who, I pray, dares eat *Wolfsbane*, and poysonous *Toad-stools*, and other venomous vegetables? which are all so corrected by the liquor *Alcabeft*, as that not only they are not poysonous, but are also turned into most safe and wholesome medicines of many diseases, *Nux vomica*, *Levant-berries*, and other things that disturb the *Brain*, are by this means made wholesome; also poysonous Animals, as *Spiders*, *Toads*, *Serpents*, *Vipers*, &c. are by it corrected, as that not only they are not poysonous, but do resist and expel poyson.

N. B. Consider the *Spiders* signed with the cross, who change their skin every month, and renew themselves, which the *serpents* and *halcion* do but once a year. How great the vertue of worms, earthy and crude, &c. is in resolving tartarous humours, and the French Disease, many know; What then will they do, being corrected with this *Menstrue*? The *Cassowaries* and *Millipedes* are also so corrected, that they may more safely be used in provoking *Urine*. And if that most venomous *Basilisk*, of which there are so many fables, whose sight only kills men (which according to the letter is false) could be had, he might be changed into medicine by the liquor *Alcabeft*; as that mineral *Basilisk*, *Gun-powder* may be, which in a moment kills innumerable men; also *Artenick*, *Orpiment*, *Kobolt*, and the like; so that they be deprived of their malignity, and be reduced into very excellent medicines. In brief, its excellent vertues which it manifests in correcting of venomous simples cannot be sufficiently described. Wherefore let's worth our pains to search it with all our power, that we may prepare admirable medicines, that the sick may not for the future be so vexed with those tedious and bitter cups. Truly I cannot enough admire its great vertues, which have been hid so long. It is not a corrosive thing, and yet dissolves every thing, but some things sooner than others. It changeth and amendeth their natural vertues; wherefore it may be the comfort of *Spagyristes*, having a long time sought for rare medicines, viz. being that by which vegetables are separated and corrected, and also animals and minerals. Wherefore all conscientious Physicians may have commended to them the Preparation of this *universal Menstrue*, by the help whereof to prepare their medicines; of which the original and preparation is vile, but its vertues most efficacious, the finding out and uses abstruse. Wherefore it is not obtained, but from God, from whom proceeds every good gift. Do not think then that gluttony and drunkenness, idleness, pride, and lying, the contempt of thy neighbour, malice, avarice, with an impious life, to be the means by which it is to be obtained, for it is only the gift of the merciful God, viz. this *Menstrue*, the gate and key of which is only Divine mercy. But that thou maist know what is to be determined concerning medicines prepared out of poysonous simples, I will in brief expound that by example; for all vegetables, animals, and minerals, called poysons, making war with humane nature being intrinsically used, and therefore not undeservedly blunn'd of all, are like some powerful unquarrelable enemy, with all his power seeking the oppression and destruction of his contrary, who being checked by a mediator of no less strength, and

reconciled with his contrary, does no more (being unable before the reconciliation to resist his powerful enemies) fear the contrariety of his enemy, which now is made his friend, bringing aid for the extinguishing and vanquishing of all such-like (otherwise) invincible enemies. Even so it is with venomous vegetables, animals, and minerals, destructive to humane nature: which by the liquor *Alcabeft* (a checker and reconciler) are so corrected and reduced, that they hurt not, being deprived of their malignity and made friends with men; whereby they are not longer poysonous enemies, but very safe and wholesome remedies, agreeing to humane nature, overcoming and expelling other the like enemies otherwise poysonous and invincible, for by how much the more enemy before reconciliation it was, by so much the more help is brought by it, the reconciliation being made. There is not the like found in nature, which can so suddenly correct Poysons, and reduce them into their first matter, and bring them into very wholesome essences. Let religious Physicians then that can, get this. And so I end this declaration (not without cause set down) which will move those hearts which are not as yet hardened. This certainly is a true Philosophical correction, with which that which is malign is turned into a wholesome substance. What profits that correction, I pray, which is made by the admixture of other things, as in the mixture of *Catharticks* and *Cordials*? Truly nothing, neither can the *Cordials* do any thing but debilitate the *Catharticks*; for nature is not at once able to expel a purging-poyson, and attract a thing confortative and corroborative: For a Purge being given, forthwith that shews its strength in the body, whose malignity nature resisteth, desirith to expel it, before that it can attract the confortative; wherefore that friend is expelled, together with the disease. The same happens in the mixture of *sugar*, *honey*, and other sweet things with bitter, sharp, and tart, &c. whose unpleasantness is not corrected by sweet things, but only dulled, thereby acquiring another smell and taste, without any other essential alteration. Which correction is like to that which is made in *Taverns*; amending the air with sweet fumes, which before was infected with the spittings, spewings, and stinks of ruffick drunkards, which is to rufficks an excellent correction, attracting the ill as well as the good aromattick odour, being by drunkenness deprived of their judgment, but not so to sober men enjoying the use of Understanding, to whom that seems a ruffick correction. In this manner (not to be commended) are at this day simples corrected. But a true and Philosophical correction is done by it self, without the addition of other things, by benefit of the fire only, as well actual as potentially moist, by ripening, mending, and separating the malignity; which is done by the liquor *Alcabeft*, as it is called by *Paracelfus* and *Helmont*.

But whether this my liquor be the same *Alcabeft* of *Paracelfus* and *Helmont*, it matters not if it perform the same things.

Fire, and a fiery vertue may do much, but not by burning and destroying, but by maturation and nutrition; and feeding and moistening. Of which moist Fire, see *Arctophius*, *Bernhardus*, *Basilus*, *Paracelfus*, &c. for maturation is not done with cold things, but hot, promoting germination. And what ever Nature hath left imperfect in the vegetable, mineral, and animal kingdom, viz. accidentally; that may be amended by Art with the liquor *Alcabeft*,

which is the best way of correction, until by benefit of art, and the help of nature, some better thing be found out, &c.

And these are the vertues of that wonderful liquor *Alcabeft*, which is made use of in the preparation of medicines: And, because it is said before that it shews its vertues on metallicks also, I could not conceal them from the *fluidous*. But all its vertues shall not here be related, for it is ended with so many, that no mortal is able to number them. As for me, although by divine favour and the infraction of that excellent man *Paracelfus* (excellently in a certain place, but observed but by few; describing it, speaking of it briefly, but very plainly and clearly naming it) I did obtain the knowledge thereof, which afterward daily I did more and more encrease, so that I could hardly believe that any ever had spent so much money and pains in the searching of its vertues, for the trying of metals: yet I must needs confess, although happily I have made more tryal therein than any other; that many of its vertues are as yet unknown to me. Seeing then that its vertues and strength cannot all be tried by any man, by reason of his short life, although searching an hundred years; and that by our merciful Father only to a few; and but part of the knowledge of its wonderful and incredible force, is granted, to the glory of His Divine Name, in favour of the poor sick, which none, how learned soever, with his ambitious learning, and craft could ever obtain. Therefore some excellent gifts being given from the Father of lights, the Omnipotent GOD, to some of His Children, gratis, and out of meer mercy, viz. for some causes, I easily believe, that it is not His Will that it shall long be kept close, but be revealed to the world, to the glory of His Name, and the benefit of our poor neighbour. Wherefore I could not longer hold my peace, hiding my talent which I received gratis, though small, but communicate it gratis to my neighbour; but so that the Divine mystery may not be gotten by those ungodly abusers, but only by the worthy through divine favour. I affirm therefore expressly, that in whole nature such a thing may not be found; for not only by its help all animals, vegetables and minerals may be reduced into very excellent and safe medicines, but also be brought into the first matter; minerals and metals may be purified, washed and fixed, and so changed into better bodies. That which is worthy admiration, that in so vile and mean a subject should I have hid so great vertues, by which alone without any other art, may be acquired riches and honours, and lost health. Than which thing, what doth mortal man more need in his misery, besides the Divine Word, the comfort of the soul, than for necessary sustentation of life, soundness of body, and honest report before God and men? All these things may be had with this subject, so that one need not to involve himself into any other troublesome art or vanity of this world, having this secret, whereby all necessities may in abundance be procured: of which gift that this unclean world is unworthy, I do affirm sincerely, because it swells with ambition and avarice; for which we are not able to give God the Donor sufficient thanks in our whole life, wherefore I would have all what state or order soever earnestly admonished, that they do not use this gift from Heaven to the destruction of their souls, but in thankfulness to Him that gave it, and every way to the good of their Christian Neighbour.

Now follow the Virtues which it manifesteth in Metallicks.

First, it (*viz.*) the Philosophical Menstrue, doth radically dissolve all minerals and metals without noise, and reduces them into very safe and wholesome medicines. Out of gold it makes potable gold; out of silver potable silver, and so consequently of other potable metals; so that it may well be called *The Universal Mercury*.

Secondly, This secret Menstrue purgeth, washeth, and transmutes minerals and metals to a more noble species; wherefore it may well be called *Sapo Sapientum*, by which the saying of the Philosophers is confirmed; *I. 112. & 12. 20. abluunt Latorem*.

Thirdly, By it all minerals and metals are matured and fixed, so as that afterward the immature gold or silver incorporated with them, may by cupellation be drawn out with gain; wherefore 'tis deservedly compared to *Hermes seal*.

Fourthly, It makes metals volatile, and radically conjoyns them that they abide together, and one act on the other in the fire; it destroys and revives, kills and renews; wherefore it is compared to the Phenix.

Fifthly, It separates metals without any loss, and that speedily; but after another manner than corrosives, so that each of them may be had by themselves. For Example: Being about to separate gold, silver, copper, iron, tin, lead mixt; one, or two, three, or four of them mixt, that they may appear each by themselves, without the loss of any, you need not cupellate the mixture with lead, which way only gold and silver are gotten out, with the loss of all the rest: but by this way they are all preserved, where by turns, one after another, they are extracted wonderfully and swiftly, in half an hours time, by this sharp *Vinegar of the Philosophers*, &c.

Sixthly, By it metals may suddenly be mortified and reduced into transparent glass, irreducible, and like *Amalgam*, but reserving the propriety and nature of every metal: which in the reduction of Gold do give perfect silver; whereby is confirmed that saying of the Philosophers, *The corruption of one thing is the generation of another*; and that of *Paracelsus*, *Ex aliquo fit nihilum, & ex nihilo aliquid*. But this incomprehensible water, or permanent water, shews the truth of the Philosophers writings, generally mentioning it. In it the solution, putrefaction, distillation, sublimation, circulation, ascension, descension, cohabitation, inceration, calcination, coagulation, fixation and fermentation, &c. in their work to be done at one time and one way: In which only operation all the colours appear of which the Philosophers make mention; as the head of the crow, virgins milk, dragons blood, peacocks tails, green and red lyon, &c. There is also by it demonstrated the truth (by the liquor *Alkabit*) of that Hermetical saying, *That which is above, is as that which is beneath*, &c. and many other things are performed by its help, as making that secret Sandivogian *Chalybis*; also that long sought-for oyl of Talc.

So far (courteous Reader) hath come my Experience; neither doubt I, but by it to obtain that universal *Salvander* which lives in the fire.

These things which I write are true, and no fallacies. And though this secret be incredible to the ignorant, for the wonderful virtues it sheweth in the preparation of medicines, I would willingly pub-

lish it to the World for publick good, but on consideration I held it not meet to communicate it for certain causes. But only lest the knowledge of it should perish, and that the true (and almost extinct) medicine for the curing of diseases vulgarly incurable, might flourish, I have revealed this secret *menstruum* to two friends, *viz.* its preparation and use. [See the preparation in *Mirac. Mundi*, and *Apology against Farnor*.]

But do thou not think, because I write of these high things, that I do intend to make common the secret to all in general; not so, but I endeavour to confirm him that seeketh, and give him occasion to search this secret deeper; which being found, he shall not only find the truth of my words, but he shall daily by exercise obtain far greater things than these.

And because I have never aspired after vain riches and honours, nor never desire them; I might well be persuaded to leave to others, as yet not hating the wicked World, my troublesome labours, because in this my painful age such tedious labours are very burdensome; besides Philosophy hath pointed me another way, so that what I am able I have determined to abstain from these vanities, and to seek a perpetual good, the life of rest; but my counsel shall not be wanting to those that seek it: for besides moved with the former reasons, also seeing innumerable many vain Philosophers, as well learned as unlearned, uncessantly working, and losing their time and labour, and at last despairing, are persuaded that there is no truth in the Philosophers writings, but to be all filled with lyes and deceits; whence royal Chymistry is disgraced.

But this *menstruum* sufficeth to defend the writings of the Philosophers, without the metallick transmutations; so that I verily believe the time to be near, when the Omnipotent G O D, before He judge the World by fire, will shew His omnipotency to the Nations, by the revelation of the wonderful and incredible things of nature; of which, transmutation of metals is not the least, which in the third part of this Mineral Work I shall deliver to the last age, (being acceptable to God) to the profit of my neighbor, and for demonstration sake. Wherefore I now pass over such things, with a firm hope, that this faithful Admonition shall be received as an undoubted and infallible truth.

How the aforesaid *Regulus* of the flowers and dross of Antimony, is to be used in the bettering of coarse Metals, shall be shewn, that ART may not be abused.

THE Antimonial *Regulus*, a radical metallick humour, may help to perform wonderful things, for being reduced to a water without a corrosive, it resolveth all metals, cleanseth, washeth, and purifieth them, and turns them into a better species. So that particularly not a small gain may be from thence received. But how it may be reduced into water, and how by its help metals may be resolved, volatilized, and again fixed, hath been demonstrated by *Arcepius*, *Basilins* and *Paracelsus*; wherefore we need not here repeat their writings, but refer the Reader to their works.

But not only the *Regulus*, but also all Antimony may many waies be used in the separation of metals, *viz.* For the extraction of hidden Gold, which

not be done without Antimony; as shall appear by the following example. When you find a marcasit or other ironish fofille, that will not yield to the tryal by lead, add to it three parts of Antimony, and being well mixt, melt them in a covered crucible, and being melted, pour it into a cone; and when all is cold, separate the *Regulus*, which purge again by fire as before, and thou shalt find gold contained in the aforesaid fofille: And if it be included with more plenty of gold, for it is not all drawn out at one time, *viz.* with the first *Regulus*, another *Regulus* is to be melted, by adding more iron and salt-petre, which is also of a nature near to *Sol*. And if these marcasit fofilles are not ferreous, you must in the first fusion, add iron and nitre to them, or else they yield no *Regulus*. By the adding more scales of iron, more *Regulus* is made, and for the same use as that is, of which above in the fusion and separation of extracted gold; weights also may be made out of the dross. And thus are lapis *calaminaris*, marcasit, kobolt, zink, talc, and other fofilles separated, *viz.* containing gold.

But all gold containing iron (as that of *Stiria*, *Carinthia*, the *Granacia*, and of *Transylvania*, &c.) may this way be easily separated with profit, by the help of iron. And if the iron have no gold, yet if the Antimony have it, it may thence be separated by fusion with iron, *viz.* if it be brought to a *Regulus*. The rest of the Antimony may again be fused with new iron and new glass of more weight than it, but less than this, and be reduced into a *Regulus* fit for the following uses. Out of the dross let weights (that nothing may be lost) be made, that thou shalt have the more gain; as may appear from the following example.

When you have the Antimony, a hundred of which contains two ducats, if you will separate the gold; take a hundred [weight] divided into three or four parts, fuse it according to art, adding a little iron and salt of alhes, and reduce them into small *Regulus*'s, weighing a pound or two. Then melt the dross with half the weights of the iron in a large and strong crucible, and thou shalt have more *Regulus*'s about fifty pound or more, dross 40 *lib.* which make weights of, or else guns, &c. the rest, about eight or nine pounds, will vanish into smok. And so thou hast reduced the gold contained in a hundred weight, into one or two pounds, which thou shalt sublime by fire into flowers (leaving the gold in the fire) for its uses, but those 50 or 60 pounds of the *Regulus*'s prepared by adding much iron, they having little or no gold, you may mingle with tin for its beauty, hardness and founding, to make divers sorts of household-stuff, as platters, dishes, &c. for tin mixt with the *Regulus* looks like silver for whiteness and hardness, and sounds like it, nor is it so easily dulled as unmixt.

Now let us weigh what gain may come from the separation of the meanest Antimony. Put case that a hundred weight of Antimony be sold for three Royals (for so for the most part the *Polonian* is sold, than which, although that of *Hungaria* and *Transylvania* be dearer, yet this hath more gold) to which add 60 pound of iron, which is sold for half a royal, and the charge of coals and crucibles requisite be half a royal more: the total of the expenses is four royals, for which take two ducats in gold, sixty pound of *Regulus*, eighty pound of

dross, and one or two pound of flowers. Those 60 *lib.* of *Regulus* may be sold at the price of tin, whereof a pound is sold for a quarter of a royal, and then their whole price is fifteen royals. Then the eighty pound of refuse made into weights, may be sold at forty shillings, or at least twenty four shillings, or half a royal; and all things being considered and reckoned, as they ought, there may remain the value of sixteen royals.

And though the Antimony should yield but one ducat, and a pound of *Regulus* should be sold at the eighth part of a royal, yet the remainder would be above six royals: And in a day there may easily be two hundred weight separated by two men. And then suppose it should contain no gold (as some Antimony doth not) yet may four or five royals be gotten daily.

But when you have Antimony, one hundred whereof contains three, four, or five ducats, and iron requisite to the separation containing one or two ducats, then there is so much more gained. Then let him that undertakes this business seek for the best Antimony and iron, and he may well gain in a day twenty, thirty, and sometimes sixty royals.

N. B. And if you should have so much *Regulus* that you could not mix all of it with tin, for want thereof, then it may be sold in parcels, so that one *lib.* may go at a fourth part of a royal; by which means the daily gain may not be diminished, but may be rather increased; as may be seen by what follows. The *Regulus* of Antimony is the masculine species of Lead; whose first being is gold impure and immature: but the first being of common Lead is impure and immature Silver; as experience witnesseth; for Antimony being purged and fixt, yields gold, but the common lead only silver. And because Antimony, which is better than common Lead, is called the *Philosophers lead*, or their *secret lead*; of many fo named, but known of few; not that the thing is unknown, or of an unknown original, but by reason of its hidden proprieties; therefore I say that its virtues are not all to be known by any mortal, though he should have a hundred years to search into wonderful nature, for it is unsearchable, and the creator of all wonders, let him enjoy himself silence, neither let him glory in the knowledge of it, who hath not made tryal of it; for in it, through it, and by it, Nature and Art do strive for perfection: Of which more elsewhere.

Now follows the Use.

HAVING mentioned Antimonial *Regulus*, which is Lead and better than the common. It must also purify impure metals, wash them, separate the occult Gold and Silver in them; that which the common Lead can do, to which, if those be added, it attracteth the more impure part in the Cupel, which it converteth into dross, and draweth down with it into the porous alhes, leaving the purer Gold and Silver in the Cupel: but from some Tin and Copper not yielding to the Lead, nor willing to be washed by it, it cannot extract their Gold and Silver; neither hath any one written the way of separation by it. *Lazarus Erker* indeed hath described (and others also) the way of separating Silver from Tin and Iron, which is not to be disseemed if it be accidentally mixed with Silver, which is separable that way, but not so, being generated in, and radically mixt with them,

requiring other Lead, willingly embracing Tin and Iron, which nothing but *Regulus* can perform.

But seeing Tin and Iron do for the most part, contain much Gold (but chiefly Tin) *viz.* inseparable by the common way, it will be worth our pains to seek another Lead and way of separation; as it is apparent to Refiners, proving Tin and Iron by the common way on a test; whilst Tin and Iron melted in the Lead, do forthwith shew their stubbornness by innate proprieties and forsake it, *viz.* as a contrary rising to the top like dross or ashes, without any separation; Gold and Silver being excepted, if accidentally mixt together, which are left with the Lead; but not so being hid in their middle or center. But that the truth hereof may appear, I will demonstrate it by example: Place on a test under a tyle 16. parts of Lead, and one of Tin, after the manner of proofs, give a firing fire for to separate the dross; and all the Tin almost flying away, will at the bottom be burnt, and separated like ashes, being sublimated on the top of the Lead; not deprived of its Gold and Silver incorporated together, which afterward I shall demonstrate, when all the Tin is sublimated from the Lead, and calcined, and the test taken from under the tyle, and the rest of the Lead poured off, and you shall find after capellation no more Silver than the sixteen parts of Lead did contain before, if they had been cupelled without Tin; sometimes less, some part being taken away by the Tin in the examination: the same is done with Iron, altho' thou shouldst add Copper with glass of Lead, to retain the Tin and Iron, thereby to separate their Gold and Silver, you would effect nothing: for although some more Silver may hereby be extracted, yet that would not come from the Tin or Iron, but from the Copper: it may therefore be extracted another way, of which, hereafter.

In the mean while I will prove clearly, that the separation of tin and iron by common lead, thereby to get their gold and silver, is of no value, which being left in them, are turned into ashes and dross.

Take any tin, and reduce it into ashes by lead, or agitation, on a smooth earthen vessel (tried before by the common way, for distinction sake, which calcine well, that the corporeal tin powdered, may be calcined, or being melted, may be separated from the ashes. Then take of these ashes one part, and of the following flux, or of that a little after six parts or more; being mixt, fuse them in a strong crucible with a strong fire, until the Flux have Consumed or drunk up all the calx of the Tin, and of them both shall be made one, *viz.* yellow or red Glass, which may be tried with a crooked wiew put in: which if it seem not clear, the crucible must be covered again, and a greater Fire be given, until the Fire be perfect; which labour in one half hour is finished: which done, pour it into a brass mortar, afterward to be covered, until it be a cold, that it leap not out and be lost.

Afterward powder it, which with calx of Tin, mix the equal weight of filings of Iron; being mixt, put them into a strong Crucible (because the Flux is very penetrative) covered, and give a strong Fire for fusion half an hour: which done, pour it out, for the Tin hath made separation, and reduced some part of the Lead out of the Flux, sinking to the bottom to be separated when

it is cold, to be reduced into dross on a test, and then to be cupelled, and you shall find grain Gold drawn from Tin without Silver. And if before you weigh the calx of Tin by the lesser Hundred weight, and after that the grains of Gold, you may easily conjecture how much Gold is contained in the whole hundred weight of Tin ashes, *viz.* at the least 3, 4, 5, or 6. *Lorons*, or half *Ounces*, if thou work aright.

See then the Fault is not to be imputed to the metals, but us, being ignorant of the separation of the Gold and Silver.

You should not persuade your self by this means to get much wealth out of Tin; for I have not written this for that end, but only to demonstrate the possibility. And if thou think that Gold will come out of Iron by the fluxing powder, mingle then filings of Iron with the Flux, before thou put in the calx of Tin, and thou shalt find in so doing, that Gold doth come neither from the Flux or Iron, but out of Tin; then being hereby assured, that 'tis the Tin which contains Gold, thou mayst consider, how most conveniently that may be extracted, *viz.* with other Lead, and another way, as shall be hereafter taught. Neither think that Tin contains no more Gold than you have heard; for more there is if you can wisely extract it: neither do I deny, that more Gold may be extracted out of the Tin, but more care than this is to be given, if you desire more plenty. But Gold may thence be extracted, not only by Flux, but divers other ways, in divers weights; for what is written, is only for demonstration of the possibility, that the Gold contained in the imperfect metals, may be extracted by a secret separation.

The Fluxing Powder requisite to this Work,

Re one part of very pure and white Sand, or Flints, having no Gold fusible; to which, add three parts of Litharge of Lead; being mixt, fuse in a very strong Fire, that thereof a transparent Glass may be made of it, which pour out, that it may be cold, and reduce it to powder; which use in the aforesaid manner. But you may ask, why Sand and Flints are mingled, seeing they are not of a metallick nature: to which I say, the calx of Tin, cannot, as also other Fossiles be Examined by Lead alone, for the following Reasons, *viz.* because in the Calcination of Tin, its metallick nature is hidden, but the impure and earthy parts are manifest, wherefore it hath no longer affinity with Lead and other metals; unless the hidden parts of the lead be manifest, and also other metals and the manifest be hidden, for then they easily embrace one the other, and are again mingled well, and not altered.

What belongs to the alteration of other metals doth not belong hither; for to this place only pertain Lead and Tin, the alteration of which is demonstrated by this trial; whereby it appears to be thus.

Lead reduced into ashes, by it self, or into Litharge, and deprived of its metallick form, cannot so in this work be used without the flints or sand, for the following reason. The lead and glass thereof made by it self is very fusible and volatile; but the calx of tin is very difficultly fused: which two calxes, although they should be mingled to fuse in a crucible, yet would not be mingled, nor

being

being fused, embrace one the other, by reason of the difference of their fusibility; because the calx of lead alone being fused by a small fire, will penetrate and penetrate the crucible, the calx of Tin being left in the crucible: wherefore you must add sand or flints to the lead, *viz.* to hinder its fusibility, that it may endure the same degree of heat with those that are difficultly fused, and further their flux. For like things do mutually affect and embrace each other; as water doth water, oyl oyl, and glass glass; and metals other metals; but water is not mingled with oyl; neither are glasses mingled with metals, but metals with metals, and glass with glass, whether it be made of metals or out of sand. Wherefore they greatly err who mingle the calx of metals difficultly fusible, or other hard things with lead to prove or examine, not considering that corporeal lead hath no affinity with them: who remaining in their error, and not weighing the thing further, consequently can find nothing of any moment.

But when the calx of metals united with lead by a medium, as flints or sand, are brought together into transparent glass; then the lead being precipitated and separated from the mixture, it cannot be, but that the gold and silver contained in them must be carried away with it. This is a true and philosophical trial, and not to be contemned, for many things may be by it performed.

N.B. But this is not to be passed by, that in the mutual mixture and fusion of the glass of lead and the calx of tin, and other hard metals, one may easily err, *viz.* in the precipitation (which is done with the mixture of iron) of the gold with the lead into *Regulus*, by either the excess or defect, so that nothing may be gotten, which is committed in precipitation. For if the mixture stand long in the fire not fused, it is burnt, so that it cannot well be separated, and if it stand too long fused in the fire, the gold is attracted by the dross, by reason of the mixture of the iron, having great affinity with the gold, so that by this means nothing can be gotten: wherefore the Work is to be done warily, and with wisdom and industry. You must have a care you burn not the *Regulus* of lead with too much fire, when you reduce it into dross; for fear of attracting the gold from the iron, and turning it into dross. And although this may by Art be prevented, yet we must not presently create every one *Master of Arts*, it requiring diligence and daily exercise, besides the reading of Books. But this Secret shall other where be communicated.

This admonition then I give, that thou do not impute thy error (if thou dost err) to me, but to thy self, for what I have written is true: and do not thence infer an impossibility of attracting gold by iron, out of lead, and of turning it into dross, which is no wonder to me, though it may so seem to thee. Which he who hath the knowledge of metals will himself easily perceive. But that thou mayst be certain, try the certainty after the following manner: Take two hundred *lib.* of lead, of the lesser weight of the Refiners, put it on a test under a tyle; add eight or ten *lorons* of pure gold, of tin two or three *l.* six or eight of iron, *viz.* of the lesser weight: make them flow together an hour to make dross; as Examiners use to do; then pour it out, and separate the lead from the dross, *viz.* to cupel that which is separated, then weigh the

grains of gold left, and thou shalt find half of it consumed by the dross. If this happen to corporeal gold and fixt, How will it be with that which is newly extracted out of an imperfect metal? Therefore you must diligently search out the natures of metals, and then such cases will not seem incredible.

From hence then, and other Examples mentioned it appears, that that separation which is done by tests and cupels, is not true and legitimate; and consequently, that another profitable separation of metals is to be sought; because by this the greatest part of gold and silver burns into dross, witness Experience, for which cause the former example was alleaged; whither belongs the proof, *viz.* how much gold the dross hath attracted, which is done as followeth: Rk the remaining black dross, to which add a double weight of salt of tartar, put it in a crucible filled but to the half (for fear of boiling out) and covered, that nothing fall in, under a tyle or among live coals, one or two hours space to digest; and a new *Regulus* of lead shall be precipitated, which separated from the dross, you may cupel, and you shall find new grains of gold attracted by the iron in the dross, and now separated by the salt of tartar, overcoming the force of the iron. And so you have heard from two examples, how in the coction of the separation gold may be drawn out of the lead by tin and iron, and that therefore there is need, that gold be separated by the *Antimonial Regulus* out of the aforesaid metals, and not by lead, if you would extract the true substance with gain.

N.B. Gold may likewise be separated out of the glass of lead (being first dissolved with the ashes of tin) with coal dust, adding it in the flux and stirring it with an iron wiew; and also with common sulphur, by burning it on it: but the aforesaid way with iron, is to be preferred before those two which spoil the gold, &c. wherefore the remaining dross is to be gathered, which by some abstracting furnace by other means may be tried, for to recover the spoiled or lost gold and silver.

And all these are alleaged to demonstrate that the gold in tin and iron is to be separated by the *Antimonial Regulus*, and not by Lead. But how this separation may be perfected, you shall hear in the third part, where we will treat of lead, explained by *Paracelsus*, in his book called *Caelum Philosophorum*, and other artificial Chymical labours: wherefore here we omit it, being superfluous to handle one thing in divers places. In the mean while exercise thy self in lesser things, that thou mayst be more fit for greater when they shall be set forth. But wonder not at my liberality in publishing so great secrets, for I have reasons for it. Such a burden is too much for me alone, neither doth it profit the Covetous to sell his goods to them, which keep not their words, nor pay the money, after they have obtained their art, which hath hapned to me. Wherefore I have determined to communicate some secrets to all the world indifferently, that the poor may receive some profit by them; knowing that though I write plainly, yet that all will not at the first view obtain their desires. For some are so dull, that they cannot imitate a work though often seen. For some have often visited me, to see my new manner of distilling, which though it was sufficiently demonstrated to the eye, yet they could not imitate it, till with often persuasals at length they have found the

right path. Others have left it as too hard a work, when it would not presently succeed, which if it happened to those who had an ocular demonstration, how much more difficult will it be and hard to them who have nothing but what they have heard or read. Wherefore I am certain, that though I should publish every one of my secrets, yet could they not be performed by all men, my coats and materials being left sufficient for my necessity. Wherefore I fear not to publish, the next opportunity offered, divers profitable and excellent secrets, viz. in favour of all and every one.

As for that spirit of fall necessary to this work, you may find it in the first part of my Philosophical Furnaces corrected and amended; but the way of separation in the fourth part.

And so I finish this work, being published in favour of those who by war (though honest men) are reduced to poverty. But what things are deficient in this little tract shall (God willing) be delivered in the next (which shall follow in a short time) largely and clearly without fraud.

F I N I S.



THE SECOND PART

OF THE Mineral Work.

Of the Birth and Original of Metals and Minerals, viz. How they are produced by the Stars, and take to themselves a body out of the Water and Earth, and are found in a sundry shape. Written and brought to light for the sake of the Diligent Searchers of Nature.

A Preface to the Reader.

Courteous Reader,

Whereas in a former little Book, lately by me published, I mentioned this little Tract of the Generation of Metals, and through want of time, could not hitherto make it publick, although earnestly desired by men of the meanest and highest condition: I have now determined to spare so much time from my other Employments, as to do this Work for the publick good, no ways doubting, but that (although this my opinion of the Generation of Metals, doth not agree with all the Philosophers) yet will it get credit from, and the assent of not a few quicksighted men.

That which I here declare, I do not exhibit it with flattering words, or many circumstances, or the testimonies of other Writings, but with a naked and genuine simplicity; for which very cause I would not make this little Tract too prolix, but have unfolded my mind with the most Compendious style that I could. But let none think that I endeavour to weaken and nullifie the Opinions of other men concerning the Generations of Me-

als, and obtrude mine in the World, no, not in the least: I leave to every man his free will, and the Liberty of viewing others, who have written Monuments of this thing, and of comparing of them with my writings, that he may evidently perceive which of the two Corresponds most with Nature and Truth: I aim not at any Honour hereby, as if I were wiser than the common sort: Nor do I reap any benefit by making this little Book, but 'tis done only for this end and purpose, That (because I have formerly written of Metalline things, and have also made mention of this little Tract of the Birth and Nativity of them) I may give light unto my Writings, and render them more easie to be understood; for I should most bitterly suffer, if but one only should be led into error by my Writings, but I trust that the light is springing up unto many, by the guidance whereof they will more cautiously handle than hitherto they have done. Let the Benign and Merciful God, our Father of all things, of whose Wonders the Heaven and Earth are full, give unto His poor needy Children that which may tend to the Glory of His most holy Name, and to our health.

O F



OF THE Birth and Nativity OF METALS.

There have always been many, and various Opinions concerning the Original of Metals and Minerals, to wit, of what matter they are first of all generated in the Bowels of the Earth; and how come to such a fixity, inasmuch, that a young Beginner in this hard Science, hath been in suspense; which of them he should assent unto, and by what Phylofophy he should direct his course.

And whereas, throughout the whole Universe in so many Nations, there are so many men, both of high and low degree, as well Learned as unlearned, who busily seek at this day, to get their Felicity from the Metals; and whereas, without the true Knowledge of them, nothing at all of profit can be had (for by what means I pray can any one convert any imperfect Metal into a better, if he be ignorant of what Parts it is composed; into what Parts it is to be resolved before that it can obtain a more Noble Form) and that the Knowledge of their Generation is worthily necessary for their Melioration; we will in a few words clearly evidence, What is to be considered as to their Nativity. Although the whole Company of Phylofophers do almost unanimously testify, (but yet in succinct, obscure, and enigmatical Terms) That Metals receive their Generation from above, by the force of the Stars, and are produced in the bowels of the Earth; yet some there are, who contend very ignorantly, and affirm, that Metals have not any seed at all, as other Animal, and Vegetable things have; and that (upon this account they have no propagating faculty, but were produced such in the belly of the Earth, by GOD in the first Creation of things. But this Deceit is too gross, and palpable, and may be met withal most easily, by daily experience, declaring the contrary. For when being found in the Earth, they are by the Miners brought to light, we abundantly, and ocularily perceive, that even now they daily grow, and will not cease from this motion, unless rob'd of

their Vegetable Vertue and Life, by external Accidents, which very thing convinceth the Opinion of Error. Some there are, who teach that God, when he made the World, did infill into the Matrix of the Earth, not the Metals themselves, but their Seed only for its own propagation; which, if so, then long ago, would this Seed have afforded a new harvest of it self (of which, no footsteps are any where extant) by its own absolute Vegetation. Know therefore, that the manner of the Metallick Seed is far different from that of the vegetable and animal Seeds, which are perceptible to the sense of sight and feeling.

For the Metals are not all together created in the beginning of things, but begotten in length of time, out of the bosome of the Elements; and on them, being created by the Omnipotent GOD, is this Command enjoyned, and this Power implanted, that they should give growth to all things, by their Vertue and Efficacy; for accomplishing of which thing, the one cannot in the least want the Company of the other.

For the Stars or Elements of Fire, delivers out the metalline Seed out of its own bowels; which the air carries down into the Water, that it may adapt to it self, a palpable form or body, which the Earth (embracing it) doth cherish, nourish, and augment from form to form, until it comes to be a perfect Metal, which it (at length) brings forth into the light, as a Mother doth her mature young one; which Conception and Generation of the Metals, taking its Original at the very beginning of the World, will always continue even unto its Dissolution.

For by the efficacy of the Elements, new things are from thence generated, and contrarily, old things are destroyed; which thing is not only done in Metals, but most apparently in Vegetables and Animals: for none can deny, but that various Hearbs, and little Animals are produced upon this Stage, by the alone vertue of the Elements, with-

G g 2 out

out planting of the Herbs; and without the Seed of the Animals, which to pursue, I could lay down many Documents, were it needful, but 'tis altogether needless, to say any thing of that, of which none are ignorant. And now, who will not believe, but that the same may be done in Metallicks. God Omnipotent hath implanted in the Stars, or Element of Fire, the vivifying prolifick and seminal vertue of all things, which power it doth not keep shut up within it self, but sends and lets it down by Divine appointment into the earths center, by mediation of the air and the water; which fiery beams cease not, by reason of their implanted impulse and vertue, to go forward, until they do at last meet with a place, beyond which it is impossible for them to go, nor can they stay there any longer, but leaping back from the center unto the circumference, are dispersed throughout the whole earth, cherishing and impregnating it: which thing, unless it were done, and those sidereal vertues should remain in the center of the earth, and never flow upwards, nothing at all would grow upon the Earth. But because heat, and whatsoever is of the fire, is endowed with this nature, to go forward as far as it can, and where it can go no farther, 'tis struck back, and leaps from the center to the Superfices; which thing is evident in a burning-glass, wherein when the Solar beams fall, and cannot penetrate the compact and polish't metal, they are dispersedly forced backwards, and in those fiery beams, whilst (every where) they leap back, do in the porosity of the earth snatch up, as it were, a fat humidity, adheres thereto, and by mutual mixture are coagulated into a certain palpable Essence, out of which, according to the purity or impurity of the place, a pure, or an impure metal is with length of time produced; because a metal doth not presently become ripe in the same moment of time, but the Seed of the Metal is by little and little nourished and increased in the matrix of the earth, with the heat of the central fire, until it attains its perfection.

Like as in the generation of Vegetables and Animals, it comes in use, whose seed being received into the suitable matrix, takes increase from thence by little and little, until (if no obstacles prevent) it obtains a predestinated and appointed form, whence 'tis, that according to the purity of the place the metals are also varied: For it is but one only seed out of which Metals and Minerals do proceed: but the place and other accidents are the cause of their Unlikeness, as we shall prove in the subsequent writing.

But to some men it will seem monstrous, that I say there's a place in the middle of the Earth, the which nothing can pass through or penetrate, but is stop't; that which is heavy remains there, but the more light is carried backwards: which opinion will be worth while briefly to explain.

In the Creation of the World, the Elements being as yet not separated each from the other, but being a *Chaos*, God instituted their separation, and ordained a place where the more pondrous part of the mass should be separated, (which is the Earth) which thing is even continually done, because every heavy thing or earth knits it self to its assigned point, as a Bee doth to his hive, from whence at length this Globe is made or born, upon which we inhabit: Presently after, that which was next in weight, the water, made its separation from the other Elements, and encompass'd the Superfices of the

earth, having the same center with the earth, inasmuch that if the earth were not, the water it self would have chiefly or primarily encompassed the stable and founded point of Gravity or the Magnet; but because the earth exceeding the water in ponderosity, doth intercede, it worthily assumes its appointed place, and takes the waters upon its back.

Now, as the other two Elements, the lightest of them, the Fire, God likewise sent to its proper abode, a place most remotely distant from the inferior Globe of the heavy Elements; the other light Element, the Air, being the *medium* between the fire and the water, God hath set it between them two, that constantly touching each the other, they might mutually circulate, cherish, and uphold each the other, until being at length dissolved, they are reduced into their own nothing, from whence they were produced.

For the Fire cannot burn without the Air, nor the Air be conserved without the Water, nor the Water be nourished without the Earth, nor the Earth (being as it were dead) bring any thing to light, except the Element of Fire doth first spiritually infill therein its own seed, whence it is afterwards made corporeally and sensibility, such as is necessary for all growing things.

And now, lest what I have spoken (*viz.* that the Earth hath its own center unpassable by any thing, whereto the sidereal rays striking, are contracted into a freight room, and (driven back) from thence are sublimed and distilled throughout the whole Orb, from which all kind of Metals and Minerals (by the help of the Earth and Water corporifying them) are produced) may seem a fable

Know, that this Philosophy is demonstrable by many uncontrollable reasons; which Philosophy I do not my self only embrace, but also many more have done, amongst whom the most famous *Sandivov* is not the least, who writ, That in the Earths center is a vacancy, in which nothing can rest, the which thing even the reason or order of Nature seems to evidence, in whose middle point a void place is necessarily requisite, into which all the vertues of the Stars may pour out themselves, may mutually operate upon each other, and excite a marvelous heat, permitting neither delay or quietude for any thing in that place: but from thence, even the unbroken vertues of the Stars are by little and little enforced to go back unto the circumference, where joining themselves to the most pure earth, they exclude a metallick child; so that you need not wonder, because of that most intense heat that sways there, when as all the Asterisms, the Sun, the Moon, the other Planets, with Stars innumerable, do into that place inject their powers with all their might. If you consider but the solar magnitude only, being by Astronomical Calculation 64 times the bigness of the earthy globe (omitting to speak of the other innumerable huge bodies, that jointly cast their influences into the belly of the earth) what an unspeakable furious heat thinkest thou that all these will give, which in the center of the earth muster up their vertues, and make them manifest and efficacious: Consider a little how much one pugil of the Sun-beams can do, being taken in a concave glass, or a metalline ring well polished, or any other instrument, and straightened into the center for a concave-glass rightly made, having but the Diameter of a span, doth easily burn wood, or any combustible body; but if the Diameter be two spans,

spans, it melts with the Sun, Lead, Tin, Bismuthum, and other metals easily fluxible; if 4 or 5 spans, then it melteth Copper and Silver, and so mollifies Iron, that it may be wrought upon the Anvil. If now experience evinceth this thing, that a little handful of the beams collected and strengthened into a point, be of so great force as to melt even metals, and to fume away S , S , and Arfnick, Auripigment, Koboltum, and other volatile and immature metals of like kind; what thinkest thou would be, if the beams were congregated the compass of 10 or 20 fathoms, doublets they would burn up all other metals, except Gold, like a flame, and elevate them into fume? And what are 10 or 20 fathoms, if compared to so many thousands of thousands which are attributed to the Sun, whose heat (passing by to speak of the other great Stars) if it were congregated into one place, (which is so done in the earths center) what an incomprehensible burning heat, thinkst thou, would be there? verily nothing would be fit enough to resist the burning; and indeed there is nothing in reality that doth resist it, whence necessarily that point is vacuous wherein nought can rest or remain.

Thou wilt object, that I speak of many things, but prove a very few; for who was ever there, and beheld such a Cavity? I Answer thus, that albeit, there be no ocular Testimony of this thing, yet naturally Philology affords Testimony sufficient, whereby 'tis in very deed demonstrated, that such a place there is: now none denies, that the Sun and Stars by their motion do environ the terrestrial Globe, and imprint their beams thereon, which being granted (for no sober man will contradict this) it also follows, that those hot and invisible beams do by an innate force and vigor go forwards, until they are somewhere stop'd; and a further progress prohibited them; which thing is done in the middle most point of the Earth, or all the Philologists are altogether Lyers, who unanimously believe, that the heat is carried directly forwards, and not backwards: but behold an apparent Example of this thing: Put a Coal upon some thick brafs, or iron plate, and thou shalt see that the side under the Coal will first wax hot by the penetrating heat; take off the Coal and try with thy hand, and thou shalt find it hurtful by the overmuch heat; try also the under side of the Plate, and thou shalt find it to be but gentle warm, and after a little delay, try yet once again, and thou shalt find that the heat is gone directly forward, and that the under side of the Plate is hotter than the upper part, whereupon the Coal lay.

Hence thou maist clearly perceive, that the heat never goes backwards, but is carried directly forwards; which being so, thou shalt be enforced to confess *volens volens*, that in like manner the Astral heat ticks not in the Superfices of the earth, but pierceth even unto the very bottom center.

Well, but thou wilt again object, If the Sun-beams descends through the earths thickness, even to the very center. Whence is it, that the whole earth grows not hot thereby, or at least so warm as it is on the surface? for 'tis found by experience, that the digg'd-up earth is not warm, but cold, and no heating beams are therein perceptible. Take this for an answer, That the dispersed beams of the Sun do not display their efficacy, but only in those places where they are collected and become sensible; a hint of which you may observe in the earths sur-

face it self; where a speedier passage being not permitted, but through the hardness of the Stones, and its own density, there being a stop and obstruction, the heat becomes duplicated, and manifestly augmented, inasmuch, that in all very hard rocks and cliffs there is sometimes created so great a heat by the continual Conflux and Condensation of the Sun-beams, that if accidentally, wood or fuel be laid thereto, it burns and flames up, which never happens in a thin and porous Aire (how near forever to the Sun) it being incapable of stopping those beams; for by how much the higher you ascend into the Aire, by so much the more intense shall you find the Cold to be; inasmuch that the most Touring Mountains, altho' poited in warm Countries, are always covered with Frost, Ice, and Snow, when as in the bottom of those Hills, the Ground is very warm, and brings forth varieties of Fruit, although it be more remote from the Sun: The cause of which Cold in the Tops, and of Heat in the Bottom, only consists in the reflection of the solar Beams, which are stayed and multiplied below, which thing cannot at any rate be done in the Fire that is above.

These beams having first passed the superficies of the Earth, where they were a while joined and multiplied, are by little and little debilitated, and return to their simplicity; whence it comes to pass, that that part of the Terrene Globe, which is furthest distant from the Center, hath as little heat, as the Aire on high: but if it were possible to ascend higher, and nearer to the Sun, the heat would by little and little be increased, and be found greatest at the Sun it self: In like manner may a Comparison be made about the Earths heat, which near the Surface is very faint, but nearer the Centre, more and more increasing; (there being its Seat and Collection) so that the middle Earth, between the Sun (from whom the heat flow) and the Centre, where the whole being gathered together, is repulsed, may deservedly be esteemed the coldest part; of which truth, a certain demonstration is readily producible.

For when in the hottest day of Summer, watry Clouds are elevated by the Winds, higher than ordinary, they are made pure Ice by the force of a most intense Cold, which fall down in little bits of that form or shape, which they were imprinted with by the Aire, to the great detriment of Vegetables; and is by us call'd Hail, and so cold, that we are not able long to hold it in our hands, and usually lies some daies in the Sun heat ere it melts by the warm Aire, and returns into Water.

Now then if there were not a great Cold in the middle Region of the aire; whence is it, that those Clouds are so frozen; and who knows how great the Cold is, where the Aire, in its own middle point, is most of all cold; doublets it is so great, that no living thing is able to live therein the twinkling of an eye, but would incontinently be transmuted into a stone, even as we have frequently perceived the earthy Exhalations born up on high into the middle Region of the Aire, to have been there coagulated, and compacted into the most hard stones, and so to have fallen down; and not only stones weighing some pounds, but also metals too, and chiefly iron of a great weight, representing the shape of many conglomerated drops, have been in that part of the Aire condensed out of dry Exhalations, and thrown down thus concreted;

the which thing others have handled more at large; whence 'tis sufficiently evident, that the Sun-beams, in such places as they can freely pass through, without any impediment, give not any heat from themselves: but only where they are detained and fixt, and by how much harder the detaining matter is, by so much it causeth a better heat. Thou also see'st that Wood, or any porous Body never contracts from the Sun, so great a heat, as a stone doth; nor doth a stone, so much as a metal, although all placed the one by the other, to the Sun's heat; the cause of which diversity, doth alone consist in the pores, of which some bodies have more, some less; thereby granting a more speedy passage to the heat; for 'tis (as I have often said) the property of the heat, to hasten directly forwards, as long as 'tis not impeded, and extremely unwilling to go back. A Testimony whereof, as well the Kitchen Fire, as the Solar, or Fulminous Fire affords unto us; for if any body sitting near the Fire, hath casually in his pocket, any metal, be it a key, knife or money, the heat (easily penetrates the thin Garments) lights upon the metal, whereto it adheres and augments; and gets so much heat, that sometimes it cannot be held in the hand; but the cloathing, although nigher the Fire, is scarce gently warm; the same thing usually falls out in Thunder, whose Fire, because it flies very furiously, if it hath not room to pass the pores of solid withstanding bodies, it diffuses and dissolves them in a moment, and leaves porous bodies whole, which Lightning, often melts the sword in the scabbard, or money in the purse, the Receiptacle of them being whole: It also breaks the hollow and marrowy bones of Animals, the flesh remaining whole and sound; the Cause thus, for that this fulminous heat most swiftly penetrating, is deprived of time to penetrate, and warm a metal by degrees, and will not return backwards, contrary to its own nature, and therefore subdues and conquers the weaker Element by force and power; for Fire only is the most potent of the Elements, and knows not how to yield to the other three, but they are compelled to stoop to it, with which privilege the said Fire is from God endued, even from its very infancy.

In the same and like manner is it with the Sun's, Moon's, and other Stars heat, and occult Vertyes, which by their efficacy, hasten on forwards so long, until they meet with that which they cannot penetrate, where making a stand, and heated as it were together, are compelled to go back, searching after a place to rest, and become corporeal; for the chiefest heat being in the Earths Centre, gives not any delay to any thing, but continually drives back, what flows thither, into the porous and moist Earth, where the Beams being sublimed and hidden, may cloath themselves with a sensible Corporeity, and proceed from one degree to another, until they are well concocted into perfect Metals, no impediment intervening.

But let me not be mistaken by any one, as if it were my Opinion, that in the Centre of the Earth, the fiery place is constitute, of which the Scriptures make mention; for I have nothing to say as to that place; nor desire to know ought concerning it. This place which I describe, is discovered to us by natural Philosophy, but that place the Scripture makes mention of, I leave to Theologians, by which they may terrify the wicked Multitude, that they precipitate not themselves rashly, and by Troops thereto.

And now because the Hellish Fire is here mentioned, I cannot omit to blast the most unground Opinions of some putative Doctrines thereabouts: There are in many places found Mountains, belching forth, with huge force, flames, fumes, ashes, and Stones: In Europe, is the Hill *Ætna* of Sicilia; in Island, is *Höfn*, behind Norway; there's also *Vesuvius*, adjoining to Naples, and many more other places in other Parts of the Earth; some part of which continually burn and fume; others at certain times and intervals; which places, many account for the fumings of Hell.

But verily this cannot be rational, because those burning Mountains have a natural Original, and Cause of Firing, known but to very few; for in some places are found Mountains wholly Sulphure which being kindled, either by the Central or Elemental Fire of Thunder, or any other accident cannot but burn, and when such a Mountain hath but once taken Fire, and begins to burn, who can restrain the burning; no body, because of the greatness of the Fire, and danger of what may happen, being therefore left to it self, it feeds downwards, being never destitute of matter fit for the Fire.

And now if any one understanding by the Monuments of the Antients, that these Mountains have burned for some Ages, yea, and for Thousands of Years, should wonder, whence Fuel sufficient for that Fire should be had, let him know, that this may easily be done; that a Mountain should burn without intermission, not only for the magnitude of the Terrene Globe, in which a mountainous Wax, or Bitumen, Brimstone, and such like Combustible Things abound: But also, because of the never interrupted Motion of the Stars, whereby they never cease replenishing the Earth with their outflowings, and generating (besides Minerals) such Combustible matters as these, augmenting and cherishing the Fire.

But they endeavour to confirm their Opinion by the lamentable Howlings, which at some times are heard nigh those Mountains; which Cries, the credulous Vulgar People report to be of the Souls, which are lost: But these are but Trifles; for those Out-Cries are then only uttered, when the Mountains endeavour to throw out much Fire, otherwise they burn and fume very gently, which as soon as the Adjacent Inhabitants perceive, they well know, that they shall shortly have an Harvest of ashes, fire, & stones, out of the Mountains: and that they may avoid the hazard and danger threatened by the Fire, they carefully keep far enough off. And for the most part, a great Quantity of the Sulphure is prepared in the neighbouring parts, whereby the needy get their food, by digging it up, purging it from its Impurities, and preparing it for humane uses; but as to the Cries, it seems to be nothing else in my opinion, but only the Fire breaking forceable through the freight Channels, the hard Stones and Caverns, and producing thereby a dreadful sound, which they commonly call Ejection, or Howling. They also add, that about those fiery Mountains, Ghosts, Visions, and Spirits usually appear visibly. This also is true, and Grounded upon Nature, but yet thou canst not prove that they are Devils and infernal Spirits; there being even elsewhere seen, and found diverse Spirits in the Bowels of the Earth, being Monsters not unaccounted, or strange to such as dig, or are Miners, by which they are frequently injured; yea, and sometimes

times destroyed, lamed or infected; sometimes these spirits are hurtless and idle spectators, or playing with the workmens implements; or even labour themselves not in the least filling their Pockets, how strongly ever they shew themselves bent upon their work. But such spirits appear in various forms, oftentimes resembling an Horse, a Dog, or other Beast, sometimes a Dwarf-like crooked man; frequently they appear cloathed with an alhy Cowle of a Monk; they usually are Testimonies of great Felicity and rich Mines; sometimes they do great mischief, by choaking the Miners with a wicked habit, or throwing them headlong into the Pits, by reason of whose malice many of the rich Mines are unavoidable left undigged, they boldly defending their hidden Treasures.

Let these things concerning the spirits, about the burning Mountains, or those remaining in the profundity of the Earth, and appearing in the several shapes, be spoken by way of Parenthesis. And now I return to the thing in hand, and will demonstrate, that there is nothing of Community betwixt these burning Mountains and the central or infernal fire, but that these blowout a thick and material fire; which I thus prove.

First of all, These Mountains do at sometimes cease to burn, breathing out smoak only between whites more copiously; sometimes they dye and expire through want of fuel to supply them.

But the central fire can never be either diminished or vanish as long as the sun shines and stars glitter, and send down their vertues into the earths centre. Even as the infernal Fire shall never expire, the Scripture thus testifying, wherefore that fire, though a most furious Mountainous fire, cannot be either of these two, but is merely material, subject to encrease and decrease, and its food desisting, plainly extinguisheth: Besides, the fire of those Mountains heats not fervently, but for the greatest part smoke obscurely; but the adjoining Earth is very hot, for the space of some miles, so that you cannot long stand there without injuring your feet. The Waters also which flow down from them, are boiling hot, and manifestly smell of sulphur a good Portion whereof they have within themselves.

Besides these flaming and smoaking Mountains, there are sometimes found other Dens or Caverns, breathing forth neither Flame nor Fume, and yet a great heat, which is another kind of fire, which is largely treated of in the Chronicles of Metals, where amongst other things, this is also added; That on a time a Wind gaping, arose in a certain Mountain, and sent forth a huge heat, and in the night only was some splendor perceptible, ascending towards Heaven, and sometimes a breathing heat was only observed.

On this a curious Monk was in himself perswaded to let down into the cranny, a pot, bound on an Iron Chain, with intent to draw up some molten Gold, which he believed to be thereunder, which when it came to touch the fire, it presently melted and fell down, the which in like sort burnt away like Chaff, with a good part of the Chain also, and was ejected and thrown up again in the form of a fume, with a great noise and crack, but the Monk hardly scap'd with his life, the gold being left behind in the Hell; but thou maist readily divine what sort of fire this was, which reduced the Pot and Chain into fume in the twinkling of an eye, that it was not a material fire, because void of smoak, but the aethral fire.

It is well known to the Miners, that the central and gehennal fire doth oftentimes ascend the high parts of

the Mountains, and warm them, and there cherish and mature the metals: which Caverns, when in their searching for Metals, they come nigh unto, they feel too much heat, that they are even against their wills compelled to desist. But this heat, although indeed in the action of the growing, Minerals doth usually excite and make great enough; yet for the greatest part it derives its Original from the central fire, and this central from the Stars. But after what manner and reason the Stars beget the central fire, and this generates the Minerals and Metals, I will demonstrate to the unknowing as briefly as I can.

Thus therefore stands the case: We read in *Moser*, in the first of *Genesis*, that God, when he made the World out of the confused *Chaos*, did give the Elements their original first, and assigned to Earth its proper place, and joynted on earth its Office to be done; but by what means they are preferred by the interceding perpetual Circulation, natural Philosophy doth demonstrate. It will not therefore be to our purpose to treat prolixly of them, but only of the rise and nativity of metals, will I copiously speak as far as I know of them, viz. in what manner the metallic kind draws its original from them, together with its encrease and augmentation, and how having arrived to the top of their perfection, they come to their end.

I have a little before demonstrated, that the superiour element of fire, as the Sun, Moon, and the other Stars, send down their invisible vertues and fiery beams into the earths center, where they are congregated, and cause huge heat, and being not permitted there to rest, leap back again, and are scattered throughout the universal Globe, and impregnate it with various and wonderful Cretescences, which are called Minerals by the Philosophers, cherishing and perfecting them in various forms. The reason and manner of which thing I will here in a few words unfold.

Every spiritual thing, come it from whatsoever body it will, is invisible and impalpable, nor can any thing be made of it alone, but it's forced to remain a spirit, until it meets with a subject whereto it may adhere, be united, and by the benefit thereof be turned into a Corporeal Nature, and pure, answerable to the purity of the subject and spirit, the spirit is in the room of seed; but the subject answers to the earth or matrix in which the spirit is concocted, into a sensible body suitable to its own nature. But 'tis to be known, that the manner of Metallick conception and generation, is far different from that of the Vegetable and Animals: For in most Vegetables that have arrived to their perfection, nature works out a seed for a farther propagation and encrease, being the most excellent part of the herb, which at the Springs Entrance being committed to convenient earth, produceth a new plant in all points like unto the former, from whence it springs, by which doing new seeds of the same plant, are always conserved. Although indeed some plants are not propagated by the seed, but by the root. Yet they are very few, and in such, the root it self serves instead of seed. And that in some places Plants grow out of the earth, without the assistance of either seed or root, its done by the help of the Elements, in whom the same force of impregnating the void earth and production of Plants, is at this instant, as was at first, when they generated and brought them forth in the beginning of the World. In like manner is there a twofold production of Animals,

the one done by a proper sperm, by which they are propagated, the other is a production of some little Animals, upon the world's stage, even without sperm, by putrefaction only, and the mutual action and passion of the Elements.

These two waies have footing also in Minerals, the one is the Universal impregnation made by the Stars in the beginning of the world, the other is Daily. And even as the first generation of Vegetables and Animals is to be accounted far more excellent than that which is accidental and quotidian, so is it with Minerals likewise. As some Vegetables arrive to their perfection, and perish sooner than other some, so do metals and minerals also; and by how much the sooner and quicker growth they have, by so much the sooner do they perish; and so on the contrary. And as a rational and movable Animal is a thousand times in his nobility and fixity beyond a Vegetable, so also doth a Mineral, by reason of his fixity, far transcend any Animal; which wants an immortal soul.

Now when the Vegetables, Animals and Minerals, fatally terminating their period, are corrupted, and return into a nothing, each Element takes to it self what is its own. The Stars, the Spirit, the Earth, keeps the body which it formerly gave, and the Principles of the thing do each return unto their Principles from whence they at first did flow.

And in this manner is there perpetual Death and Regeneration of things, by the testimony of Experience.

There are many ways by which Metals are brought to light, viz. by huge Fires: if by Accident and Carelessness of Shepherds, a Wood catcheth fire, the Earth by reason of the intolerable heat Gapes, and the molten Metal flows forth and is detected: sometimes also vehement Earthquakes discover them.

Besides, the Veins of Metals are found out when deep Wells and Pits are digg'd, or by the Plowing in the Fields, they are sometimes dig'd up, and their Veins discovered: Among Rivers walking away the Earth and Sand, do sometimes open their Veins; the Fruits of which being found in the Banks, give cause of searching after them.

They are also discovered by means of an Animal, even an Horse, by pawing with his foot, beating away the Earth uncovers the Vein, which happen'd at *Gollaria* in *Ramelburg*; even Hogs searching after Acorns, have dig'd up Mine-pits: or a pure Metal lifts up it self into the Aire in the likeness of a Reed, by which means the exceeding rich Mines of Silver at *Kutenberg* in *Bohemia*, was by a Monk manifested to the World, who walking in the Wood gathered a Silver Reed growing out of the Earth, and put it in his Cowl, and declared the thing in the Convent.

Sometimes also most vehement storms pulling up very great Trees by the roots do open veins. Most frequently a Corruption gives undoubted testimony of Veins, which being enkindled by the warm air, runs a long some space, in the likeness of a blew flame; nor is the finding out of the process of Veins (not lying over-deep buried) very difficult if you rightly consider, for they continually breath forth a warm Sulphureous vapour, upon which, not only the Grass growing is thiner than is elsewhere wont to be, but even the Trees that grow upon them are dwarf-like, have paler and thiner Leaves than other Trees elsewhere planted have.

Likewise where the Dew, Hoar-Frost, sooner melts and vanisheth, 'tis a testimony that a Metal is there-

under; the cause of which melting, is the warm vapours ascending from the Veins.

But that testimony which the most employ themselves in, in seeking by an Hazel rod (which my self have many times experienced) is fallacious and uncertain.

This is the Work of the Art, if any one conjoining Metals in the Fire under a certain constellation, melt them into an electrum and make of them a little Ball, perforated in the middle, wherein a wand of hazel of one years growth wanting little boughs, is to be implanted, which carry straight out before thee where thou conjecturest Metals to be, when the little Ball, bows the Rod & bends towards the ground it is without doubt that thereunder are metals, & that the labour undertaken about them will not be in vain.

This testimony proceeding from the Natural and infallible foundation of philosophic, is deservedly to be preferred before all other Arts concerning the finding out of Metals.

Nor mayest thou wonder thereat, for we are unacquainted with most things; who is it that can certainly unfold why the Magnet attracts Iron, and heated Amber attracts Straw, Grass, Thread and other Vegetables? the whole Earth is full of unsearchable Wonders and Secrets of GOD which are to be diligently observed by us.

Now as to the causes, why so many kinds of Metals are generated so unlike amongst themselves; some think one thing, and some another; many will that the Seven Metals only have their product from the Seven Planets, viz. Lead from *Saturn*, Tin from *Jupiter*, Iron from *♃*. Gold from the *Sun*, Copper from *♃*. Quick-silver from *♃*. and Silver from the *Moon*; but I am not of that Opinion; for how can the Sun, ♃, or any other Planet seek out to it self in the profundity of the Earth, a peculiar place where to sow its Seed, and procreate a Metal conformable to it self; whereas we see that no Metal is digg'd out of the earth, alone, but always mixt with others; for thou shalt never find Lead but there is silver in it, more or less; no Tin is digg'd or washed out but it hath Gold and Silver; all Copper and *♃* contains Silver, and sometimes much *♃* which is neither conceived of, or believed by the Metallurgists, nor is ever Gold found without Silver or Copper, and *♃* is very seldom void of *♃* or other Metals; but if each Planet should generate its own Metal, how comes it that another is adjoined to it? I speak of those Metals only, which are either solely contained in their own Veins, or else are found and washt out in grains in the Earth or Sand, either pure or mixt with stones.

I exclude those which are (two or three mixt with each other) each in his own proper Vein, and are a burden or impediment, to one another, as Metallists speak, and are often carried along a great while together, and not seldom do come together making one Vein, and are by and by separated and dispersed into various little Veins; and now, if each Planet should create his own proper Metals verily he would also chuse his own place, and would not suffer another to possess his proper nest, and disturb his operation.

But let us allow to each his proper Metal, and then what Starr should we assigne to Bismuth Cobolt, *♃* and Zink for their Generator, they being undeservedly excluded from the Metalline Company, wherewith they are nearer affined then *♃*, being fusible with other Metals, and brought to use by the Artificers hand, which with *♃* Cannot be done; indeed

deed some are to be found alone, in Veins, as Lead and Silver, but *♃* being any where found and cleansed from every Mineral, and washed out of the Sand, yet never wants Silver and Copper, Tin and iron are also gotten out of the Sand, and Earth in small pieces, never simple, but mixt with stone; these grains or pieces yield the most Excellent Tin, (Called by the *Germans* *Seitzstein*) and for the most part contains more Gold than that which is digged out of the pit, Because while those little granulated stones are washed out (*♃* *Witter* or *Wittranpen*) many granulated ones containing much Gold, commix themselves therewith, and are excited and melted together with the Tin; in like manner the little grains of Iron yield the most Excellent Iron. The Miners find *♃* either runing or inclosed in a Red stone but *♃* are excited and vivified by Art; sometimes also Copper is found in very little stones (*Wittrauplein*) like the Angulated Paris Stones; otherwise all Metals grow in their own Mines or Veins of the Mountains, out from whence being gotten with greatest labour and cost, together with hazzard of life, are purged from the Mine, by beating, washing, and melting; but how each are to be known, exploded, digged, beaten, washed, melted, and separated from heterogeneous things, is copiously demonstrated by the most Famous and Ancient Metallists, *George Agricola* and *Lazarus Erker*.

I do therefore conclude that Metals, and Semimetals or Minerals, have their birth from one common Seed, but are by accident fevered into various forms and shapes.

For the Vertues of the Stars being jointly carried into the Centre of the Earth, do not remain alone, but being mixt each with the other, goe back into the Caverns of the Mountains, seeking a place of Rest, where they may make themselves a Body; which if it be pure, makes also a pure Metal, if impure, an impure Metal; and such place is most like unto a Matrix, conceiving Seed from the Male, which if it forms into a body, cherisheth, and being excited to maturity, perfects it. Now the Astral Spirits supply the room of man-like sperm, which being received into the moist Earth, in Caverns, as in a Matrix, is nourished, and fashioned into diverse metallick Forms, and palpable Bodies, according to the purity of the place.

Hence also 'tis evident, That various kinds of Metals are generated out of one Seed accidentally, because the Metals, whilst in being, do grow riper by little and little, and are more and more meliorated, and daily experience doth demonstrate, that they are nobilitated, not only under the Earth, but even above it. Hence 'tis, that the Miners digging out an immature Mineral, as *Bismuth*, *Cobaltum*, or *Zinck* examining it, as they do silver, and finding nothing, say, that they came sooner there than they ought, which Minerals being exposed to the Aire, and then exploded, and tryed after some years, are found to contain much silver.

On this account I affirm, That if the common Seed of Metals, had always a clean, and fitting Matrix, and no accidental impediments intervened, nothing else but Gold (the highest perfection of metals) would be generated; and that this is Nature's intention, always to bring to perfection, what she hath begun: but Gold only attains this state, all the rest remaining imperfect; but it shall be clearly demonstrated in the Third Part ensuing, that by genuine Alchmy, even they may be ad-

vanced to the same degree, which if it could not be demonstrated, that imperfect Metals might by Art, be brought unto perfection, and by Industry, and the Fire; it might be very probable and credible, that each Metal had his own appropriated Seed and Planet.

But now, if common lead possessing but little silver, by the usual trying of the Cupel, may, by the benefit of maturing Salts, be so far perfected by a short digestion, as to yield much silver, and by a longer digestion or fixation, to yield, even Gold it self, which it had not in it before [*Conf. Part 3d.*] 'tis evidently perceptible, that 'twas not Nature's intent, that Saturn should remain in his Saturnine Estate, but that he should be made Silver and Gold.

The other imperfect bodies may also be matured by digestion, that they shall yield forth fixt Gold and Silver.

In like manner the spurious Metals or Minerals, as *♃* *Cobolt*, *Zinck*, *Bismuth*, and others of that kind may be so fixed, as to be behind them, in the Cupel, good Gold and Silver, which is most plainly done in the Third Part.

Thus thou seest, That 'tis not Nature's Fault, that there is so many imperfect Metals; but 'tis to be imputed to external Impediments; for if that Gold lay not hid in the Potentia in the imperfect Metals, by what Art could it be reduced into action?

Art cannot create either Gold or Silver, but Nature can, and yet doth not always accomplish it upon the Earth without the industry of Art: When a Gardener suffers the seed and root of that Plant to wither, nor commits it to the Earth, that it might be perfected; 'tis not the fault of the seed, but the Gardener, who suffers it, that it comes thus to perish. Nature doth very often want help, as appears in the fruits of Animals, and Vegetables; and why may not help be necessary and profitable in metalline products, where, by the Artificers ingenuity, they may be helped. 'Tis evident then, that Nature aims, as well to make Gold out of Minerals, and baser Metals, as to make a Man of an Infant; or a Tree of a Nut: and if it be otherwise, it is not to be imputed unto her, but to external Accidents.

Now I suppose that I have sufficiently proved by these things, that all Metals proceed out of one seed and root; and may be reduced thereunto, and also, that Minerals may be compared unto the first budding of Vegetables, imperfect Metals to Semi-adult, or half ripe Plants; but Gold to perfect seed or fruit, brought by Nature unto its end or bound.

But this is to be understood of the Universal Birth, and Generation of Metals; which for the greater part, drawing their Original in the profundity of the Earth out of the Central seed, do grow in Caverns and Veins, and increase together into various forms, and are from these digged out with great costs, hazards, and labour.

Now there's another Generation actuated in a plainly-diverse manner, without the Central common, and propagated seed, done upon the Earths superficies, by the Operation of the Stars above; yet 'tis the least part of Metals, that are thus generated. It hath been said, that there is a twofold manner of Generation, nature makes use

of in Animals and Vegetables, and so its in Metals.

The First is most frequent and notable, the other is rare and insensible: The one is done in Plants, by the preparation of the seed or root; the other strongly perfected by the influence of the Stars, and the Elements efficacy and power: for Example, If Rain-water, being received into some Vessel, exhales in the heat of the Sun, or of the Aire, an Earth remains, which by an innate power, produceth various little Plants, little Animals, small Worms and Flies, without the access of seed.

The same happens in Metals, when the Sun, or any other Star operates upon the moist Earth; the astral Vertues are congregated, and being made corporeal, do exhibit diverse Minerals and Metals, according to the purity of the Matrix, or moist Earth; where the Water is instead of the Matrix, and the Stars instead of the Father, or Seed: likewise, it is not possible for Metals to be generated in the Centre, where all things are dry, but far off from that place, where the Waters moisten the Earth, and with which the Central Spirits can join themselves, and pass into Bodies and Metals.

For a dry spirit cannot coagulate himself into a body, by reason of his dryness, but wants a fit subject, from whence to take its body, which is Water: as soon as ever the sulphureous spirit is mixt with the water, it is no more common water, but the rudiment and beginning of a metallick generation called Ψ by the Philosophers, not the vulgar being already made metalline, but a viscus water, which the metallurgists call Gur or a fermenting spume, which if contained in a convenient place, and Cherished with the due Central heat, and an humidity, is in length of time maturated into a metal.

The Conception therefore, and generation of metals is not only in the profundity of the earth by the mediation of the central spirits carried upwards, but also in the superficies by the stars casting their invisible beams into a subtle, and fat earth where they are held, and become Corporeal.

For the fideral fire never ceaseth to infuse its virtues into the earth, and to Impregnate it with various products of vegetables, animals, and minerals, according as it meets with a matrix, nor is this done only in the earth as being most fit for metallick generation, but even in the air in thick Clouds, do they act the same thing.

Truly we frequently see that not only little Animals, as Palmer-worms, Caterpillars, Frogs & other insects are there conceived and thence excluded, and descend mixt with the rain, but tis also evident by Credible Testimonies, that stones of an hundred weight, also Masses of Iron in the form of small Conglomerated drops, exceedingly malleable have fallen down from the air, and also various Comets and other Igneous substances being gathered together in the air: are kindled; their matter being taken away they, and falling down upon the earth like a fume of Arfnick they infect it with their brats, whence an harvest of many deadly diseases doth most plentifully bud forth. Nay even thunder and lightning it self is nothing else, but a subtle nitre enkindled, and with the Crack falling stones are procreated in the air; thence it appears, that not only the central fire doth ingravitate the Intrals of the earth: but also the Altral fire seeks a place of creating metals in the superficies or in the air it self, but no where more apt then in the veins and dens of the earth.

I well know, that there are many Opinions of those metals, which are not in the bowels of the earth; but are found above either in the earth, or sand in little grains, but they are for the most part Erroneous. Most men do think that gold which is found on the banks of Rivers and there washed out, was not generated in that place, but were broken off from some veins of gold by the strength of waters, falls, or floods, and brought thither out of the mountains, which indeed may be true, for sometimes torrents do hurry alongst them little shining golden grains which are afterwards taken up on the hairy backs of the beasts, but that all gold found in Rivers, and streams, is by the help of currents waist out of the mountains, seems unlikely, but was rather generated there; for sometimes gold is gathered by a river from whence the fountains are exceedingly remote and distant, which should bring it thither.

Likewise in open Mountains, never seen by any fountains, is gold gathered out of the earth or sand, of which kind is almost all the gold, which the Hollanders buy of the Indians of the value of an hundred or thousand marks, which is not gotten out of the fountains or rivers, but for the greatest part out of the sand in open places, Elevated from the waters.

Such sublime and dry places have been in Germany, also where the auriferous earth was carried down to the rivers, and separated from the gold, and even to this day where little grains of Zwitter or Tin are washed out, are grains of gold also found, not in low deep places, but scattered about the mountains and are usually melted with the Tin, whence tis that such Tin is generally wont to abound with gold, which thing I have frequently found experimentally.

The cause why gold is oftner found near rivers and streams is this, because that being carried on with force they wash away the sand, being lighter and leave behind them, the more heavy grains of gold, from which the remaining sand is washed away with less ado; but now the Rhenish gold, such as here is in Germany, and the like, is not pure, but mingled with silver and copper; nor is it always alone, or fine, like a metal, but in the form of an heavy and sulphureous powder, whose combustible sulphur being burnt and removed by fusion, it acquires a golden colour tenderness, ductibility and purity.

But that which is brought from India, is, as to appearance gold, and is some greater, some smaller grains, and not as that with us is, yet not fine, but some is found better than other some.

I sometime saw a dutch Merchant having a lump of this kind of gold well nigh fine or of Twenty four Carrats weighing some Lotons, but generally they are of the bigness of a milding sand. But that which is waist out in Hungaria, and Transilvania is esteemed the finest of all, which I have found equivalent to duckets.

Now I suppose that I have sufficiently demonstrated, that all gold is not generated by the central fire in the belly of the earth, but also in the superficies thereof, by the vertue of the superior stars, and not only gold, but other metals and minerals, especially δ and γ are in like manner generated, and δ most frequently, which is plentifully found every where in round or angulated little stones, for the most part of a golden Nature, and though commonly neglected yet deserve well to be observed.

Such

Such also are those flints which are within of a reddish colour containing a golden iron, for there is a great familiarity and friendship between δ and Θ , where under Iys hid, a great secret and in the third part shall be explained more at large.

Now for a further conviction of such as are incredulous, the metals are generated upwards or here above in a moist earth without the central seed, this example is conducible in marshy parts, and places that are always moist, the Superior Stars have a fit Subject to generate Metals in, witness Holland, where they yearly dig a peculiar turf or earth, which they burn instead of wood, which contains, besides sulphur, Arfnick, δ and γ yet, all is not thus, but only that which is dig'd out of the moist deep places, and is called *batr't*, the rest called *hem* seldom contains any thing other thing than, sulphur & a little Arfnick, whereas the other hath very much, sulphur and Arfnick being an unwholesome fire to such as are not there unto accustomed, which although it be in depth Twenty Thirty or Forty feet, yet do they scarce extract or dig out five or six, or at the utmost ten foot, because in some depth it wants sulphur altogether, and is unfit for the fire.

Now then such as try for bituminous Turf, or such as search for the depth of a Marsh, or seek after a sandy bottom, drawing forth the earth with long borriers or Caugers) do find that by how much the deeper they go, so much the less, sulphur they find, and at the bottom none at all.

Whence tis evident that sulphur Arfnick, or that Mineral that Iys hid in the earth received his Original from above, and not from beneath. But the most Metals are produced in the earths bowels, and the fewest nigh the Circumference, whose seed is found more powerful in the deep, than in the Circumference; for the fideral vertues do constantly haisten to the centre, and not finding further passage fight together, and strive each against the other, and cause a huge heat, by the repercussion whereof the whole globe grows warm, and is gravitated with all kinds of Minerals.

Thus then are all Minerals, and Metals procreated, as well in the deep as in the Circumference, out of a moist subtle Altral seed, with a fitable moisture wherein it frameth a body to it self, nor let any wonder that Metals are generated of an insensible, and most subtle warm vapour, if joynd with humidity, they fall not down from heaven as a stone from an house, but descend spiritual, and getting a fitting place in the earth do (by the waters mediation) put on a body, and get their weightiness from the earth, even as the seeds of vegetables and Animals, which (as is most evident) give only the form, increase and life, but supplis not the place of the body it self.

But most false is the foundation of such as imagine, that Metals have there Original from common running, Ψ and burning sulphur (each being a semi-metall) tis indeed certain that metals are born of Ψ & sulphur but not the common, but such aforementioned, viz. Altral, a sulphureous warm, dry, and spiritual soul, and terrestrial viscus water, from whose mutual conjunction (as of Male and Female Seed) all Metals are born.

That Erroneous Opinion hath been the cause of many labours on, Ψ and they are not a few, who have wasted all they had by this, their Philosophy. And how many have attempted to fix common, γ either with or without Gold or Silver, and do at this

day attempt the like, with hopes of turning it into Gold or Silver, but all in vain, my self have to my loss tried it, and how far I have come, the third part shall declare.

In like sort as great a number have attempted to extract running, Ψ out of Metals, intending to fix it (as the first of Metals) into Gold or Silver, but all in vain, for as the beginning was foolish, so the end terminates in loss; and such have chiefly with much trouble fought after the Ψ of Ψ or Antimony being perhaps seduced by the sayings of the Philosophers, who affirm that Ψ the father of all Metals reduced into Ψ may be easily Changed into Gold, but this is not that running Ψ but a viscus water, that may be handled like the first being of Metals, according as the Artificer willeth, and may be changed into any form. I cannot tell what madnes possesseth men that aim to reduce Ψ or δ into running Ψ in hopes of a more easy fixing it, whereas neither of both ever was running Ψ and in my opinion will never be, but grant it may be made Ψ to what will it be more profitable then Ψ it self, it being hereby made more volatile, and not more fixt, but say they Ψ is a purer substance then Ψ and will therefore the more freely be amalgamated and fixed with the Sun and γ no, by no means. Well! I will grant that Ψ may be made of Ψ or δ which yet I can hardly believe, what will it profit thee? Nothing at all; but now I readily believe, and have experienced that Ψ and δ being after a Philosophical manner reduced into Ψ that is, into a viscus water, is most easily joynd with the Θ and γ and is to be fixed even without them, but twas never seen that the putatious Ψ of δ did ever accomplish any praise worthy thing in the Meliorations of Metals. I grant that runn'g Ψ may easily be made out of any Metal by the addition of vulgar γ and I have tried it, but what profit comes therefrom; enquire of those that have to their loss practised thereabouts.

If running Ψ were the principle of metals, some small portion thereof would verily be found in all mines of metals, or in most of them, but because it is not there found it necessarily follows, that such opinion is to be accounted a vain fiction.

Now all Philosophers do unanimously testify that nature forms the first rudiments of metals, out of the Altral Spirit, and terrestrial water, by affirming that every thing may by art be reduced into that, out of which it was at first made.

And whereas metals may be reduced into a viscus water without any corrosive, and this by a due heat and digestion transmuted into more pure, and better metallick forms, tis undoubtedly credible that they proceed from hence, and not only metals, but also many stones, and mineral things, either containing metals, or void of them, found upon the earth, and under it, have their first beginnings after the like manner, my self having seen some mine-diggers, in sandy mountains digging for other things, who have accidentally chanced upon this *Gur* or *Kur*, thinking it to be a Lump of Fat, one of them carried it home, and anointed his shoes therewith, but the next morning he found them over laid with a stony crust, and the lump or mass it self converted into an hard stone, but I am not ignorant that stones are otherwise generated, the reason how, pertains not hereunto.

A metal being reduced into its first matter like to *Kur*, is in the Artificers hand to induce into it, what form he lists, nor can it indeed be ever meliorated

unless it be first reduced to its *prima materia*. In a solid metal, it cannot be perceived of what parts it is compounded, but being resolved, it's parts are discovered, and it being by extraction deprived of its proper Soul, wherein its life and whole dignity lodgeth it is no more a metal, but resembles an unshapen brittle earth, without metallick Liquability, and its whole goodness consists in a very little quantity of soul, and starchy masculine feed, the remaining body being a dead and vile earth.

Finally, even this (which I have mentioned in my treatise of Potable Gold) sufficiently confirms that metals are also created upon the earth, because, that not only the solar beams being collected in various not only the solar beams being collected in various subjects become corporeal, but even the heat of our usual fires doth likewise do the same thing which the Reader search and view the place. Nitre and other salts are evidently produced by the sun, in a moist earth, which thing will never be effected in a dry. And the Philosophers making mention of the melioration of metals, have always minded inceration, as exceeding necessary to their intention.

In this work, moisture is the patient, and heat supplies the place of an Agent; this is discernable in Vegetables, Animals and Minerals, there being nothing that can attain perfection, without due moistening or endure the action of a maturating heat.

And by how much the thicker and fatter the water is, by so much the fitter for a matrix, and therein feed will more greedily and speedily stick and germinate.

But by how much the thinner, it is by so much the more fit it is to be accounted for the seeds vegetation.

Water of it self cannot be made a metal, unless it be first impregnated with seed by the stars, and gifted with a Vegetating life; which seed is the original, the soul, and life of all metals; and how much the more of such seed they have, so much the better and more fit they necessarily are.

On this account I firmly adhere to this Opinion, That metals receive their Soul, Spirit, and Life from the Stars, as from an universal mother, and their Body from the Water as an universal mother, and derive the diversity of Bodies, and degrees of Goodness according to the Situation, purity or impurities thereof, and are digged out by men (for whose sake (as the noblest Creature) all things are made) with great greediness, costs, and hazards from the Bowels of the great Animal, and are prepared and elaborated for their many-fold Uses.

Let thus much suffice as to the generation of Metals; but now by what means they arrive to the utmost end of perfection and Dye, and are hindered in their growth, we will not pass over in silence.

Thus therefore the Case Stands, There is a certain time prefixt to all Creatures, how far they may come or protract their life, which predestinated time if it be cut off, and attains not unto its scope or end, it comes by accident and may not be imputed unto Nature, and this is done sundry ways according to the various tempers of such enemies as they meet withal, some are hurt by the cold Air, prohibiting their growth, as is evident in Metals digged from their mines or trunks and exposed to the air, then ceasing to grow, and were they ripe or unripe Metals, so remaining, but if they get a new matrix, then as the

seed of a plant on the Earth, they begin again to grow and hasten towards perfection. To some, as to Vegetables and Animals; the air is the life, of which being robbed, they expire and Dye. The air destroys Fish, the water is their life, but the death and destruction of two-footed and four-footed Animals.

Even as all the elements have their proper offspring which they cherish, so are they the destroyers of other things, which the rise and death of Metals clearly teacheth.

For as soon as ever (being conceived in the earth) they begin to grow, they become partakers of a certain saltish Nature, as their matrix, in which, and by which, they afterwards perfected, wherein as long as they remain uninterrupted, they go forward, and are bettered in quality and quantity, but as soon as ever their contrary, as Aire or common Water meets with them, they are stoppt from proceeding further in the matrix and Dye.

They being (because of this most subtle salt) while in being, most impatient of both *viz.* Water and Aire.

Now if the aire invades them, their life, consisting in a Volatile salt, is elevated and drawn back by the Stars: If water breaks in, they dissolve and are washed away, the matrix being destroyed by its contrary Element, whence 'tis that such Metals in their *primam Enis*, lying Embryon like, and obnoxious even to the smallest corruption, do perish, and never attain to the appointed perfection by reason of such destructive accidents and injuries, whose tender salt is gon into sulphur, and is no more subject to the corruption of either Water or Aire. As for those that are Mature and perfect, if they are not cut off from their stock being extracted out of the Earth, from which they have no more nutriment, their sulphurous covering being laid aside, the defence and safeguard of their Nature being banished, they rightly resemble a decrepid Old man, whose Radical moisture is dried up and are dissolved and eaten up by the same Altral Salt, or Vehement Corrosion, from whence they did spring, and thus are reduced unto Nothing; amongst which, *viz.* metals, as well as amongst Vegetables and Animals, Nature observes a perpetual Circulation of Life and Death.

It sometimes happens that the diggers finding a metal excavated by the Altral salt, like to the Honey Comb by the Bees, are accustomed to say, that they came thither too late, whence it is concluded that the same corrosion is the beginning and end of metals.

'Tis of small moment to know who first digged up metals applying them to use: *Adam* was the first to whom *GOD* revealed the Art, because he could not want it.

It seemeth certain, that that which was by his successors discovered to *Noah*, and from him propagated unto us will undoubtedly be conserved unto the Worlds end, because of its great necessity and benefit.

But as this Art is profitable and useful, and noble, so it is chargeable, costly, and dangerous, and also uncertain of getting gain, but yet not to be neglected on that account, it being an honest thing, and pleasing to *GOD*, and managed heretofore by many Prophets and Kings, and now at length, diversely had in great estimation by us Christians, because of its necessity.

He

He may well boast of earthly felicity, to whom *GOD* shall vouchsafe to give such a Light, of seeing by what Artifice Nature is to be holpen, and that which is superfluous and adhering to vile and subject metals every where, may be removed, and the defect supplied; such an one hath in very deed a rich and durable Mine; neither are Ghosts, Inundations of Waters, evil Tempests, unwholesome Vapours, and other inconveniences, that hinder from a purposed intention, to be feared. But verily man, by reason of the continued wickedness of his Life, being made incapable of this high Art and Science, is compelled to get out Metals from the Earths bowels, in the sweat of his brows, and to pass over his life in cares and labours.

And thus I conclude this Tract concerning the generation of Metals, and refer the Reader, desiring things more at large, to the Third Part, wherein is accurately taught of what property Metals are, how to be distinguished each from the other, opened without corrosives, reduced into their first matter, and

how by the benefit of art and fire, new and better Metals are to be generated out of that first matter.

Likewise, how they are to be examined by a far better way and manner than usual; how to be purged and separated each from the other, and also unfolding (as far as is permitted) a little Book of the most expert Philosopher *Paracelsus*, or his Book of *The Vexation of Alchymists*, whereby the honour due unto him (though much obscured by evil slanderers) may be again restored unto him, and the whole world may know that he was most expert in natural things, and wrote very faithfully, and left unto us a large light, though observed by a very few, for the encreasing and propagating whereof, and defending it against the haters of the Light, I will enter upon the Third Part, for my Neighbour's good, for the accomplishment whereof I pray *GOD*, the Creator of all things, and the Patron of Truth, mercifully to vouchsafe his assistance. Amen.

F I N I S.



THE THIRD PART OF THE Mineral Work.

Wherein under the Title of a Commentary on a little Book of *Paracelsus*, called, *The Heaven of Philosophers*, or a Book of *Vexations*, the *Transmutation of Metals* are Taught in general; with an Appendix demonstrating their particular *Procces*, *Melting*, *Exploration*, *Separation*, and other necessary Operations.

A Preface to the Reader.

Courteous Reader,

I Will not conceal from thee the reason why I have taken upon me in this Third Part to explain a Book of *Paracelsus*, called *The Heaven of Philosophers*, lest thou shouldst believe I wanted matter to write, did I not increase my Book by the Writings of other men. That Good which I have here decreed to write, I could have done even without the admission of *Paracelsus's* Books; but this properly is the cause, because *Paracelsus* in our precedent Age, published very many most elegant Books for the Publick Good, but obscure enough, and for this reason are by the unskillful accounted false, and are contemned; but yet because they are stored with Arcana's or Secrets, they are most highly to be esteemed. Now, after that I had perceived the said Books to be true, I did very impatiently bear such sinister reports of this man,

as blazed him abroad for one Ignorant of all things, and a *Vagabond*; who in very deed had but a few Equals in true Genuine Philology, Medicine, and Alchymy.

He did many good turns to all, especially to the Poor, of which many Testimonies are extant; and amongst others, that Epitaph is to be seen, which is in the Hospital of *St. Sebastian* at *Salzburg*, where he was buried, and to which he bequeathed his Goods, and is given in Capital Letters in a Marble, and erected in the Wall, the Tenour whereof I my self have read, and is thus: Here lies buried *Philippus Aureolus Paracelsus*, a famous Doctor of Medicine, who by a wonderful Art cured those direful Diseases, the Leprosy, Gout, Dropsy, and other incurable Contagions of the Body, and to his honour gave and bequeathed his Goods unto the Poor. He died in the year of our Lord, 1541. the 24th. of September.

K k

And

Printed by
J. W. at
Salzburg

And what hast thou now to say? Had he not been such a one as is mentioned in the Epitaph; the Magistrate would not have honoured him with so eminent an Encomium. Moreover, all prudent Lovers of Truth do to this day believe, that he never had his equal: And although through the Envy of some unlearned men he is despised, yet it derogates nothing from him, for he will still remain Paracelsus.

And now, seeing that our Paracelsus hath hitherto undergone such bitter things, and that none have dared to open their mouths against those slanders, I will attempt the explication and illustration of his chiefest Books, and prove that he was not either a Lye or Impostor, but

most experienced in the light of Nature; and to this end will I begin with his Heaven of Philosophers: I will not avow, that he could make heaps of Gold and Silver, (himself mentioning not any such thing, but he only discovers the possibility of the thing, which even I also will endeavour to declare, although I am ignorant of doing it in great quantities, which thing I am not greedy after) yet 'tis my contention to be capable of discovering truth from falsehood, and convince such as are incredulous, having some hopes, that by this my faithful writing, an occasion will be administered unto others of searching after and obtaining their desired end. Amen.

The Heaven of the Philosophers :

O R,

A Book of Vexations.

By Philippus Theophrastus Paracelsus.

The Art and Nature of Alchymy, and what is to be thought concerning it; being comprehended in Seven undoubted Rules, respecting the Seven vulgar Metals.

The PREFACE. Theophrastus Paracelsus to all Alchymists and Readers of this little Book.

Beloved and Expert of the Art of Alchymy, and all ye who promise to your selves much Riches and Gains of much Gold and Silver, which thing Alchymy doth plentifully teach, and ye (who being occupied about these things) would be vexed, and cannot cease until you have experienced what it gives, and what promises it performs; verily, daily Experience teacheth, that there is not one of a thousand that becomes Master of his Desire; which I will not call the fault of the Art or Nature, but the unskilfulness of the Artificer.

Wherefore I will not stuff this little Book of Alchymy with difficult Art and tedious Labours, as the common Alchymists are wont to do.

Let 8 melt it with Nitre and Tartar, of this take one Lot, of Gold one Lot, of Tin three drams, of Schlich one dram, of Sulphur two Lots, of Vitriol two Lots; let them flow with in a Crucible with Arfenick. Because also all the signs of Heaven, and the characters of the Stars and Planets, together with their changed and inverted terms and names, as also the Receptacles of the matter, and the Instruments of Artificers are usually very well known; It will not be needful to treat of these things anew in this Book, although herein are used the signs, names, and characters, when it seems convenient and profitable.

Now here is delivered another Reason of Alchymy, in seven Rules, accommodated to the seven Metals, after an infallible manner, although in Expressions not adorned, but undressed and simple: Yet, as to the sense, the expressions are abstruse and profound as can be; which may deservedly be called the Mysteries and Summ of all Alchymy; from which even the mysteries of other things may be produced, divined, and known, with many new Speculations, from whence new Cognitions and won-

derous Operations, do (by examining and trying) come forth to the Light, that in many places they are even, in the Examen or trial it self, found to contradict the Pleasings of the Philosophers.

Likewise in this Art nothing is more certain, than that which is least apprehended and believed; and this is the only fault and cause of all various Operations in Alchymy; whence 'tis that many suffer loss by their own unskilfulness, and so labour in vain, either because there's more of the matter, or less, or equal weight, whence the thing is more corrupted in operation and destroyed; or if the thing is truly lighted on, it is become more exalted, and tends unto Perfection.

For the way is most easy, but is found by but very few. It's also expedient, that an ingenious man consider the Art and certain Rule of Alchymy, whether he would make something or nothing: he ought to make a nothing, that he may bring something into nothing, and that something may be again generated out of nothing; which Saying is incredible, but yet most true; Corruption makes a good thing perfect: Tea, good cannot appear, because of his covering and hider; good also is begun whilst 'tis hidden; the hider ought to be removed and destroyed, then the good being freed, will manifestly appear in his lustre, the Gloss: the hider or covering is the Mountain, Sand, Earth, or Stone where in the Metal was generated. Now every visible metal is the obscurer or hider of the other six metals.

Because therefore that by the Element of Fire Imperfect things are corrupted, burnt up, and sublimed such as the five metals, 8, 9, 10, 11, & 12 are; but the Perfect not at all, viz. the two most Noble, the 13 and the 14, therefore they ought to abide even in the fire, and to assume their body out of the other Imperfect metals, in which they are destroyed, and to appear visibly; which thing

how

how it may be done, and what helps are thereto necessary, shall be taught in the seven Rules, viz. What the nature and property of every metal is; what operation he hath, being mixt with others; and what he can do.

'Tis also to be observed, that these seven Rules cannot forthwith be understood by one that is somewhat dull, at the first reading and view, a weak understanding cannot compass hard things. Hence every of these Rules wants much search and travel. Some are puff up and proud, supposing themselves well to understand; and these things are childish, which are here delivered, and they know far better, and do plainly condemn these things of mine.

Gloub.] This Preface is of it self peripetuous, and needs not any singular Interpretation or Explication; but indeed the Process which he mentions requires a more accurate Observation.

Take Antimony, melt it with Tartar and Nitre, of this take one Lot; of Gold one Lot; of Tin three drams; of Schlich one dram; of Sulphur two Lots; of Vitriol two Lots: let them flow with Silver in a Crucible with Arfenick.

This is the Process of making Gold and Silver, which Paracelsus will not have to be accounted like unto other Processes, of much labour and long time, but is confident, that by the help hereof he can get Gold and Silver with little labour, time, and costs.

'Tis not to be doubted, but that this hath been tried by thousands, and frustrated the hope of such as laboured thereabouts; and that not without cause, they imagining that these are foolish ingredients to be taken for such work; my self have heard many of those that have made trial, to be very much displeas'd: By what means can gold and silver be made by volatile and preying ravenous things, such as

8, Vitriol, Sulphur, & Arfenick are, which do not only yield from themselves no Gold or Silver, but even corrupt them, and bring them to fume, or at the least turn them to Scoria; my self trying this when I had blown them altogether, I found that these metalline species, as Schlich, Vitriol, Sulphur, and Arfenick did, corrupt the Sun and Moon, spoiling of its metalline form, and transmuted it into Scoria or dross.

But now this is the thing which Paracelsus requires and aims at, and therefore should not by any means hinder or deter us; he presently, for the better explication of his meaning, adds, Something ought to be made a Nothing; and again, the Nothing to be made Something; which thing the unskilful doth not heed or believe, that Metals being corrupted and made Scoria, when by the benefit of Art they are reduced, are by this means meliorated; which albeit it be most true, yet are they but a very few (as he faith) who believe it to be true: and he confirms the whole process throughout the Chapter, even to the Chapter of 9, and explains it, saying, Corruption makes a good thing perfect.

The Good cannot appear by reason of its covering. The hider or veil must be taken away, that the Good may be freed and become conspicuous; that also the first covering, under which metals are hidden, and wherein they are generated, is a Mountain, Sand, Stone, or Earth, all which are to be separated by fusion, that the metals may become pure.

Here the Metallurgist desists, and is clearly ignorant of any other covering. But Paracelsus addeth, That each metal is a hider of the other metals, which thing the seven Rules do largely demonstrate, and advieth the Chymist not to rest satisfied, when he hath gotten from the Mines a vendible metal, as 8, 9, 10, 11, melted from the dross, but to consult further with natural Philology, and

to examin whether or no these are pure enough, without any adhering and deteriorating veil.

How great the difference is betwixt a rude and a vile Mineral (where the metal is largely dispers'd and commixt with much stony matter and other impurities) and a tractable metal faithfully separated, is well known. So much, and more, is the difference betwixt a vulgar and imperfect metal, and the Gold and Silver which it contains shut up in its bowels. But because the melting of metals out of their mines is, by reason of its long use, grown vile, and not esteemed an Art, but a Trade, and every where exercised, without any ones admiration; yet in its beginning, before it became so commonly known, it was worthily accounted a deep Secret, although now disrespected. We may not doubt, but that even yet another veil adheres to metals, and may with as much facility be removed; and its inward, pure, and fixt center, Gold and Silver be melted out and separated, if the way were but known. But because men do not bestow any further Labour and Industry in searching, and the use of vulgar metals is highly necessary, we rest contented, in that metals once melted from their mines become malleable, and fitted for the use of man: Nor is this unadvisedly done, for the life of man can as little want Iron, 12, 13, and Lead, as it can gold and silver.

Paracelsus teacheth, That imperfect metals are corrupted and brought into a nothing, by the force of fire; which they cannot sustain or bear; but their good parts, Gold and Silver, cannot be destroyed; but in the great strait and force of fire do come together out of the imperfect metals, and mutually defend each other, the impure portion being burnt up and removed.

Now then, that the species and ingredients of this process may be understood, something must be mentioned by us thereabouts.

Thus then 'tis written; R. 8 melt it with Nitre and Tartar, of this take one lot; 'tis to be noted that you are not to take the lot of the whole molten mass, but of one of the two, either the upper part being the Scoria, or inferior or lower being the Regulus, which this flowing mixture sends downward.

But which it is, it cannot be perceived by the words; yet because Paracelsus's intention here is to destroy gold and silver by the admixtion of the foresaid ingredients, and to bring them to nothing, out of which nothing the destroyed augmentation of the sun may be afterwards by some additament, obtained, in reducing it, it seems probable to think that the Scoria of the mixture is not to be taken, but the Regulus, which hath Ingrefs into Tin, Arfenick, and Schlich, and unites them with gold and silver, for it is the Property of the Regulus, to unite & conjoin contrary Metals and Minerals.

Tin is joined with malleable metals, and melted and suffers the fire with them, brings them into Scoria, the which thing Sulphur, Vitriol, and Schlich, also perform, and are here used by Paracelsus for no other end than to corrupt the sun and moon, and bring them into Scoria. But what schlich (Schlicht) this is, because no proper name of Gold, 13, 14, 15, or 16, is added, no body can easily tell, for this is called schlicht by Chymists and Metallurgists when they take a Mineral excellently well ground, and washed with water, thereby separating the mineral or the rubifit and stone, the heavier, and more noble part of the

K k 2 metal,

metal remaining in the bottom of the vessel, which examining they thereby Conjecture the value of the metal or mineral: this labour they call a bringing into *Schlich*, or also *Secher*, and because all metals may be reduced into schlichs or calx, this word *Schlich* or *Calx* may suit with all metals, or else it may be that most small dust or powder in polishing mills, (*Schleiff-muhten*) where various Iron Instruments, Swords, Breast-plates, and other Arms are Polished, and which is wont to be under the grinding stone in deep guttars destinated to that purpose, or gathered in wooden vessels, and sold to such as dy black cloaths, and is called *calx* or *Schlich*. But now whether or no, he means this or the calx of any other metal, it is uncertain, nor doth it much concern; for the Sun and ☉ may be reduced into a nothing without any of these Calces, and may be again augmented, and brought into something, as you shall see in the following Chapters of the Transmutation of metals.

Vain was their expectation who thought to turn all these species, thus blown together, into Gold and Silver, but yet could not get any other thing than a yellow, or spadiceous *Scoria* contrary to their hopes but the Coruscation (*Blitz*) is most blessed and gladfome, if any one can get by reduction from a destroyed metal brought into *Scoria*, a most noble one and better than heretofore it was. But this destruction and reduction is not uniform, but is perfected many several ways as the following Chapters teach.

The First Rule.

Of the Nature and Property of Mercury.

ALL things are absconded and hidden in all things, or hider of the rest, and is a Corporeal Body, External, Visible, Moveable: all fluxes are manifest in this vessel, for this vessel is a Corporeal Spirit, and therefore all Coagulations, and Confluences are captivated and shut up therein being overcome by its flux compassed about and strengthened thereby, what this flux is, its cause and name what it is called, cannot be found, because there is no heat which may be therewith compared. The burning of the Gehennal Fire may be likened thereunto, on which account this Flux hath nothing at all of Commonly or Affinity with other fluxes, which are melted by the heat of common fire, and become hard and coagulated by natural cold. These fluxings or meltings cannot thus operate with ☿, they are too weak, he values them not; hence 'tis to be observed, that the mortal Virtues of the four Elements have no ingressive Operations upon the Celestial Virtues, which Virtues we also call Quintessence, because Elements cannot either give unto, or take any thing from this Quintessence; the Celestial or Infernal Virtue cares not for the four Elements.

Hence note, That none of the Elements, nor any Elementary thing, be it dry or moist, hot or cold, none of these can do any thing against that Quintessential Virtue, but each hath its operation and efficacy for its self apart.

[Claub.] In this Chapter or first Rule of ☿, *Paracelsus* useth succinct but yet periphrastic words, saying, that the fluidity of Mercury ariseth not from the four corruptible Elements, but from the Quintessence, and therefore hath not any affinity with these Elementary fluxings and meltings. Now, what

this Quintessence properly is, which *Paracelsus* here mentions, much might be spoken, but 'tis not so convenient at this time, my self and other Philosophers have largely treated thereof, and therefore speak not of it now.

This only I add over and above, That *Paracelsus* will have the Quintessence to be a thing not subject to the four Elements, but permanent and incorruptible, whereby he gives to understand, That seeing 'tis so, that the fluidity of Mercury hath its originality from the Quintessence, and not elementary Fire, so its coagulation is in like manner to be made by the Quintessence and not by the elementary Fires, be they hot or cold.

But now, what that Quintessence is, that coagulates Mercury, and transmuteth him into Gold or Silver, it may be easily conjectured, that it is not to be sought for out of Vegetables and Animals, but to be extracted out of Metals, and ought to be much more pure, fixt, and meltable than they are.

Many are the things which *Paracelsus* hath written of this Quintessence, attributing great Virtues thereunto; he that desires it, may read thereof in his Writings. Likewise many Philosophers affirm it to be a thing reduced by the benefit of Art into the purest and highest substance. Which name of Quintessence, some there are that attribute unto that Tincture, wherewith perfections are wont to be made. By which it is evident, That by the name of Quintessence is alwaies understood the most pure, the best, and the most powerful part of a thing. But be it what it will, 'tis clear, That Mercury is a wonderful subject, nor is to be coagulated and fixed so easily, as many have fallily believed, and tried the contrary to their great loss.

Many are the Coals which have been vainly consumed about his fixation, and are consumed, although alwaies in vain; my self have also, though not often, handled him with a great deal of tediousness, which although not permanently fixt, yet observing therein many singular things, of which I count it expedient to relate something. In him is a most great power and virtue, most friendly to Metals; he is easily mixed with the purest Metals, and most difficultly with the impure; which denotes him to be of a most pure nature: And now, if he come to be fixed, I could demonstrate, if need were, by indubitable reasons, that a thing more pure than Gold would flow therefrom. It alwaies produceth something as often as it is added to Metals, and constrained to undergo some fire, helping them evidently, even whilst it is in its Volatility; what then would it do, if being therewith fixed, it were along while melted with them in the Fire?

This I add for the better Lights sake.

When I was in my youthful days, and saw many attempting to fix Mercury with Gold and Silver, by Amalgamation, Sublimation, Coagulation, Precipitation, and other Labours of that kind, to transmute it into Gold and Silver; my self also attempted somewhat about him, by the advice of *Paracelsus*'s Sayings, That in Saturn its Coagulation is to be found. On this account I melted in a little Crucible 6 or 7 parts of Lead, and added one part of Mercury; this I put into another Crucible where Nitre did flow, that it might be covered-over thereby; in the mean while I melted the glass of ☿, (being made of 4 parts of *Aluminium*, and one part of Flints) in a greater Crucible, whereto I put the two former Crucibles heated to be covered by the glass.

These

These three I again sunk into a new Crucible flowing with the glass of ☿, thinking that I should this way keep in the volatile Gueft, having now shut up Mercury in so many walls, I put him to the fire, intending to fix him, and then indeed he sustained it, not being able to break through; but increasing my fire, and the Glass melting with Nitre, away he goes leaving an empty nest, and left ☿'s weight whole and perfect, which having examined, it yielded a grain of Silver heavier than the common ☿ which I believed to be Mercury fixt and coagulated, but reiterating that labour, I found it to be otherwise, viz. that the Mercury was not it self fixed, but flown away, but yet by his occult power penetrated and meliorated the lead, that it afforded a little silver; also the whole mass of lead was hereby made black, and hardened like tin, whereby I perceived, that Mercury being a pure, meer fiery spirit, is most impatient of the Fire, and cannot be fixed without a Quintessence.

But thus much indeed it can do, if being joined with other metals, it can be so long held, as to endure the Fire; although it presently vanisheth away, it doth in a manner change them, not by bettering them, but stirring them up by its penetration, that they may mutually act each upon the other, and receive a meliorating faculty, although without any great profit, as far as I know, but I only intend to discover its possibility, its miraculous and almost unsearchable power, for it may deservedly be esteemed a Miracle of Nature. It is a meer invisible Fire; albeit such as are ignorant account it cold, and by Art it may be made far more fiery and volatile; which I sometimes have tried, where being often injected into a vehement fire, again and again, and received in Glasses, it hath elevated it self without any fire, and gone away into its own Chaos. In a word, many men have accomplished prodigious things with Mercury, but all of them without any fruit; of which more shall be spoken in its place.

The Second Rule.

Of Jupiter and his Nature.

WHATSOEVER thing is manifest, (as the Body of Jupiter for example) the six other Corporeal Metals are therein hidden spiritually, and one more profound and remote than another. Jupiter partakes not of the quintessence, but of the nature of the four Elements, therefore his fluidity is manifested by a little heat of the Fire, and his coagulation in like sort perfected by a little cold, and hath communion with the rest of the metalline Fluxes.

Wherefore by how much one thing is in nature like to another, by so much the reader is it united thereto, if they mutually touch one another; that also which is high, is more efficacious and sensible; for that which is afar off, doth not enforce, nor is that which is remote, how great soever it be, much feared. Hence 'tis that heaven is not desired, because 'tis far distant, nor seen by any one; neither is hell feared, because it is far off, whose form none hath known and seen, nor felt the Torment, and therefore 'tis valued as nothing. Those things then that are absent, are little regarded, or plainly rejected, being constrained in a thick place, for by the property of the place every thing is deteriorated or

meliorated; which thing may be proved by many Examples.

By how much therefore Jupiter is farther off from ☿ and ☽, and nigher to the Sun and Moon, by so much the more Golden or Silver-like is he in his own body, and seems more great, potent, pelucid, sensible, more fair, pleasant, notable, palpable, more true and more certain than elongated, or at a distance. On the contrary, by how much the more he is elongated, by so much the more vile and abject he is in the matters aforesaid: for things present are alwaies more notable than those which are absent: by how much any thing visible is nearer, by so much a thing invisible is more remote. Therefore it behoves the Alchymist to study how he may place Jupiter in a spiritual Arcanum and remote place in which are Sol and Luna; and that he may take Sol and Luna from far, and bring them near, into a place where Jupiter existeth corporally, so that the Sol and Luna may also be corporal and truly present before his eyes in the Examen. For there are various labours and modes of transmuting metals from their imperfection, into a perfect state.

To mix one with another, and again to separate the one from the other pure and sincere, is nothing else but a genuine permutation made by the labour of Alchymy. Note, that Jupiter hath much Gold, and not a little Silver. Put to him Saturn and Luna, and the Luna will be augmented by the rest.

[Claub.] Although I do not certainly know the reason why *Paracelsus* beginning with Mercury, passeth next to Jupiter; nevertheless it is very probable that he would thereby point at some singular Mystery. Here he repeateth the former sentence, saying, Every visible metal hideth in it self the rest invisible, from which if we would reap any good, their invisible and spiritual Gold is to be taken and brought near, or to be visible; and on the contrary, the visible to be removed afar off and made invisible. But how this ought to be done he doth not teach, but leaves the Reader to search it out in his seven Canons or Rules, which are very difficult to be understood not only by a rude Tyro, but even by one well exercised: And seeing that not one in a thousand understands them, it is no wonder that his Writings have been had in Contempt.

Without doubt he aimed at our good, supposing he had written very clearly, and directed his speech in such a manner, as if he had to do with one that is skillful in the metalline nature, without having any respect to the common blindness and ignorance, whereby he received great thanks, and was highly esteemed of by all.

But what shall we say or do? 'Tis bad meeting with wicked proud men, as thou most clearly writest; yet because the unexercised, if they have even once erred, they wrack and abuse the Writer with meer flanders: Hence it comes to pass, that many desire rather to be silent, and leave unto fools their own toys and vanities: But the Cafe being with more accurate examination considered, it seemeth evil to be revenged on the Innocent as well as the Guilty.

As for Tin, if thou searchest into its nature and property, it is a pure (compared with the other metals) unripe metal, abounding with very much combustible Sulphur, whereby it obtains its liquification and corruption in the fire; which being removed (and it may be done with a gentle fire) it loseth its metalline fluidity, and very much resembles unmelted alhes whereto if you add another sulphur, whereby that alhes may turn into a metal; and again

mixture of the Metals, and what I understand thereby? for Answer, They are to be so united with an implanted Love, that they freely join together, and so remain equally, enduring prosperity and adversity; and neither of them discernible from the other, that they penetrate the shut Gates, and thick Walls, without any obstacle; that the Volatile exhales not in the Fire: that which is liquable, separates not from what is illiquable; thereby penetrating the Vessel, leaving behind it, the more fixt, or rougher part, in the form of *Scoria*: But thou mayst demand by what means I spiritualize the Metals, and radically conjoin them; what, must they first be dissolved in *Aqua fortis*, or other corrosive Spirits, and be distilled by an *Alembick*, that they may become Volatile? No, I mean not any of this; this kind of spiritualization is a meer deceitful, and cheating Labour, hindering many thousands, which otherwise would be nigher to the Truth: All the Philosphers dissuade you therefrom, that you do not torment the Metals with sharp spirits, whereby instead of being perfected, they are corrupted and mortified radically. 'Tis madness to pour more Water into any one that is suffocated with Water, thereby to restore him to Life; this is to put the Bridle on the Horse's Tail. Now 'tis evident, that the superfluity in imperfect Metals, is their combustibile and corrosive Sulphur; and by how much, the more imperfect and base they are, so much the more of a combustibile Sulphur do they possess: an evident Testimony, of which we have in Iron, or δ : 'Tis only his acid Sulphur that deprives him of every degree of dignity, which grows, acid, and vitriolated Sulphur, did he not so much abound withal, he would not contract Rust so easily; and by the attractive Moisture be so soon corrupted: and were he not so quickly rusty, he would be put to better uses, than now he is. But you may object, that you cannot conceive, how he can have such a corrosive Sulphur, whence should it happen to him, for the Mineral, and Stones, whence he is extracted, do not appear to be impregnated with such a Sulphur; whence comes it therefore to be in him? Besides, if the Mineral did partake of such a Sulphur, surely it would never abide a Fire so violent, but it would be driven away.

My Friend, thou dost not at all understand the Nature of Metals, and for what end it was, that Nature left such a Sulphur in Iron, and the other imperfect Metals; for it is a Nutrimnt unto their better Parts, being like an *Embryo*, and as it were, a Covering or a Matrix, in which a noble Child is maturated, and is (after the ripeness of the pure Metal) thence excluded. For Nature's intention was not, that Iron should be but Iron, but rather Gold; but the digger not willing to wait so long, and knowing the manifold uses of Iron, allows not time for it to become Gold, just like the Fisher-man (who catching a very small Fish, and the Fish desiring to return into the Water, until being grown bigger, he might the better fill the Platter) said, nay, but I will hold thee, as thou art, for 'tis uncertain, whether or no, being grown bigger, thou mayst then be found. Just thus doth the Miner do, he waits not the Irons becoming Gold, but puts it to its present use.

'Tis commonly known, that there is abundance of corrosive Salt therein, which is not combustibile in melting Fire, neither needs it any further de-

monstration; it having been also treated of in the Annotations of my Appendix: and that thou mayst see that a Metal can preserve, and keep its volatile combustibile Sulphur in a melting Furnace, I will expound it somewhat clearer: Gold having already obtained its perfection (it being a mature product) Nature hath separated this combustibile Sulphur, or acid volatile Salt therefrom; because it needs it not for any further nutriment: neither would it hold it, if it should be put unto it, but thrusts it from it in the Fire, and hath no affinity therewith, as the other imperfect Metals have.

Now *Luna* although it be not so completely perfect as *Sol*; yet, 'tis more perfect than the others, and hath notwithstanding, a Commerce with this sulphureous Salt; yea, so as to hold common Sulphur a very long while in a great heat, which we shall declare anon in the separation of Metals; and if γ (which is almost a ripe Metal) doth thus, questionless the other more imperfect ones will do it more willingly; which thing, that you may be the more assured of, incorporate a sulphureous Salt with any Metal, and continue it in a great heat; and after a few hours you shall see that your Metal will hold that Sulphur, and defend it against the force of Fire; but if a Metal be in some sort freed from this sulphureous Salt by a melting Fire, it doth again receive and hold it; Will it not therefore hold its own, wherein it was born and from whence it came forth. δ excels them all as to this, being not only a friend to sulphureous and corrosive Salts, but also to Vicious which (when it cannot have acid salts) it doth by a magnetick power attract and defend these in the fire. For example; mix the filings of δ with Nitre and salt of Tartar, and these salts, in a melting Fire, will be fixed with δ , and resist the Fire. Which thing is most worthy observation, and by no means to be neglected.

But to return to my former purpose of demonstrating, that Imperfect Metals are not only, not bettered by corrosive salts and spirits, but are rather corrupted: Daily experience doth prove it before the eyes, that all such as have used corrosive spirits in their bettering of metals, have done no good at all therewith, but have, to their hurt, lost both their time and labour: whereas those that have used other *menstruums* that are not corrosive, have profited more therefrom, and have seen more than they have sought; such as those are in a way tending to dissolve metals without corrosives; to make them spiritual, and radically to unite them, that they may mutually act in, and sustain or undergo the Fire alike, and may cooperate to purity and perfection, and may enable themselves. Of which *Spiritualization* more shall be spoken in the Sixth Chapter, where *Paracelsus* also treats thereof. This therefore do I affirm of δ , that he must be handled with such *menstruums* as are not only not corrosive, but contrary to Corrosives, and such as mollify and separate those Corrosives which the Metals hold in fusion, that so for the timeto come they may attract no more any moisture, and thereby contract Rust, and be corrupted; but may be rather able to preserve and defend themselves against Corrosives and combustibile Sulphur. But let none think, that δ being by this Antidote freed from its thick, earthy, and combustibile, and corrosive sulphur, will be wholly turned into ϵ , for 'tis the smallest part of δ that is good: by how much the ϵ is more noble than common δ , by so much is the δ , from whence

whence the Sol is separated more vild than other Iron, and the remainder is nothing else but a moist vild Earth or *Scoria*, void of all metallick fusion. The milk of a Cow or another Animal, if unmixt with water, is good milk; but yet 'tis far inferior in goodness to pure, good, well-wrought Butter; and by how much milk is more vild than butter, by so much is the whey and acid milk from whence the Cream is separated, more vild than that which is sweet and abounds with Cream. If generous wine be spoiled of its spirit most sweet and most excellent, by the benefit of Distillation, one part of that is better than 12 parts of wine out of which it was extracted; and the remainder cannot be wine any more, but is much inferior to good wine, as wine is to the spirit.

The like is it with Metals, which being deprived of their soul, whereby they obtained a metallick form, they can no more be malleable Metals. Therefore 'tis good to consider whether or no in the separation of \ominus out of the Imperfect metals, it will be answerable (in value) to the metal, and other Expences necessary about extracting it; but now, if you know how to apply the residue of the Metal to other uses, you may with the more confidence attempt the separation. But to return to the words of *Paracelsus*, I will shew how δ may, through η 's help, arrive to a Kingly dignity. I have before said, that there is no familiarity between the most fusile and most hard metal, but the one will be gone away in fume before the other will melt, and that we cannot want η in the separation of δ ; but how it is to be handled, I will briefly explain.

Saturn of himself is liquable and volatile, but yet can be made illiquable and fixt without detriment of the Radical Moisture or Metallick Nature; so as to undergo the same Fire with δ , and being brought to this pass, it is then fit for the separation of δ . 'Tis many waies made illiquable (*hartflüssig*) but the best way is by fixed Salts, of a contrary nature to the superfluous Sulphur in δ , and excellently well separated from the *Reguli* made of δ ; for Nitre and Salt of Tartar do not only harden η , but unite other metals with him, making them spiritual, and most like to transparent, soluble Glass, the which having sustained the Fire their proper time, the Agent being taken away, and the Patient sufficiently purged, the purest part of the Metals, thus spiritually mixt together, doth by the force of η separate from the other unprofitable part. The *Regulus* is purged easily, so that there's no need of separating the whole Mass by precipitation and reducing it into *Reguli*; but η , by his innate force, doth in its due time finish the separation or precipitation of the pure from the impure, of metals thus spiritually commixt and united. This is enough spoken concerning the way of separating gold out of δ , by η , viz. η being first fixed by salts, and made hard to melt, so as to endure the same force of Fire with δ , or otherwise 'twill be impossible to have any thing from δ by the usual way of the Refiners, by the help of scorifying with η (*mit antfeben*) and separation (*abtreiben*) which even as χ also doth not stay with common Lead in a strong fire, but separate themselves and go into *Scoria*; the which we have also hinted in the First Part of this little Book, whereto we refer the Reader. This separation of \ominus out of δ , may be done with *Regulus* of δ and Nitre, and in some manner better than with common Lead, but that I do not deliver the whole Process from top

to bottom, let no body wonder thereat, for then the Book would grow to too great a bulk, and I should not receive any reward the more from the Unthankful: Let it suffice, that I have declared the manner and the Species wherewith 'tis to be done; for 'tis for the sake of such Chymists as are most expert in the Fire and Metalline Works that I write, and not for the common Deffilers of Waters. And as touching what may tend to illustrate what is said, it shall be supplied with some Processes at the end of the seven Rules.

Whereas I have attributed to δ in the First Part of this Treatise and elsewhere, that he doth not only unwillingly deliver his own gold, but also if any be either accidentally, or of set purpose, added thereto, he swallows it up and hides it, and will not restore it without detriment and loss. Some body may admire how 'tis possible for to be done so easily by η and Salts; let him know that this Extraction of \ominus out of δ is not any the common Examen or Trial, (*abtreiben*), but a true and Philosophical separation (*Seigetung*) wherewith δ being well dissolved, is most thoroughly separated from his thick and hard body, concerning which, I never met with any full pregnant Processes any where. And albeit that I am not ignorant that many, yea most that read, will not have any higher thought or consideration, yet I say that there is something else hereunder; and do believe, that it is to be esteemed far more excellent than *Sol* itself; which that thou maist not over-much trouble thy head about, I will not be shy in communicating it also unto thee. viz. Out of Iron is prepared a Salt without any corrosive, which is able to extract the soul from Gold, that it will remain half dead. But δ will be impregnated as it were divinely, so as to be able to give forth a golden Child: the debilitated Gold will recover its lost Colour and Virtue by δ and δ . Other Philosophers have likewise made mention hereof, viz. that δ will not spare even the King, out of whose bowels he will steal Treasures, and will not blush to adorn himself with the same. Concerning which Secret the most famous *Sandovv* wrote on this wile. "The Chymists know how to change Iron into Copper or \ominus , without the Sun: Others there are that can make \ominus out of η ; but if they knew how to administer the Solar Nature to these mutations, questionless they would find a thing more precious than any Treasure. On which account I say, that we must not be ignorant of what metals are to be conjoined one with the other, and whose nature of them corresponds to Nature. There is therefore given one metal, which hath a power to consume the other metals, for it is as it were almost their waiter and their mother; one thing there is that only resists it, and is bettered thereby, viz. the *immundum Radicale* of the Sun and Moon; but that I may discover it, 'tis called *Chalybs*.

Thus you see, that from δ also some good is to be gotten, although all speak ill of him; and indeed he is wicked if he gets possession: Nor will he spare the highest Powers, from whom he will forcibly wrest their hidden Treasures, but yet by Commerce with η he will again repay it in time to be distributed amongst the subjects; although the king being robb'd of his goods, looks pale upon it, yet he lays not down his Life, and he remaining alive, there is no cause of complaining, for as long as the Riches are not exported, but remain in the King-

dom, distributed amongst the subjects, he is able to receive his former majesty and splendor from his Revenues, and to gather new Riches, and preserve his kingly dignity whole and sound.

Here I foresee that our common Know-littles, in the light of Nature, will traduce me, as if I interpret *Sandivoo's Chalybs* to be common δ , and say that 'tis not to be understood according to the Letter, but the Author would hint somewhat else there by; but 'tis no matter, what I have written, I have written, and that not without cause. I am not ignorant, that he means not common Iron no more than I, but his inmost Magnetick force and power, or essence, prepared without corrofive, and known to few, which doth most greedily extract and transmute the soul of Gold above all other things. And herewith we will rest and cease.

The Fourth Rule.

Of the Nature of ϱ .

THE other Six Metals have in ϱ framed all their colours, and the medium of their Flux (with inconstancy) into an External body. It would be therefore profitable to hint to the understanding by some examples, by what means the visible may by the benefit of Fire be made invisible, and this again made visible and material. All combustible things may naturally be changed in the Fire, out of one form into another, as into a Coal, Soot, Ashes, Glafs, Colours, Stones, Earth, but the Earth is reduced into sundry metallick bodies; and if a metal combust or corrupted with old age, is thereby become unmallickable, sharp, and brittle, let it well flow, and will again become malleable.

[*Quaest.*] Although that ϱ being malleable more than all the metals, in and out of the Fire, is fit for all Operations, yet even this is not void of a combustible sulphur, but is radically polluted therewith, so that it will melt easily, of it self, without addition of any other sulphur, be reduced into Scoria, and be corrupted, which corruption is occasioned by the muchness of its combustible sulphur; Gold and Silver being void of that Sulphur, are not subject to destruction. So that, although they undergo the Fire a most long season, yet go they not into Scoria like the other imperfect bodies; and for the reducing of them into ashes, combustible sulphur too must be added; whereas the imperfect metals too much abounding with the same, are changed by a most light heat into Ashes, Powder, or Scoria, which Scoria's are melted into either transparent or darkish tinted Glafs, according to the nature of the metal; which Glafs may be melted into malleable Metal, and again into Ashes and Glafs, as you please, but always with some loss, by reason of some combust parts irreducible into metal, the metal also remaining, as it was at first, without being any thing bettered.

He who knows how to melt Metals into pellucid Glafs, by the addition not of metallick things, but of such things as have affinity with the metals, as Salts, Sand, or Stones, shall in reducing them, always find his metal better than it was in the beginning: And that the Reader, for whose sake I have written these things, may the more thoroughly understand my mind, I will explain it somewhat more clearly. *Paracelsus* hath above affirmed, That eve-

ry visible metal is an hinder of the other metals lying hid invisibly therein, and that the hinder is to be removed, if you would that those visible metals become visible and corporeal, which being most truly spoken, I know not what light it may be illustrated withal. The words also are succinct and easie to be understood, yet no body believes them; There's scarce one amongst an hundred that conceives what they tend unto. *Metals cannot be changed without putting off their metalline form*; for if you keep them along time in Flux, by themselves, or joined with others, if they remain in their Corporeality, they cannot help each the other, but being destroyed either by themselves, or joined with other Metals, and nourished in the fire their due time, it cannot otherwise be, but that they should be bettered, for so long as it retains its metalline form, it cannot be holpen. 'Tis necessary that a hard body be broken and annihilated, before there can be made a separation of the pure from the impure.

But this is to be done by a genuine Chymical manner, and they are to be dissolved and thoroughly opened, with things of affinity with them, whereby the purer parts may be united, and the more gross may be separated. If a metal be forced with a most vehement Fire, its parts do firmly hold together; for if it be fixt, then the parts abide in the Fire; but if volatile, then the parts thereof fly away together, their natural bond holds them together, defending them against the Fires power, but dissolve their bond, and then they are compelled to submit to *Vulcan's* Force and Empire, and will let you make of them what you please. It may well flame the Chymists to work so disagreeably with Nature, and may well learn by the Husbandman's labours to fend for Nature's help. The Husbandman therefore, when he sows his seed, to have a good Crop therefrom, he casts not his grain upon any sort of earth, without consideration, but chuseth such earth for each proper seed, as being well dung'd, may suit best therewith, and in a convenient season sows his grain, that it, being putred and annihilated, may be multiplied, he leaves it to the warmth of the Sun, and to the vivifying Rain to concoct and mature it; well knowing, that without precedent putrefaction and loss of its form, it cannot be multiplied. He likewise knows, that when it hath arrived to its maturity it must not be left in the Field, but must be reaped, and then the better and more heavy part is to be fanned and separated from the lighter and worse part, viz. the Chaff; the which operation is, by Experience and long Use, known to be good and needful. This Process must a Chymist observe, for one Metal may be made the field of another, wherein putrefying, it may get it self a new body, which being done, he must likewise know how to separate the new body from the *faeces*, from which 'tis gathered and made; and how to fan *Vulcan* like the best and most ponderous, from the lightest, for both of them will be made better by the foregoing preparation, and the annihilation of the bodies. When a Country-woman intends to separate the better part of the Milk from the more gross and cheffy part, she puts it in a quiet warm place, that the best part may rise up, and the worst part go down; the which being as yet not sufficiently purified, she adds her art, and puts it into a Churn, and doth so long stir or agitate it until another separation be made of the pure from the impure, which we call *Butter*; which notwithstanding, had it lain never so long

by it self, had never come to have been *Butter*, without the Hand and Art of the Country-woman. Who would believe that in Milk there lies *Butter*, if he did not daily see it? This separation of the *Butter* from the wateriness, proceeds from the quick shaking and agitation, whereby the Milk heats; and if it doth not fadge, then do they put thereto some warm moisture, which uniting it self with the moisture of the Milk promotes a separation, for heat alone is the meer cause of hastening the separation. This now may seem a gross Example to the Ignorant, but let none imagine that this separation of the *Butter* from the Milk is alledged in vain, but rather to show the way how out of imperfect Minerals the golden and silver milk or part, is to be separated by the access or addition of a warm Mineral water, and by the Fires agitation: Even as warm Water helps the moisture of the Milk, that so it doth the easier separate its own heterogeneous *Butter* (and yet the way of separating the *Butter* from the Milk, without agitation, by the assuion of a warm thing and coction, is not unknown;) so also the Metals are separated, if they are along time boiled with their own Water.

Now, because of themselves they are compact bodies, if you keep them in Flux a long season, they remain compact, and are not able by their own power to shew forth their Good or Evil, nor make it appear, whether or no they contain Gold or Silver: They are to be a long time boil'd with Water, that being dispersed, they may be translated out of their metalline nature, and the pure (by the agitation of the Fire) may be separated from the impure; which purer part of the metal doth not swim at the top, like *Butter*, but settles to the bottom like a *Regulus*, after the metallick manner, and all being cool, it must be separated from the *Scoria*, and in a Cupel be washed to the utmost purity (*abgetrichen*).

But now 'tis worth the while to know what Water this is which is fit for this Work, and makes a separation of metals; for seeing that it must have power to dissolve metals, it's expedient that it be a friend unto them, and of the same kin, or (that I may speak clearer) 'tis fit that it be their dissolver and examiner; and this old *Saturn* hath power to do, out of which it may with small costs and labour be prepared; but the common *Saturn*, although it be called the Water of Metals by all the Philosophers (but in the usual washing in the Cupels 'tis not found so to be) yet as long as it remains in a compact metalline form, 'tis unfit for this thing; let him first be made Water himself before he reduceth the metals into water; which work is easie, of small cost, and of a few hours labour, and it goes into Water, and the Metals are thereby wash'd. Of which more shall be said in the following Chapter of δ , and elsewhere. This also is to be noted, That if Copper being dissolved with the Water of Lead, be digested its proper time, the moisture dries, and the metal is hardened, and returns into a metallick body; therefore the Solution is to be kept always liquid by the assuion or pouring on of new water, lest the mutual action be hindered, which the Philosophers call *Incineration*: Which being neglected, all the Work doth not presently perish, but there remains most elegant *Amalifa*, and tinted Glafs, which shines among the Copper, giving out from it self a Blood-red Colour, wherewith not only wooden Vessels may be adorned, but also Glafs-Painters may use it; of which red Glafs there hath been some found in old Churches; but 'twas be-

lieved that the Art was throughly lost; but this came not by chance without doubt, but was purposely concealed by those whose practicing hereabouts did perceive a better thing to lie under it; for the red *Amalifa* or Glafs, being burnt its proper time with a strong fire, gives a *Regulus* yielding in the Leaden washing (im abtreiben) good Silver. But if you seek for δ out of ϱ , it's better not to make the red *Amalifa* or Glafs at all, but to keep on with Incineration, that it may not come to be red, but may remain a pellucid and green Glafs, even until ϱ be well wash'd.

Moreover this is to be noted, That ϱ and the other metals are not only reducible into soluble and insoluble Glafs, by this *Saturnine* Water, but the same is to be done by the addition of clean Flints and Salts, by which they are made much fairer than those done with δ ; but in the separation (*Abgetrichen*) they are vilder, because the Dissolvent is not so metalline, and after purgation, they do not so easily give their *Regulus* as those that are done with the Water of δ . There's also another way, by which the superfluous burning sulphur of ϱ may be washed, and the cleansed without the water of δ or of the Flints, viz. with *Salt-Petre*. If ϱ or any other imperfect metal be often mixt therewith and burnt, the purer parts come together, and the combustible parts come together, and the combustible sulphur separates in the form of *Scoria*. To conclude, This separation and washing may be done by the help of other fixed Salts, but none so good as the Water of δ . Now let the Reader know, that those things spoken in a rude stile, concerning ϱ , want not their weight, even as the following Chapters will openly declare.

The Fifth Rule.

Of the Nature and Virtue of Saturn.

THUS speaks Saturn of himself: *The other Six Planets have excluded and thrust me out, who am their Examiner, from the spiritual City, assigning me an habitation with a corruptible body; for what they neither are, nor will be, I am constrained to be: My six Brethren are Spiritual, wherefore as often as I am in the fire, they pass through my body, and both I and they perish together in the Fire, the two best excepted, \odot and δ , who are most neatly and purely wash'd in my waters, and wax proud. My Spirit is Water, softening the hard bodies of my Brethren; but my body is addicted to the Earth, whatsoever I lay hold on, is also made like the Earth; and is converted into one body. It would not be good that the World should know what is in me, or what I could do; it would be better did they but know how to get that thing which is mine, and is in my faculty, they would lay aside all other Arts of Alchymy, and handle this thing only, which I am able to perfect. The Stone of Coldness is in me; this is the Water by which I cause the Spirits of the six other Metals to congeal into the Corporeity of the Seventh, that is to promote \odot with δ . Antimony is twofold, the one sort is the common black δ , wherewith \odot being mixt and melted, is purged; this is of nearest kin to Lead; the other is white Magnesia, Bismuth, and nearest to Tin; being mixt with the other δ , it cures itself δ .*

[*Quaest.*] Here we have mention made of *Saturn*, from whence the Bath (spoken of afore) for ϱ and

the other metals is prepared, and that twofold, the common δ , both which I have mentioned in my former Tracts, as profitable for this washing; but one is fitter for some metals than the other. Venus willingly enters into η , and may most rightly be washed and separated (getigert) with the common Saturnine water, δ and ν will not; but δ receives them most greedily, holds and washeth them, which is impossible for the common η to do. Yet notwithstanding Paracelsus seems to hint at some other thing here, speaking of the transmutation of η with other metals, aiming (as I conjecture) as well at a universal as a particular transmutation of Metals by Saturn. Now Saturn also, as he is the water and washing of other metals, so may he himself be washed with Salts, which, as I shall anon declare, are his water.

But let no body wonder that I speak no larger of the nature and virtue of Saturn, whom I set so high an esteem upon; for it hath been most frequently mentioned, and after this will be; so 'tis not fit to often to repeat the same thing, one Chapter illustrates another. See such other small Tracts as I have written of Saturn, and compare them well together, and without doubt you will perceive my meaning. That which Paracelsus adds concerning the difference of δ is plain enough, and wants no illustration; for common Lead and δ (although much differing in the diversity of Sulphurs) was by the Philosophers called Black Lead. Bismuth, Ashy Lead, and Tin, among the ancient Metallurgists, is white Lead; which appellations we shall leave to the ancients, and say no more thereof.

The Sixth Rule.

Of the Moon, and her Nature and Property.

If anyone goes about to reduce ν into η or δ , it will be as difficult as to make ν (with great profit) out of δ , ν , δ , ρ , or η . But 'tis not expedient to make vile things out of good, but to make precious things out of base and abject things.

'Tis also fit to know what matter the Moon is, and whence 'tis risen; be that is ignorant of this, will find it impossible to make Luna.

Quest. What therefore is Luna?

Ans. It is the seventh external, corporeal, material, of the Six metals therein hidden; for 'twas (as it hath been very often said) the Seventh hath the other Six spiritually hidden within it self; neither also can these six be without an external, material metal; nor can any corporeal Metal be without the six spiritual ones and their Essence. If you melt the seven Corporeal Metals, it doth nothing as to making ν : after mixture, each as its nature is, remains fixt in the fire, or volatile. For example, mix as well as you can ν , η , δ , ρ , ν , δ , and ν ; it will not therefore follow, that the ν and ν will transmute the other five, that they become ν and ν : Although they are blown together into one mass, yet each remains in its own state, viz. if you take of the corporeal mixture; for transmutation consists in the spiritual mixture and union of Metals, because Spirits admit of no separation and mortification.

Although you kill the Body an hundred times, yet will they always have another Body more noble than the former. And this is the promotion of Metals from one

mortification into another; that is, from a more ignoble degree to a higher, that is Luna, and from a better to the best, that is Sol; a most illustrious and royal Metal; 'tis also true, and always will be, which hath been often spoken of before, that always the six metals generate the seventh, and deliver it from themselves into a palpable and visible substance.

Quest. Now, then if it be so, that the Luna, or any other metal, is always caused and produced from the other six, What therefore is its Property and Nature? I answer, Out of ν , η , δ , ρ , ν , δ , and ν , no other metal can be made, but ν ; the reason is, because as to the other six metals, each are indeed with two good virtues, which in all make Twelve: these virtues are the Silverish or Lunar Spirit, which in brief understand thus; Silver is compounded into a corporeal Metal, out of the six Spiritual Metals, and their Properties, in number twelve, and is likened to the seven Planets, and the twelve Celestial Signs; for the ν hath from ν the Planet, and ν ; and ν , a bright white flux and splendor, ν , ν , ν ; also ν hath from ν , δ , and ν , a white colour, a great constancy against the fire and fixation, ν , δ , ν ; from δ , ν , and ν , it hath hardness, and a good claspour or sound, ν , ν , ν ; from ρ , ν , ν , it hath the means of Congelation and Malleability, ν , ν , ν ; from ν , ν , ν , it hath a fixt body with heaviness and gravity, ν , ν , ν ; from ν , ν , ν , it hath a sincere purity, and a great constancy, against the violence of the fire, ν , ν , ν .

'Tis briefly explained what is the exaltation and cause of the Spirit and Body of Silver, with its own compound Nature and Essence.

It must also be known what matter the metallick Spirits do take in their first Nativity, when they are carried down into the Earth from the Celestial Influences, viz. a vile Dirt or Stone, which the Mine-digger by breaking the body of the metal, destroys and burns in the fire, in which mortification the metalline Spirit assumes another body, not fixt, but pure and malleable. Then the Alchymist coming, destroys this metalline body, kills and prepares it by Art, but that metallick corporeal Spirit makes apparently conspicuous, another more noble and much more perfect body, whether it be the Sun or Moon; then both the metallick Spirit and Body being perfectly united, are free and safe from Corruption by the Element of Fire.

Claub. Paracelsus in this Sixth Chapter repeats the words which have been oftentimes afore mentioned, viz. That every visible metal is an hinder of the other metals which lie spiritually hid within it; withal teaching, that it is impossible for corporeal metals, although melted together never so long, to be meliorated, unless they are first made spiritual; which I have oftentimes demonstrated and shewed to be the very Truth, and the right way to Transmutation.

But he doth not in express words teach the way by which they may be made and rendered spiritual; nor is it convenient to chew a Morfel, and thrust it into the mouths of the Ignorant.

Now I say, that as touching the spiritualizing of Metals, Paracelsus doth not advise that Metals be dissolved in corrosive Spirits, & digested & deftilled over the Helm with it, by often Cohobations. The spiritualization which he mentions here, is not to be done with Corrosives, for they are rather corrupted by them than perfected, neither in Glasses, but in Crucibles, and that in a few hours, without Corrosives, whereby they are so depurated, and as it were powdered, that they are transparent in and out of the fire, and dissolvable in any water. This is a true Spi-

spiritualization of metals, and gainful if it hath the said Properties: 'Tis otherwise called by the Philosophers, the first matter of Metals, and at this time known but to few.

Our Laborators nowadays know not any metallick spirits but such, as by the help of peregrine and noxious things, they drive over by an Alchibick or Retort; but Experience testifies, that these are wholly useless and unprofitable for Melioration. And although the ancient Philosophers write, Make the fixt volatile, and the volatile fixt, yet they mean not that the metals should be deftilled. Which sublimation or deftillation they did not meddle with, but all their metallick labours, as Solution, Purification, Deftillation, Sublimation, Calcination, Inceration, Cohobation, and Fixation, were done in one earthen vessel, without Corrosives; nor did they weary themselves with those ridiculous labours that are done by the means of Glasses. But of this more in another place.

Now read diligently over and over again what Paracelsus writes at the end of the Chapter, and it will appear, that he speaks of fusion, and not deftillation in Glasses; where he shews, that a metallick spirit at its first descending from the stars into the earth, hath a most vile form, like a stone, or dirt, which the digger of it melts with a strong fire, whereby it gets a better form, and becomes a malleable metal. And here he is at a stand, and cannot proceed any farther. Now, saith Paracelsus, the Alchymist comes and takes this metal, and by his Art destroys the metallick body, killing and preparing it; and by his labour it assumes a more noble and fixt body, called (because of its maturity) Gold or Silver.

The ν , although it be more pure and excellent than ν , δ , ν , and ν , yet having not arrived to maturity, it is (in comparison of the ν) like a flower, which is more excellent than the herb, but inferior to the seed, which is the most perfect part of the same. And, as in Vegetables the flowers are indeed with a more elegant colour than either the seed or fruit: So also is the ν more abounding with Tincture than the ν ; which I have very often tried, and could demonstrate by many Examples; contrariwise, although the flower be, as to the form, colour and odour, above the seed, yet in goodness and durability it is much inferior; for the flower at an approaching cold falls away; but the seed endures, and if it be helped, it produceth a new herb, flowers, and seed, by which its species are conserved and propagated. And as in Vegetables the herb is the greatest part, the flowers less, and the seeds least, so in Minerals is the like order most fitly observed: for should Nature produce only Flowers and Seeds with the Herb, whence would there be Grass for Beasts, whereby they might fill their Bellies, and so yield dung for the Country-man to dung his ground withal, that it might produce a new Crop of Herbs. Without doubt there's more Tincture hidden in ν than in ν , the inmost part of which is a meer redness; but the centre of ν is a most fixt and splendid Sky-colour, which is to be well observed. As for the other Properties of ν , which are most frequently known, 'tis needless to mention them; as to purity and fixation, 'tis nearest to ν ; and therefore in metallick things 'tis to be likened to a Flower: 'Tis plainly void of combustible and preying Sulphur; but being not as yet arrived and concocted to perfection, it is a most suitable Vehicle to extract ν out of volatile and unripe Mercatice, and other auriferous Minerals, and to make it corporeal. Concerning which I have

formerly written, and will write more hereafter.

The Seventh Rule.

Of the Sun, its Nature and Property.

Corporeal ν is the seventh Metal of the six spiritual ones; in it self it is a meer Fire; but the Reason of its being outwardly of an elegant, yellow, visible, sensible, ponderous, cold and malleable body, is, because it hath in it the coagulation of the other six metals, whereby 'tis compell'd into a visible body. And as to its being melted with Elemental fire, 'tis from hence, because it hath a fluidity of Mercury, ν , and ν , spiritually hidden in it self; the which is also outwardly evident, because it is most easily mixt with the ν , and detained by him.

And whereas after melting, it grows hard by the Cold; viz. is coagulated, and grows stiff, that comes from the other five metals, ν , ν , δ , ν , and ν ; in these five metals the Cold dwells and bears sway, and therefore ν cannot be fluid out of the fire, because of Cold. Nor can ν with his heat, nature, and fluidity help him against the five cold metals, for its heat sufficeth not to keep the ν in perpetual flux; so that it is enforced to obey the other metals rather than one only, ν , who (as to coagulation of metals) hath nothing to do, its Property being to make liquid, and not hard: It is the work of heat and life to make liquid, but cold is the cause of hardness, stiffness, and unmovable, being therefore likened to Death.

For Example, If you would reduce the six cold metalsto fluidity, whether it be ν , ν , δ , ν , ν , and ν , it is to be done by the heat of the fire, for metals are not melted with cold Snow or Ice, but are hardened thereby. Now, as soon as they are melted by the fire, and that the heat ceaseth, the cold rusheth in, whereby the metal stands still, grows stiff, dies, and remains immovable. And because that ν is always fluid and living, tell me, I pray, whether or no such a thing proceeds from heat or cold? Some or other may say, it is because of its cold and moist nature, and that it is living because of Cold; but whoever saith thus, and believes thus, is ignorant of Nature, and deceived and seduced with the vulgar, whose belief of anything is out of the right way, & amis; & are therefore to be avoided and shun'd by him that would truly know; for ν is not living, by reason of cold, but because of its heat and fiery nature, as all things else live because of heat, for heat is the cause of life, and cold the cause of death.

But that ν is in it self a meer Fire, not alive indeed, but hard, shewing its fiery heat only outwardly, as yellow mixt with red, and the other five metals, are cold, viz. ν , δ , ν , ν , and ν , giving their virtues to the ν ; viz. according to their frigidary body, by their fire colours, by their siccity hardness, by their moisture weight or heaviness, by their resplendency sound; and that it is not combustible, and to be destroyed by the Element of Terrestrial Fire, that is by reason of its fixtness. Fire doth not burn Fire, nor destroy it, but Fire joined to Fire becomes the greater and more powerful in strength. The Celestial fire descending from the ν upon Terrestrials, is not such a fire as is in Heaven, nor such as our fire is on Earth; but with us the Celestial fire is cold, a rigid and congealed fire; and this is the body of Gold, and therefore we cannot tame or master ν with our fire, we can only divide it and melt it, as the sun dissolves and melts snow, congealed ice and water. Wherefore it is not permitted for one fire to destroy another, because ν is self fire, and in Heaven it is resolved, but with us it is congealed.

Gold is in a threefold state with its Essence.

- | | | | |
|------------------|------|-------------|-----------|
| 1. The Calcified | } is | } Resolved. | |
| 2. The Elemental | | | } Liquid. |
| 3. The Metallic | | | |

The End of the Seven Rules.

Glaub. WE are now come to ☉, a kingly and most excellent Metal, the which *Paracelsus* compares to a meer absolute Fire, and so 'tis found to be, if it be separated into parts; 'tis likewise endued with a feed-like nature, more hot than the Herb it self or the Flower. But to what end should we write of bettering it, when as it needs it not, being already constituted in the highest degree of perfection, and Nature not being able to promote it to an higher degree: Now then if it be to be made better, 'tis behoveful to make it Medicine, for never was a more excellent metal than it seen. An Herb planted in a fruitful soil, and brought to its perfection by the heat of the Sun, the seed being ripe, it remains not in the same form, but withers, and the seed falls away; but if it be seasonably gathered, it lasts a long while, and may, at your pleasure, be put into the Earth, for the production of new Herbs of its kind; or else it may be used for the health of Mankind, having no other notable life besides. In like manner, Gold having arrived to its perfection, if it be to be farther advanced, it must be made Medicine, or be put upon the Metallic Earth, as Seed is on the Common Earth; where putrefying or augmenting, or growing, it may exhibit and produce a metalline Off-spring. Every body knows that a good Medicine may be thence made, and that various waies, but few know the manner how; but that 'tis able (like the Vegetable seed) to make Encrease out of the imperfect metals (being its own Earth) *Paracelsus* teacheth in this place, and many Philosophers witness the same, which is not only true in a particular melioration, where by attracting its like out of the imperfect metals, it is encreased; but 'tis also to be believed as true, that from it may be separated, by the industry of a skilful metallic Philosopher, its inmost Vegetative power and purest portion (all its husks, or outside, wherewith 'tis clothed, being laid aside) and may thereby be exalted to a more than perfect estate, although 'tis incredible to many, yet 'tis not in the least to be doubted of, except we would make all the Philosophers to be Lyers.

As for my self, although I never set my hand to so hard a Task, yet I believe and affirm it to be in the nature of things, as having evidently observed by my other metallic Labours, that this Medicine is in the possibility of Art; the which I will also in due time set upon, if God give Life and Leisure. What the other properties of ☉ are, and by what means good Medicines may be prepared therefrom, I have spoken thereof in many places of my writings, and in its proper place more also shall be spoken. And here we rest and conclude this little Book of the Rules of the Seven Metals.

GOD and Nature make nothing in vain.

The Eternal City of all things (there's an Eternal place in all things) without time, without beginning, and without end, is every where essentially. It operates in that wherein is no hopes, and that which is accounted impossible, unexpected, incredible, and plainly deplorable, will be true even to admiration.

Glaub.] *Paracelsus* having finished his Seven Rules of the Properties of Metals, begins after a sort, to repeat and illustrate his sentiment or opinion, comforting the Operator, lest happily he should be discouraged, if his affairs do not presently meet with good success; but let him ingeniously proceed, because Nature makes nothing in vain; that which is least of all believed, comes most of all to pass; his words are clear enough of themselves.

Item. Note now some things on Argent Vive.

Whatever whitens is of the Nature of Life, and of the Property and Virtue of Light, which causeth and makes Life. The Fire with its heat gives birth to this motion. And whatsoever blackens, is of the Nature of Death, of the Property and Virtue of Darkness, (having the efficacy and force thereof) which causeth Death; to the which hardening or induration the Earth with its Cold is the coagulation and fixation. The House is alwaies dead, but the Inhabitant is a living Fire: If thou hast found out the true Use of Examples, thou hast overcome.

Glaub.] *Paracelsus* speaking here of Mercury, mentions Fire, which by its heat is the cause of Light and Life, but that which blackens, is the cause of Death; where making as it were a pause or stand, he adds these pregnant words.

Sacrifice the fat Vervein (or Sulphur). Re eight lots of Salt Nitre, four lots of Sulphur, two lots of Tartar, mix them, and let them flow.

Glaub.] Here begin the Complaints of the Alchymists, because *Paracelsus* writing of so good a matter, doth so suddenly break off, adding such a Receipt, as in their judgment hath no affinity with Mercury, but is to him as a thorn in a man's eye. This powder indeed is a good fusile powder, for the reduction of such metals as are otherwise hard to melt; but in this place 'tis merely vain and needless, because ☿ by his innate fiery power and heat, doth alwaies flow; wherefore we want not this Flux for him. Had he written in this place, how he (viz. ☿) is to be coagulated and fixed, we would most willingly have heard him, and as willingly have been content that he had kept his fluxing powder to himself.

Such as these ought to blame themselves and not *Paracelsus*, that with'd well unto them; The words which went just before, may excuse him; for he said, that GOD and Nature made nothing in vain; where-by he intimates; that this powder is not so strangely to be look'd on, as if 'it did not pertain to ☿, who is more than enough fusile already, and wants it not. Nor was this mentioned to vex the Alchymist; no, *Paracelsus* knew this nimble fusile powder, and its operations upon the metals, better than he that complains thereof. ('tis of incredible benefit in the metals, did any one know how to use it) and he placed it here, that we might perfectly learn its highest force and efficacy upon the metals;

tals; the which thing his foregoing words do also admonish us of: It operates beyond hope, that which is judged impossible is unexpected, incredible, and desperate, will prove true to admiration. Wherefore, think you, would he have added this fire had it not been needful in this place? doubtless he knew how to burn the wings of ☿, and thereby to stay his flight. And although I know not how to fix ☿ herewith, yet have I experienced wonderous things as well in the metals as ☿, for if the metals, especially ☿, be Philosophically joined herewith, sublimed and distilled, they afford wonderful *Menstruums*.

It's also here said, Sacrifice the fat Vervein (or Sulphur). 'Tis full well known, that the superfluous Sulphur in metals that are imperfect, is the cause of their baseness, and this fire is able to burn it up; but 'tis impossible that all should know it; there's need of use and diligence, if you desire *Leavis*, flying with his Father *Dadalus*, and approaching too nigh the Sun (whereby his wings being burnt, he tumbled down into the Sea) should be drowned in the waters. The which let suffice, for there's enough spoken unto a wife man; let us therefore proceed.

What is to be determined concerning the Coagulation of ☿.

Tis not at all expedient to kill ☿, to coagulate him, and then reduce him into ☿, and to weary him with many sublimations and other things, for this is but the destruction of the Sun and Moon that is in him. There's another more compendious way, whereby ☿ is made ☿, of small cost and charge, without any labour of coagulation: Every man reads in the Writings of the Alchymists, such Arts as are mean and vile, and easily preparable, whereby in a short time he might make abundance of ☉ and ☿, and are tired and vexed with the Writings of such as do not reach them clearly and plainly, and would willingly hear this, viz. Do so and so, and thou shalt have good ☿ and ☉ to enrich thee.

But good Sir stay a while, and wait till the Secret be plainly opened to thee in positive words without any labour; so as to enable thee (in as 'twere a moment of time) to take ☿, ☿, and ☿, and make Sol and Luna thereof. The Art will never be so easily known, how short and facile foever it be in it self.

Glaub.] *Paracelsus* goes on, and saith, That 'tis not needful to coagulate ☿, that ☉ and ☿ may be thence made, and that it is to be done with a most easie labour, and therefore few words are best. And here *Paracelsus* is to be compared to that Rich man, who having heard that many perished with famine, 'tis said that he should answer, That before he would be tormented with hunger, he would rather feed on ruffy Bacon and Pease, believing that all abounded with this fare; the which they despising in like manner the good *Paracelsus* believed, that all Chymists were his equals, as to the knowledge of Metals, not dreaming of the many poor Colliers that torment ☿ by their solutions, precipitations, sublimations, resuscitations, fixations, and other labours; when as they are ignorant of what it is, what a bounds or is wanting therein, and so for want of knowledge, toil and labour to no purpose: ☿ is a subject of wonder, and is frequently wont to deceive the Alchymists, whom (viz. ☿) if you would on the other side deceive, when you pursue him, give him a little breathing (because by force he's not

to be compell'd) that he may a little wander about, but trust him not too much, lest flying away, he leaves behind him an empty Nest. For which Work the first Furnace, with its many Glafes, very well fitted and united, will serve excellently well. But in few words, 'Tis a subject of an inexhaustible wonder, the which I alwaies found the most stubborn of all the metals, that I have bestowed grievous pains about; but yet do believe, that he that knows rightly to deal with him, will reap a benefit from him not to be contemned. But who is there that discovers the Way? Wonders mult alwaies remain unknown unto us, and albeit we know not all things, yet let us acknowledge the great Mercy of GOD, and give Thanks to Him for that which we do know.

The Receipts of Alchymy.

What shall we say of the many Receipts and the various Vessels, such as are the Furnaces, Glafes, Testes, Waters, Oils, Salts, Sulphurs, Antimonas, Magnesia, Salt Nitre, Alum, Vitriol, Tartar, Borax, Attramentum or Copperas, Orpiment, Spume of Glafs, Arsenick, Calaminaris, Bole-Armoniack, Vermilion, Calc, Pitch, Wax, Lute of Wisdom, Powder'd Glafs, Verdigrise, Salt Armoniack, Soor, Resin of the Pitch-tree, Chalk, Mans-fat, Hairs, Egg-shells, Lac Virginis, Ceruse, Minium, Cinnabar, Vinegar, Aqua-fortis, Crocus Martis, Elixir, Lazare, (ultra-Marine) Soap, Tutia, Spattergold, Crystals. What likewise shall we say to their preparations, purifications, digestions, probations, sublimations, calcinations, solutions, cementations, fixations, reverberations, coagulations, gradations, rectifications, amalgamations, and purgations. Most Books are fully stuffed with these Alchymical things, as also what things are to be done by the benefit of Herbs, Roots, Seeds, Woods, Stones, Animals, Worms, Bone-Albes, Cockle-shells, Muscles, &c.

All these things are the Labyrinths of Alchymy, and are great and but vain Labours. Moreover, although ☉ and ☿ might be made by the means of these things, yet by reason of the multitudes of them, the Work is rather hindered than advanced; and therefore it cannot be truly learned from the aforesaid things, how to make ☉ and ☿. But all such things are to be omitted, as operate not with the five imperfect Metals, for the production of ☉ and ☿.

What therefore is the true Way, and the short Path void of all difficulties, that leads to the speedy making of good Sol and Luna? How long will it be ere thou revealest it? I believe that thou understandest nothing of this matter, may somebody say, but dost only mock us with these Riddles. For answer: It hath been already spoken of, and is evidently enough discovered in the Seven Rules; He that understands not, let him blame himself. Besides, let no body be so mad, as to persuade himself, that the Art is most easie to be understood, and so be perfectly known by the vulgar; that is neither so, nor must it so be; but it will be better understood in an occult and hidden Sense.

This is the Art, viz. If you make the Heaven or Sphere of ☿ to flow with life in the Earth, put in all the Planets, or which you please of them, but let there be of Luna least of all; let it flow so long, until the Heaven of ☿ doth wholly disappear, and the Planets remain alone dead with their own corruptible Bodies, and have assumed a new, perfect, incorruptible body, that

body is the Spirit of Heaven, by which the Planets become again corporeal and alive; as afore, Take out that new Body from the Life, and out of the Earth, and keep it, for it is Sol and Luna. And thus hast thou the Art plainly uncovered and in view; if thou dost not yet understand and apprehend it, 'tis well, for so it must be; nor must it be publicly divulged.

[Glaub.] In this Chapter Paracelsus teacheth, That there's no need of so many ridiculous species, for the transmutation of Metals, but that there's virtue enough in the metals to operate upon, and to better one another, if they are rightly conjoined amongst themselves; yet in some Labours we cannot be without Salts and Minerals, because they are useful to mollify hard Metals, and to dispose them to assume a melioration. But 'tis to be observed, that Corrosives are to be omitted, and such Salts only to be used as are friendly to Metals. Likewise other Minerals and Fossils may be fruitfully used in fusion, (Strickung) separation, and other metalline Operations, as additaments (also Sulphurs). The which thing Paracelsus denies not, but only rejects, and that deservedly, those ridiculous Compositions of the unskillful Alchemists, which they making in their use Sol. He deports the studious Artificer, and endeavours to bring him into the right way.

Furthermore, he teacheth but in an occult fence, how good Sol and Luna, such as will endure all trials, is to be extracted out of imperfect Metals; but 'tis to be obscurely done, that no body can thereby understand the thing; and such only as aforehand know somewhat, and have had the like Labours under their hands, are able to understand his meaning.

Doubtless this Process hath found many an one work enough, who have at last attained to nothing; but yet some have by chance lighted thereon, and so perceived the Truth of his Words, most of which Inventions do casually happen; and whilst that one thing is sought after, and by accident lost, something is oftentimes found more excellent than that which was intended.

In like manner, most things unfought after have happened to me; and also my Labours have manifested to me the greatest part of Paracelsus's Arts, and not his Writings. And who will certainly and plainly teach what lies under that Covering? Many Archers there are, but few hit the mark. Neither seems it so necessary to take nothing else but the aforesaid Metals; the which thing Paracelsus also in his forementioned Process doth hint at, saying, When thou makest the Heaven, or Sphere of η , to flow with Life in the Earth, how in all the Planets, or such as you please of them; but let not the Moons part be biggest, but let it be the least of all. By which words 'tis easily conjectured, that the greatest part must be of Saturn, whereby the other metals are to be washed and purified, and the least part of the Moon. But some body may ask, What reason is there for the Moon being here, she being already pure, for the washing of whom there's no need? Why this hath been already elsewhere answered thus, viz. That she may attract, defend, and make corporeal, the washed, purified, and tender Sun, which would otherwise remain in the Scorria: Notwithstanding this separation may be made without the Luna, but then 'tis not so gainful. Neither also is it necessary to conjoin the Metals, and so make but one work in washing them with Saturn; each of them

may be taken apart, and so cleansed; unless a man knew how to contrive the composition, then indeed the Work would be facilitated, and more Sol gotten; the which is to be well observed; if either none, or very little Luna be taken. But if you take not η , then α is to be added, as being of nearest affinity to \odot and \ominus , in its malleability, and so that will attract the volatile and immature \odot out of the imperfect Metals, and defend it in the fire, but much weaker than η . Tin and Iron being most impure and sharp metals, may be washed with Lead, but with much difficulty, and may be deprived of their spiritual and occult \odot , but with far greater charges and cost, than if you took in η , or at least wife ϱ . Now knowing this, Why do we not give to every one its proper aditament, for the expedition and enriching of the Operation? 'Tis worth [the while to be able to make a good mixture of Metals, and with profit to wash them with η , in which mixture none believes how much there's placed, nor my self neither, had I not with Loss learned the same. For, when in former years I fought after somewhat in this kind of operation, as washing and separation, and had sometimes found out a good Proba; I have gotten to repeat the same labour again, and have egregiously erred. And although I have for many years wrought hard in this kind of labour, and spent much (which I repent not of) yet I dare not boast of catching the best prey, but am content with a piece of Bread, but yet I do not despair. Good things come slowly on, and the thorny prickly Buds spring forth before the Roses come. Now, if thou learnest the weights the Work will be safe, and thou needest not to doubt of doing the same in a great quantity. Paracelsus goes on, and bids you to let the Planets which you have put in, to flow so long with the Heaven of η , until the Heaven of η vanish, the Planets will remain, having received a new body, which is to be taken out of the Life and the Earth, which will be \odot and \ominus . And these words are variously interpreted by sundry men, especially what the Heaven of η is, and are perverted, that if that were known, the residue of the Process they could state well enough. Many understand hereby the common separation made by peculiar η , taking the Regulus Stellate of δ , which is stamp with a Celestial Star, the which they blow on and melt with the Life, (which they interpret to be the fire) in the Earth (a Cupel or Telt tröschelchen) the bodies being left upon the Telt, like mortified Metals, the which reducing by a fusing addition, and melting with Lead, (angelotorn) and promising themselves Gold and Silver; they find themselves to be in an error, and accuse Paracelsus of Sophistry and Deceit, because they can't make good quantities of \odot and \ominus , by means of his Writings.

And now, what this Sphere of Saturn is, may be variously explained: It may not unfitly be taken for common η , because being fused, it shines, and is turned round: or it may be taken for its Glass, which being melted in the fire, shines like the Sun: or it may be the Stellar Regulus of δ , because its Scoria represents Stars when 'tis broken. But what benefit is it to know the Heaven of η and to be ignorant of the true requisite Life, and the reduction of the dead and reducible bodies. Common Fire is not the Life that Paracelsus mentions, but it may be stirred up thereby; and so he saith; The fire with its heat, is the Nativity to this motion: If by the Elemental Fire he should mean the Life, and by the separation of η , or blowing of the Regulus of δ , (the flow-

ing which Paracelsus mentions) then it must necessarily follow, that the destroyed bodies which remain, should be made more perfect, and the Spirit of Heaven should yet remain with them; for thus he writes, viz. The Planets by it do become corporeal and living, as they were before; but in these kind of separation, scorification, or blowing off, it is not found so to be; but in these Operations their Bodies remain like Scorria, in which is neither spirit or life, much less \odot and \ominus to be found, though never so diligently fought after. Paracelsus saith expressly, viz. That Body (viz. of the slain or kill'd bodies) is the Spirit of Heaven, by which the Planets do again become corporeal and alive as before; from whence 'tis to be understood, that those bodies are spiritual, & not only corporeal and resuscitated, but such as may give life even to slain or destroyed bodies, the which can't be said of them, for a spirit must be penetrative and vivifying, and they are not such. For if (according to Paracelsus's mind) the dead bodies ought to be reduced to Corporality and Life, 'tis necessary that they have some hidden power; (which every one knows not) whereby they may demonstrate most speedily their embodying and vivification in a spiritual manner, without the addition of any peregrine Flux, or else they are deservedly to be rejected. But if any one should now imagine, that metals being by the red fire deprived of life, made spiritual and again corporeal and living, should forthwith be all \odot and \ominus ; he promiseth more to himself than is right, and is deceived (for Paracelsus saith, that That new body is to be taken out of the Life and Earth and kept, for 'tis \odot and \ominus) for 'tis impossible even for the Philosophers Stone, to convert the whole bodies of Metals into \odot and \ominus ; for out of nothing, nothing can be made, as the Philosophers say; and Experience testifies, none but God only made any thing out of nothing; but that thing which is, may by Art be reduced into nothing, and that again reduced into something. Seeing therefore that the greatest part of metal is an unprofitable, combustible noxious Sulphur, which never was a metal, but adhering only outwardly unto them, and being combusted, reduceth their humidum Radicale into Scorria; which Humidum Radicale only (after its destruction) and not the whole mass of Metal or superfluous Sulphur, is reduced by the spirit of the Saturnine Heaven, out of nothing unto something, viz. a Body and Life; the Sulphur which before the corruption was nothing, remains still a Nothing; and if thou thoroughly observe the thing, the Case stands clearly thus; viz. In this operation there must be a separation of the imperfect metals, and a gathering together of the more pure, and a dispersing of the more impure parts; these separated parts must therefore necessarily be much unlike one another; and by how much \odot and \ominus is more pure, if compared with imperfect metals, from which 'tis separated: And these separated parts are not of the same Goodness and Nature; as if ten duckets were divided into two parts, each part would have $\frac{1}{2}$ of the same goodness and weight. Now, if from one of these halves you take two or three parts, and put them to the other half, it only makes the one bigger, and the other less: And if there be nine parts on the one side, and but one left on the other side, yet cannot the major part boast of its excelling the other in quality, but only in quantity: As to Goodness, they are both equal. But now, if you take a Mineral or Metal commixt with stones, and by measure divide

it into two equal parts, and then pound them, and by pouring water thereon, separate the lighter parts after the accustomed manner, and the heavy Metal will settle to the bottom: Now the dross and metal will fill the former measure, but will very much differ in their goodness.

Or if any one take two measures of Wine, and by the heat of Fire, separate the more excellent Spirit by distilling in a Glass Alembick, and leave the other measure in the Cucurbit: These two parts, though equal in quantity, yet they do much differ in goodness; the one part will be more noble than Wine, and the other worse; and as the other residence is no more Wine, being deprived of Spirit, Life, Soul, and Strength, and is thereby unable to defend it self from death, but tends to putrefaction; so on the other hand, the Spirit is not subject to putrefaction, but preserves other things therefrom.

The like is to be understood of this metalline separation, for the remainder, from which \odot is separated, can no more be made Tin, Copper, or Iron, but is a gross earthy Sulphur, by the reason of the \odot taken thence; whereas before it was γ , δ , ζ , or η . And by how much the Spirit of Wine is more excellent than common Wine, and \odot than an imperfect Metal, by so much also will the Spirit of Wine and \odot excel, if they are again separated; and new faces segregated therefrom. But this is not so necessary in this place; 'tis sufficient to have declared the way and reason of this metalline separation, about which we have even now treated, viz. That the whole metal; nor the $\frac{1}{2}$ or $\frac{3}{4}$ part thereof, will become Sol, and the rest remain a metal; but the separation of the pure is very small in quantity, in comparison of the much impurity whence 'tis separated. Nor let any one think he hath not attained the Art, and so will not rest here, if all things become not \odot ; 'tis sufficient if there be some gotten, and that all the Labour is not bestowed in vain.

By what means Crystals are to be Conjured, and all things to be seen in them.

To Conjure is no other thing, than well to observe a thing, to know and understand what it is: Crystal is a Figure of the Air, in which is to be seen whatsoever is moveable in the air or unmoveable. The like appears in a Looking-glass, in Crystal, and in the Waters, for the Air, Water, and Crystals, are all one to Sight; like a Glass wherein an Object is to be seen, as it were, reverted.

[Glaub.] I do not fully know what Paracelsus intends by this Conjunction of Crystals, because it appertains not to the metalline Arts; but yet it seems not to be here added without good reason, somewhat he would intimate hereby: We read of the Ancient Pagan Philosophers, that they conjured Crystals, and beheld in them many wonderful things; the which, whether it be true or no, I leave as I find it, because in my Judgment, such an Art seems not natural, but belongs to Diabolical Magick, which I have nothing to do with.

Paracelsus also hath elsewhere written of wondrous Looking-glasses of the same, and hath taught how to compose them of Metals, melted together in a certain Time and Constellation; the which many have attempted to do, but not one (as far as I know)

know) hath attained the Mystery. It seems very probable, that he intends by this Conjunction of Crystals, that the Metals are to be made like to pellucid Crystals, Air, or Water, wherein the soul of the Metal may shine, if you would spiritualize them, and make them yield their ☉ and ☽. And in this Sence it agrees with the aforesaid Chapters.

It likewise seems, that the mentioning of this thing is necessary for the sake of those, who practising on a separation with ☿, have experienced, the Metals are to be first reduced into Transparent Crystals, before they part with their occult Sol: Which I have elsewhere spoken more largely of, about *Amanita*, and therefore will here end.

Of the Heat of Mercury.

They that believe that Mercury is of a moist and cold nature, must lay down the Bucklers, for 'tis not so, but it abounds with a great heat and moisture, which being naturally planted therein, keeps it always fluid: For, were it of a cold and moist Nature, it would always remain rigid and hard, like to congealed Water, and were to be melted like other metals, by the heat of the fire, which it (viz. ☿) hath no need of, because it hath already a fluidity from heat, whereby it flows, and is always constrained to live, and not to solidify, grow stiff, congeal, or be fixed. But this is singularly to be noted, that the Spirits of the seven Metals, or of as many of them as are conjoined in the Fire, are wonderfully provoked and stirred up, and Mercury chiefly, and they enit, and send out their forces amongst each other, for a mutual Victory and Transmutation; the one takes away the Virtue, Life, and Form from the other, communicating a new Nature and Form; so the Spirits or Vapours of Metals are stirred up by heat and mutual action and passion, and are transmitted from one Virtue to another, and at last to Perfection and Purity. But what else is to be done with ☿, that so his heat and moisture being taken away, he may catch a great Cold, and be congealed, stand still, and die; do as you hear in the following Figure.

Take a most pure Silver Vessel, in which put up Mercury, then fill a Pot with molten Lead, in the midst of which put in the Vessel with the Mercury; let it stand a whole day, and the hidden heat will be taken away from Mercury, and the external heat will communicate to it the internal cold of the Lead and ☽, being both of a cold nature, by which Mercury will grow stiff, rigid, and become hard.

Note, The Cold which Mercury hath need of for its hardening and death, is not outwardly perceptible, like Snow or Ice, but is rather hot. Nor is the heat by which Mercury flows, felt by the hands, but 'tis rather cold. Hence Sophisters (that is men speaking without knowledge) pronounce him cold and moist, and study how to congealate him with hot things, and thereby rather liquify than harden him. Which thing Experience is itself resisteth. True Alchemy, which by one only Art teaches to make ☉ and ☽ out of the Five Imperfect Metals, useth no other Receipts, than only from Metals, out of Metals, by Metals, and with Metals, are Perfect Metals made; for with other things it is Luna; for in Metals it is Sol.

[Claub.] Here Paracelsus demonstrates their Judg-

ment to be false, who say that Mercury (in it self a meer Fire) is by nature Cold, and returns to speaking of Spiritual Metals, the which being stirred up by great heat of Fire, do operate upon one another, meliorate, change, and advance to perfection, as hath been taught in the foregoing Chapters. Then he adds a Fable or Story, how to coagulate or fix Mercury; but it must not be taken in the literal sense, but of the spiritual ☿, whereby Mercury is to be promoted to Coagulation, in a moist way, and not in a dry, as the other Metals are, which Process I never yet attempted. Then he finisheth with an universal Rule of Transmutation, saying, Perfect metals are made from metals, out of metals by metals, and with metals, and that out of ☽, out of others ☉ is made. He advieth to take no strange thing, and only metalline subjects are to be taken for this Work out of some Luna only; out of others Sol only, or ☉ and ☽, both are to be extracted, which I have often tried; as in ☽, which of it self gives only ☽, Tin, ☿, and ☽, by themselves give only Luna, and pure Sol; but committed with other Metals in a due proportion, they give only ☉, and very little or no ☽: Which maturation is to be ascribed only to the labour and mixtion, which is deservedly to be admired.

What Matter and Instruments are needful in Alchemy.

There is no special need of any thing, excepting a Fire-place, Coals, Bellows, Tong, Hammer, Crucibles, Test, (treib scherben) and Cupels made of good Beech-ashes. Then put in ☽, ☿, ☿, ☽, ☉, Copper, ☿, and Luna. Proceed to the end of ☽. 'Tis very difficult and uncertain to find out Metals and Minerals in the Earth and Stones; yet because all Metals are to be first sought after and digged out of the Earth, this Labour is not to be contemned, but is Praise-worthy. Nor will this lust and desire in digging in Mines sooner cease, than the love of young Men to Maids will fail; and as the Bees are greedy of extracting Honey and Wax out of the Rose, so prone and forward should a Man be, to find out the Minerals in the bowels of the Earth, but without Covetousness; he that is overmuch greedy, receives least, for God doth not fill all men with gold and silver, but with want, dung, dirt, misery, and scarcity. Some men also God bestows a peculiar Intellect upon, and a piercing knowledge of Minerals and Metals; so that they know a far more compendious way of making Sol and Luna without digging in the Mine-pits, and without the Examen or Trying, and Fusion of Minerals. So that 'tis not so altogether necessary to dig in the Earth for native Sol and Luna, but by a certain knowledge it might be made of five Species, (but of Minerals become Metals, which are Imperfect Metals, and are so called) viz. ☿, ☽, ☽, Mars, and Copper: Of some more easily, of other some more difficulty is Sol and Luna to be had.

Note also, That out of Argent-Vive, Lead, ☿, Gold and Silver is easily made; out of ☽ and ☿ difficultly. Nevertheless 'tis possible, but in the beginning and access of Sol and Luna.

Out of Magnesia and Lead comes Luna.
Out of ☿ and Cinnabar ariseth pure Sol.
Likewise an Ingenious man (as I well remember) is able

able by due attention and preparation so to handle a Metal, as to be able by his ingenuity to do more in the Transmutation of Metals to perfection, and to guide the same better than all the Signs and Planets of Heaven can do. 'Tis also needful to observe the Twelve Signs, and to calculate the motions and Regiment of the Planets, and to observe a time, a day, the hour of this or that lucky or unlucky Planet; such things neither promote nor hinder any thing; they neither hurt nor profit ought in the natural Art of Alchemy: But if thou rightly understandest the art and possibility thereof, then go to work, and labour when thou seest it most convenient; but if thou want'st the knowledge and practice thereof, then all the Planets, Stars, and Signs will wholly fail thee. It also comes to pass, that metals lying long in the Earth, are not only changed into Rust, but by a longer staying in the Earth, they return into their Native Stone, of which sort are many found, albeit they are not observed for there are found many pieces of Money of the Gentiles, which were Metal heretofore, and by Corruption were transformed into Stone.

[Claub.] Here we are, in the first place, taught, that for the making of ☉ and ☽ there needs not many Instruments nor Species, but the metals are not only to be conjoined, but not by the common separation or washing: For if you should wash all the metals with Lead, yet would there remain no more ☉ and ☽ than was taken at the beginning; the rest will defcend with the Lead into the Cupel, and will lie at the top thereof like Scoria; therefore he doth again direct to a spiritual Commixtion and Philosophical Separation. Alfo he adds, That 'tis an honest, good, and necessary thing to dig up Metals, but that the other is the more excellent, and that defervedly; for it separates Gold and Silver by Art from the more vile metals; for all such as apply their minds to metals, do well know with what dangers, coils, labours, and Cares, they are to be gotten out; but yet 'tis not therefore to be abstained from, especially since we labour by this Rule, of having a fore-known and certain end of our pains and work; the which cannot indeed be done in metallick Mineings, for we are frequently drawn by vain hopes to bestow all our Estates on the Mines; and having spent all in vain labour, we are at last compelled to desist from the Work; but yet if it succeeds well, they yield the more plentiful Returns; and many Chronicles of Metals do testify, That many Poor men have, by the Benefit of a rich Mine-pit, grown most Rich and Wealthy in a few years space. The finding out of Mines therefore doth wholly consist in Chance and Casualty, where Profit and Loss are equally and alike to be expected: The Work is likewise very chargeable, and can't be set upon by every body, and therefore 'tis not for ordinary People, who have but little to lose, but for rich Men, who, though they lose much, are notwithstanding able to live, unless happily a Poor man lights upon some Earth or Sand that is very rich in ☉ and ☽, and other Metals, by the washing whereof he may get a livelihood; or else finding a rich Mine, and so betakes himself to a Rich man for his Copartner, such a one as is able to bear the Charges of digging it forth; and this is often done. But yet be it as it will, the thing is full of uncertainty. Whereas this Metallurgy, or Work on Metals, which Paracelsus makes mention of, is to be preferred far before the other, if any one (by the Grace of GOD) attaineth the Art, whereby he may with profit extract the ☉ and ☽ out of

the already-digged-up Imperfect metals, which are every where to be fold.

But to return to the business in hand, viz. To illustrate the Writings of Paracelsus, who deserved much of his Country. He names some metals, out of which Gold and Silver may easily be extracted, and others, out of which 'tis difficult to get it, but in both Sol and Luna is to be added; for 'tis profitable, yea, necessary (the which I have frequently exhorted to) in the extraction of Gold and Silver out of imperfect metals, and is volatile, and may the more commodiously make it corporeal and fixt. Then he adds, That Metals by a longer stay in the Earth, do die, and return into stones and earth, from whence they had their original. The like happens to Man, and all Creatures; nor is there any thing in the World, how glorious soever it be, but is vain, empty, and perishing, but the Knowledge, Love, and Fear of GOD alone.

What thing Alchemy is.

ALCHMY is an intention, imagination, and studying, or considering how or whereby the Species of Metals are transmuted from one degree and nature into another. Let therefore every ingenious and understanding man thoroughly consider the good Art of Alchemy, for he that speculates and well studies, will the sooner attain the Art and find out the Truth.

Note, That very much is to be attributed to the Stars and Stones, for the Stars are the framers of all Stones. And all the Celestial Constellations, the Sun and Moon, are in themselves nothing but stones, from which the Terrestrial do arise, being as it were their burnt part, Coal, Ashes, Outcast, Excrement, Expurgation, from which the Celestial Stones separating themselves, become clear and transparent by their proper brightness: And the whole Globe of the Earth is nothing else but a dejected, flidden down, commixt, broken, recoiled Rubbish, and blown as 'twere into one Mass, having obtained Rest and Consistency in the middle Circle of the Firmament. 'Tis also to be noted, that Gems (the names whereof I shall presently mention) together with the other Stones, came down into the Earth from the Celestial Stones or Stars, to which they are nearest in all perfection of Purity, Fairness, Brightness, Virtue, and Consistency, or Fixity, and Incorruptibility in the fire, and are in a manner like to the Celestial Stones and constellations, being parts of them, and of the Nature derived from them, and are found by men in an impure gross vessel, and are supported by the vulgar (who judge rashly of all things) to have been there born or generated; such as are found are polished, and are carried throughout the World to be sold, and are accounted as great Riches, because of their form, colour, and other Virtues, of which I am now going to Treat.

Of Gemms.

The Emerald is a green Transparent Stone; it helps the Eyes, succours the Memory, defends Chastity; the which being violated, it self, viz. the stone, is hurt.

The Adamant or Diamond is a black Crystal; 'tis called Evax, because it produceth Joy: 'Tis obscure, and

of an Iron colour, most hard, is dissolved with Goats blood, and exceeds not the bigness of a Filbert Nut.

The Magnet is a stone of Iron, because it attracts Iron.

The Margarite is a Pearl, and not a Stone; 'tis generated in Shells, and is white; for whatsoever is generated in Animals, in a Man or Fish, is not properly a Stone, but only in the opinion of the vulgar: It is properly a depraved (or a transmuted) Nature on a Perfect Work.

The Topaz is a yellow pellucid stone; 'tis also a Flower, the which the Poets say to have been a Man.

The Sapphite is a Sky-colour stone, of a Celestial nature.

The Ruby is a Stone deeply red.

The Carbuncle is a Stone of the Sun, emits light and splendour, like to the Sun in his own nature.

Coal also is like to a Stone, all red, it grows in the Sea, on wood or a shrub, of the nature of the Water and Air; 'tis presently changed by the Air, and turns to a Stone, grows red, is incombustible in the Fire, and therefore may be esteemed a Stone.

The Chalcedony is a stone with bright and obscure colours, with mixt and cloudy fluidities and colours, yuddy, like to a Liver, the vilest of all the Gems, shining with every colour.

The Topaz is a stone, shining also in the night; 'tis found in either rocks or stones.

The Amethyst is a stone of a red and yellow; it shines.

The Crysolopus is a stone fiery in the Night, and in the day it appears Golden coloured.

The Crystal is a white transparent stone, like to Water congealed by the Air, and cold, (or of the Air and Cold) it is sublimated, extracted, or (as they say) washed out of other Rocks.

And now, for a Conclusion, I will give you this most true savelent. If any one will use a right reason, sense, and cogitation towards Metals, what they are, and whence they come, let him know, that our metals are nothing else but the best portion of common stones; they are the Spirit of the stones, that is, the Marrow, Oyl, Pitch, and Fat of the stones; but it is not sincere, pure, and perfect, as long as 'tis mixt and hid in the stones; this therefore is to be sought for and found in stones, and to be known in them and extracted from them; and then it is no more a stone, but a well-wrought and perfect Metal, assimilated to the Celestial Stars, the which also are peculiar stones, distinct from these stones. Whoever therefore is willing to find out metals, let him firmly believe this, and thus account, That he must not be only intent on the bowels of the Earth, that so he might get good Minerals from thence, for often times there is above or without the Earth in sight, which is not in the profundity and depth thereof, and oftentimes is better, and more rich.

Therefore all such stones as you meet with, whether great or small, as great whole stones or flints are to be most accurately search'd or look'd into, and to be considered of what Nature and Property they are; for oftentimes a most vile Flint is found to be more excellent than any Cow. For the Matrix or Rock, Although, whence they are gotten, from whence such a Stone did arise, is not always to be earnestly sought after, that you may have more from thence, for these stones have no Rock, the Heaven is their Rock; oftentimes also the Abyss Earth, Powder, and Sand, hath much gold and silver Dust, (Schlicht) which observe.

[Claub.] Here Paracelsus declares what Alchymy is, whose words being perspicuous enough, need no illustration: Then he leads us to the birth of metals, the which are generated in the Earth, out of the Stars above: He attributes to Gems the nearest place of Perfection, but does not intend that we should earnestly seek after them, to have gold and silver from thence, but that the metals should be made like them, as to their outward Aspect, and then afterwards the \odot and \ominus is to be extracted, to which all the scope of the foregoing Chapters tend, which is to be observed and enquired into, what his meaning is: Nor are the bare Letters always to be trusted to, here is nothing mentioned by him in vain. What affinity have Gems with the metals? None at all: And although sometimes the hidden \odot and \ominus may be extracted, yet he doth not at all intend here that we should make that, but repeating the former Doctrine, he hints unto us, That the metals out of which the \odot and \ominus is to be extracted with profit, are to be first reduced into soluble or insoluble Glems, most like to Gems; a good Company of them he here reckons up, and adds to what use they serve; not that we might learn their Nature, Colour, and Properties, (as I suppose) but to teach us, that as they are found different in Colours and Virtues, even so may the metals be prepared into Colours like unto them. He that neither understands nor will believe, let him seek better things, and get help and assistance elsewhere.

Then at length, by way of addition, he concludes what Metals are, and that they are not always to be gotten out of the profundity of the Earth, but are sometimes to be found most plentiful in moist vile powder, sand, and stones; neither is it necessary to be earnest in seeking their rock or original, whereby more may be gotten, because the Heaven by its operation generates them every where: he reproves men for their blindness, because they always gape after great Mines, lying deep, dangerous to be found, and chargeable to dig out. That which is laid before their feet, as it were, they disdain to acknowledge, peevishly affecting the dark, and stubbornly containing the light exhibited to them by honest men, and by an innate malice they study to extinguish it. And thus is this Book ended, the which Paracelsus, a most experienced man, hath left behind him, written of Metallick things, and is most full of abstruse wisdom, although few believe it, to the Elucidation and explaining whereof, I have heretofore uttered my mind, nothing doubting, but that hereafter it will be in better esteem with All.

Indeed I could have written more openly, and explained his words more largely, and more exactly have discovered his occult sense, but time and want of leisure permits it not at present. But if I seem to any body to have written more obscurely, let him consult with my other Writings, for they illustrate one another.

Now follows the Praxis of the aforesaid Theory.

THE afore-written Explanation of the Book (of Vexations) of Paracelsus, hath taught a most certain and undoubted Transmutation of Metals, and

and hath sufficiently advised by what means they are to be handled. But because this action requires a great experience in metallick affairs, I am willing to add some special waies of Proceeding, and that in perivious words; but 'tis impossible to write so plainly that none may erre; it would be too prolix, tedious, and unfit, and as if many Elements of the Physicks, and other subtilie things, were read to a Child that is not capable of understanding them; the labour thus bestowed, would be wholly in vain: Nor do I undertake to instruct the Tyroes or Novices in Alchymy, but such as are skill'd in the metallick labour of fusion, washing, separation, and the like, of a subtile Intellect and experienced Judgment.

I would verily have written more clearly, did I not fear that the Art would become a Trade; some will think that I have written too openly, and will be angry that such Secrets are made known to the World: Who can satisfie all People? But be it as it will, 'twill be always good to have done a profitable Work for my Neighbour.

This is the ART.

When thou hast put in the Heaven of η , and half made it to flow with its Life in the Earth, then add the Imperfect Metals in a due weight, viz. η , ν , δ , ρ , and a little γ ; let them flow so long with the Heaven, until with it they disappear, and having lost their nature and metalline form, are reduced into earth. This metallick earth being yet joined to the heaven of η , and compassed wholly round therewith, raise up by the spirit of Heaven, and make it corporeal, and it will receive its former metalline form; but although it be bettered, yet let it be killed three, or four, or five times, and raised up, that the melioration may be greater, and produce in the separation more Sol and Luna. There needs no Tyle, (Schutt) Cupel, Test, (trübscherben) Cucurbit, Aqua-fortis, and such like Vessels and Instruments necessary in other Metalline Labours, but 'tis perfectly finished in one only Crucible, in one Furnace, with one only Fire, and in the space of a few hours, from the beginning to the end. And to speak more plainly in this Process, the Sphere of η is the Regulus of δ , the Life is a whitening Salt, having its operation and motion from the Fire; the Earth is the Crucible. And thus hast thou the whole Process of the Work laid open, the which I have tried above an hundred times in a small quantity; but let the studious Artificer, above all things, observe the Fire, of what original, nature, and virtue it is, and the other things will be the more easily understood; for the Wood, the Coals, and such-like burning things, are not the Fire properly, but only its habitation, in which the Fire being occultly dispersed in the Air, is made manifest, visible, and perceptible. Even as the Man is not the Life or Soul, but only the receptacle wherein the Life or Soul, being infused from above, doth lodge: Nor is the man any more a man, but a meer carcass when the soul expires. In like manner Gold ceaseth to be Gold when deprived of its soul, but is volatile, and a Mineral without colour. Whence 'tis evident,

that the Goodness of metals consists not in their bodies, but in their souls: On this account \ominus is added to the Imperfect Metals, that it may receive that invisible soul which lies largely diffused throughout their bodies, that it may collect it, make it visible, perceptible, and corporeal, whereby the mixture of both (viz. of the Luna and the Soul of the Imperfect Metals) being made, it gets the name of \odot . Some body may ask, Whether or no Gold will be produced, if no \ominus be added to the metalline mixture? For answer, There will be \odot produced, but less in quantity than if Luna were added, because the most tender (and as it were incorporeal) golden soul of the imperfect bodies is not able to quit it self and get out by its own proper force, from so many impurities as 'tis invironed with, without some other help, nor make a new body; 'tis needful and good to administer and lend to it a body wherein it may be contracted, and thereto betake it self, for which the Luna is most fit; the which being by a vivifying Fire radically united with the unclean metals, and well subdued or exercised in the mutual ascension and descension, the purer particles of the Imperfect bodies do come together in this Circulation of the Luna, adhere thereto, are mixed, and become corporeal, the impure corruptible body being left, and a separation made of the good from the bad.

So then, I have now taught perspicuously the Art of extracting Sol and Luna out of all the Imperfect Metals either apart, or conjoined with or without the addition of the Luna. If therefore thou attainest to the Art, I am glad; if not, thou hast no cause to complain of me, for I have candidly imparted unto thee the meer and naked Truth.

Another Separation of Sol and Luna out of the Imperfect Metals, by η .

First of all, melt η well in a melting Vessel, (Scherten) add ν , δ , and ρ , mixt in due weight, melt them together, and forthwith the ν and δ will corrupt the Lead, being reduced into Scoria like to yellow Earth, and being reduced, they will in part restore their own Lead and Copper, but the ν and δ remain like black Scoria, which are to be kept: Let the Copper Lead flow well again, and again add ν and δ , and there will be again made Scoria, which are presently to be reduced. Let this Labour of Scorification and Reduction be repeated, until there remain scarce one or two pound of Lead out of an hundred to be washed, and you shall find \odot and \ominus in part, which the Metals give out from themselves in this operation: But the Scoria which can't be reduced, let lie well heated red hot, in a peculiar Furnace, for some daies, and be fixed; and they will give in the reduction a golden and silvery η or Lead to be washed, that so the remaining \odot and \ominus which the Scoria drank up, being extracted, may be of use unto us. This labour (which I never tried in great quantity; will doubtlesly (in my opinion) succeed in quantities; any one may try the thing, and exactly compute how much profit they be thence had every year.

Also the most Imperfect Metals may (by the benefit of Salts not corrosive) be truly and infallibly fixt and wash'd by a particular way, that they may give much \odot and γ , concerning which none need to doubt; the which I having oftentimes mentioned in my Writings, will not repeat it again.

Metals also being first reduced into a Calx, may be purged and wash'd by the glass of Lead, made by the addition of Flints, so as to yield much Sol , concerning which I have written heretofore: But there's required much h , whereby the metals may be largely diffused, otherwise it will not let fall the faeces; nor can its more pure parts be gathered together into a body, and concentrated; I take in the Flints, that they may receive into themselves the faeces of the unclean Metals, and so make a separation of the pure from the impure. And like as we are wont to mix the whites of Eggs to Honey, Sugar, and other Vegetable Juices, in the purification of them by Water, that thereby the viscosities of the Juices may be attracted, and so be clarified. In like manner, the Flints do in this operation occupy the place of the whites of Eggs, and h of the Water wherein S , Q , or V is to be dissolved; the Labour is most pleasant and speedy, exceeding gainful, if the Crucibles (perforated by the Litharge) would but hold the mixture, and not let it pass through so soon.

But whosoever shall be so happy as to find Vessels which can keep in the Glass of Lead for ten or twelve hours, he need not be solicitous or careful of other Arts to enrich himself by. For my own part, I could never be so happy hitherto, albeit I have carefully sought it for so many years. One only pound of Iron, S , or V , doth sometimes yield half, yea a whole lot of Sol , if the Work be rightly managed. And if you add a fix'd Salt, as of Tartar or bare Pot-ashes, it will then yield more, but the Crucibles will be the sooner perforated to our grief. I do believe that one or other will be a curious Searcher after this, and may in due time find how to make this Work succeed very well, both in Crucibles and in great Fires, or melting places; and will be thankful to GOD the Giver, and to me the Writer hereof. Heretofore I did set by this Labour very highly; and although I would not then communicate it to any body for a great price, yet now (being not permitted to make any further Progress therein) I freely bestow it, that others also may try their fortune.

Also imperfect metals are purged from their combustible and noxious sulphur, by the suddain fire of Nitre, of which we have formerly spoken about Mercury, the which is to be looked on as the most speedy, and as it were a momentary Melioration of metals. N. B. especially if they are reduced into a soluble salt without a Corrosive, for which thing S and Q are most fit, exhibiting a Philosophical Vitriol, the which may be most commodiously purified to perfection. There's a great secret lies here under, and happily greater than a particular work may require; let the Poetical fable of *Venus* and her son *Cupid* be considered of; what is there meant by *Cupid*, whether or no it be not \odot . Verily I could discover more good ways of producing \odot and γ out of the more vile metals, but because there's enough already spoken in the explication of the seven Canons or Rules, it seems good to me to forbear. He that doth not understand that nor can apprehend its drift or scope, will not be profited by the addition of more things. If the funda-

mentals are laid open, any one will conveniently administer his intent and labours: But yet I will add over and above, a most pleasant work, Parabolically, being the foundation and Basis of the whole Alchymical Art, under which is comprehended the radical solution of metals, *Conjunction*, *Defillation*, *Sublimation*, *Ascension*, *Descension*, *Cobobation*, *Cementation*, *Calcination*, *Inceration*, and *Fixation*, and so I will end the work of *Transmutation*.

There was a man (h) who had two sons, (*Bismuth* or *Tinglas*, and v) the younger (v) said to his Father (h), give me my portion. (Note well, *Bismuth* and v were always accounted Lead, as well by the Philosophers, as by the ancient workers on metals, the one *viz.* *Bismuth*, they called an ashy colour'd Lead, the other (v) a white Lead, and this a black Lead,) and behaved himself stubbornly and unmanly, that is, ascending or getting up; his Father gives it him, and he goes a wandering therewith. (Note well, when v and *Bismuth* together with h do feel the fire, the v is separated from the h and *Bismuth*, and ascending, takes some-what from h with it, and becomes a Contumacious *Scoria*, and this is to go a wandering) and he enters into an Inn, where S the *Hof*, and Q the *Hofstet*, had the sign of the World (S) in a hanging Table, who having entertained him, dispoiled him of all his Fathers goods, (Solution) Then there grew such a great scarcity of Corn (with drought) that all men were even deformed by reason of the Famine (corruption), to prevent which he is enforced to keep hogs, (that is to dwell with fetid Nitre) and to feed on husks, (that is *Tartar*) (inceration, imbibition) by which being humbled (Digestion, Circulation, Edulcoration, Putrefaction) he returns to his Father, (Incorporation) as a lost Son, (some thing is made nothing, and nothing is made something again) he brings forth a new Garment, (*Argentum*) he puts a Gold Ring on his finger, (S) impregnated with \odot after which he remains constant with his Father, and becomes a good and thrifty Householder, that is, a fixt metal. And now that I thus compare this Transmutation of imperfect bodies, especially of v to the parable of the lost Son let no body be therewith displeas'd, for I did it for the easier knowledge thereof. There lies under it a great secret, I never observed the like-changes in my whole Labours; for first of all, in the Solution appears a blackness, which having remained his time, there follows the tail of the Peacock, greenness and then whiteness; but whether or no a redness would follow, if it be detained longer in digestion, I am not certain, for I never arrived beyond the whiteness. It is a most pleasant Labour, greatly exhilarating the Artificers mind, of small charges and little difficulty; if they find the weight and good vessels, it shews the way and opens the Door to higher Secrets, happy is he who attains the things, he'll never be satisfied with the sight thereof, nor admiration, how rich, generous, fair and glorious Nature is in her retirements. Note well, that every Metal may be washt apart with h and Salts, so that being exalted, it may yield \odot and γ in separation, and pass through all colours, but it will not be so profitable, as if they were all joined together, for then one operates spiritually upon the other, changeth and perfects him. And now having abundantly discovered, how \odot and γ is to be extract'd out of the imperfect metals, and because in that labour \odot and γ is most an end jointly together, 'tis very necessary to know, by what Art they may be separated each from the other, that so each may be had by it self, which is

to

to be done thus: If this mixture hath more \odot than γ , 'tis most profitably to be melted by Antimony and precipitated into a Regulus with Iron wash'd with Nitre and purified. This work you may find described in my former Books. NB. If the Nitre in the separation of purification of the Reguli, prey upon some of the \odot and γ and attract it to it self, let none grieve thereat and account his labour lost, but let him remember the saying of *Paracelsus*, Destruction or Corruption makes the good perfect; The Nitrous *Scoria*, in which the clean'd Reguli are, let be carefully kept and fixt, then by a strong flux let them be reduc'd and you shall receive the lost Son, much more elegant than he was before it's being lost, so that hereby you lose not, but rather become a gainer. Here would be a fit place to speak of a certain profitable work if the drift of the thing would permit. Enough is spoken to a wife man, Fools will not profit by any thing: But if it contain more γ than \odot , let the mixture be at first of all granulated, and burnt with Sulphur, let it be precipitated, either with S alone or without it, with lead and Salts; thus separating the \odot from the γ into Reguli; then wash it with Nitre or with Lead, and let it be purified, the work being to be done in like manner. You are to note that if the precipitation be done with h , then the *Caput mortuum* (*Halb Kopf*) is to be added, whereby the work will be apparently hastned and bettered. NB. If the Reguli of the matured or fixt Metals be coppery or pale, they need not be washt, but 'twill suffice if being granulated, they are precipitated with Salts, and the *Caput Mortuum* (*Halb Kopf*), all the \odot and γ will come forth in peculiar Reguli, the Copper and the Lead will be scorified, and may in acute Furnaces (*Stoff ofen*) be reduced, and applyed to other uses according to the rule of Art. I judge it inexpedient to heap up more things concerning Extraction (*Setzen*) washing, and the separation of metals, being every where mentioned in my other writings. Also it will be need-

less to explain, by what manner metals may be more commodiously melted so as to yield more and better metals, as also how the poor and rough Minerals that abound with a preying and devouring Sulphur, whereby the metal in its fusion, is turned into *Scoria*, and affords so little profit, that being not able to quit cost, they remain unmanaged, the which Sulphur especially in the Minerals of Copper and Lead, may by a singular Cement or Gradatory fire, be inverted and changed, so that afterwards in their fusion, it's so far from swallowing up the metal, and turning of it into *Scoria*, that it rather exalts it so as to give \odot in the separation, the which could never have been done without this burning or roasting. No body doth thoroughly search after any help for this or that metal, either before the melting or in the melting of it, if the gross fire is not able to melt it down, but most frequently the best part remains in the *Scoria* without profit or use. 'Tis possible for an experienced Chymist, profitably to extract that \odot and γ which the *Scoria* have swallowed up, what by fusion and by adhibiting suitable *Mensurums*. A work of this nature hath been hinted in my discourse of the Extraction of Flints, and more shall be likewise mentioned when I come to write of the felicity and hidden Treasures of *Germany*, which time let the Reader with patience expect. A nother benefit would arise to such a work on metals, if they had the perfect way of separating γ and separating the \odot by precipitation, that lies therein, (*Reiser Schlag*) that it may not be so unworthily wast'd with the γ by the Artificers.

And thus I conclude this Appendix or addition to the Mineral work, the which I have brought forth to light with a good will for my Neighbours sake, that so, being accepted with a serene mind, the Glory of God may be thereby advanced; for which end I wish with all my heart a divine benediction on the Labours of every honest and active searcher into the metalline affairs. Amen.



The APOLOGY of

John Rudolph Glauber,

Against the Lying Calumnies of

CHRISTOPHER FARNNER:

'Tis an ancient Proverb, *He that toucheth Dung is defiled, and will alwaies savour of a Dung-hill.* Experience makes it evident.

I Ever hated Quarreling, as more agreeable to the Pevishness of Women, than the more Generous Temper of Christian Men; and have, as much as I might, alwaies declin'd it, being rather desirous to suffer injuries, to bear losses, by silence to forgo those things I might lawfully lay claim to, to undergo any thing, so that I might enjoy my beloved Peace (with which GOD has blest me hitherto). Neither have I ever, so long as I have liv'd in the World, (and I am pretty ancient) been taken, by the worst of men, for a contentious Person: But perfidious *Farnner*, unprovoked,

voked, urges me to this vindication of my self, by going about not only to hurt my Person, but also by a Pride no less than his Envy, to explode and defame all my Writings, and by infamous Letters dispersed abroad, to render me odious to all good men. Which wicked Enterprize, though I heard of it by many, I durst not believe, till a printed Epistle of his came to my hands, which having perused, I thought I could not enough admire his detestable Impiety, and the many scandalous names he had for me.

Art thou not ashamed *Farmer*, to expose my Works to the contempt of others, when thou neither dost, or ever canst understand 'em, and before now hast praised 'em, as may be proved from your own hand? I'm sure I never merited that you should cavil at me where'er you come, and proclaim my Writings unprofitable. You ought rather all your Life, in consideration of the many benefits you have receiv'd at my hands, to have behaved your self as a Man grateful to me; but instead of that, notwithstanding the Obligation that lies upon you to the contrary, you have delightfully recompens'd all my kindness with the basest Ingratitude, which is directly opposite to goodness.

To what end do you deny that you had your greatest knowledge from me, and in the mean time expose it as your own, and upbraid me from whom you had it?

I never before believ'd you unfaithful, but always thought you candid, and have communicated so great things to no man as to your self. I believe you will not deny your coming twice from *Lochgovia* to me at *Kitzinga*, and entreating me to communicate some Secret to you, whereby you might get a livelihood. Have you not been forced twice, being repuls'd, to return home with this Excuse, That I wanted time to instruct you? And when you came the third time, I suffered my self to be persuaded, and did communicate some Secrets to you gratis, on this consideration, That you should impart those things wherewith I trusted you, to no man without my leave; which you promised by an Obligation, (*viz.* That you wou'd keep all things secret) under the penalty of Disgrace, and the forfeiture of all your Goods. Why hast thou falsified thy Word, and contrary to thy Promises, so wickedly ridicul'd me among all men, when with thy whole Family thou didst promise to be faithful to me? Not only Obligations, but also thine own Letters are Witnesses: Neither do I question, that if I had lost or wanted time to convince thee, thou wou'dst have denied, and that with an Oath, that thou wast ever beholden to me for any thing, as thou hast already begun, and as thou in thy spiteful Writings despitest all my Secrets, and proclaimst thine (which yet are mine) with praise. You doubt whether or no the reading this will make me repent that I ever trusted you with so many things, which I had never done, had not you oblig'd your self to labour diligently with me in my Laboratory, to produce those things for the profit of us both. But what can I do with them? They are perished and gone which yet might sufficiently have sustain'd both you and me, had not you made 'em publick.

I pray, What gain can you hope for from them, now they are every where known? Wherefore when I see those things taken from me, and by you imparted to all men, in spite of me, for your own advantage, I think fit (for I cannot hope for any farther

profit from them privately) to make 'em known to the World; and by the Grace of G O D, I may live without them: But if I also should buy all thy goods which thou unjustly possess'st and sellest to every man, of thee, and distribute them about the world, thou wilt see thou canst not easily recover them, or others in their room. I indeed will give you nothing for the future, neither can my unfaithful Servant, whom you have made as good as your self, give you any thing, for whatever he hath learn'd of me these two years, he has given you, which you also have laid up among your own wares and expos'd to sale. Who will hereafter trust you, you have so wickedly deceiv'd me? Every man will abominate you, and shun your Partnership and Company, neither undeservedly, for the Laws of your own Obligation make this your Fate: So the merit of the Crime shall return upon the Author, and you can be more sure of nothing, than that Divine Vengeance will pursue you. I confels indeed some others, as well as you, have injur'd me, but none by so wicked an act; whom nevertheless G O D (to whom I refer'd my Cause) hath so severely punished, that each of them, by one cause or other, has brought upon himself his deserved Reward of Punishment. But I had yet farther tolerated you to exercise your Trade at your pleasure; neither had I followed you to *Lochgovia*, to urge your Obligation to you, but had committed Vengeance to G O D; only for that you were not content to sell those things publickly for your filthy lucre, which you had of me, but also you have rendered me, and the things you had from me, odious; which has been so much to my disadvantage, that I can no longer bear, but am now resolv'd to the utmost to refute those impious and lying Calumnies, which you by your Letters have sent into the world concerning me, and to defend my self and my Works, against which you have so wickedly inveigled, that all the world may see how great your perfidiousness has been towards me, and that your Heart acted by Hellish wickedness, has rag'd against me with horrid Lyes, Taunts and Reproaches, contrary to all manner of Equity: You must needs know, that nothing can be more troublesome to me, than to spend that time in reproving your Lyes, which I could otherwise employ to greater profit; wherefore I shall answer your trifling stories as briefly as is possible. Every wife man will easily see how frivolous your Excuse is. Do you think that any honest man will believe you, if you say you don't owe the greatest of your Knowledge to me? No surely, for no man is ignorant of it: About two years since, you did not know how to bring a Crucible to the Fire, much less to make a trial of Brass; which you did not learn of me, but my unfaithful Servant taught it you, whom you for that cause esteem; yet seeing you know so much, how lawfully may I complain of him, what a Rascal he has been to me, and that you for that very reason have taken him to your self, that you may shun from him whatever he had learned in those two years he served me; although he did not shun you, because he was unwilling to communicate those things he had learn'd of me to any man else.

And so you make your self Master of my Secrets, and Covenant with him to undo me and mine: Is this the part of a good man? You do not

only expose those things you had of me, but those also which my perfidious Servant has since given you, to be sold at a price, when you have no right to sell another mans goods, to which you have no title. We'll come to the point and expose all your wickedness, as well your impious speeches, as perfidious actions, to the view of the world: But first of all, I will lay before you the obligations you gave me, as most sure pledges of your truth, that by the review of them, you may judge your self how honest you have been, and how faithfully you have kept your promises; and every man shall thence see, (especially those among whom you have so wickedly ridicul'd me) with what base ingratitude you have recompens'd all my Favours.

The first Obligation which *FARNNER* gave me, runs thus;

Forasmuch as the most excellent and learned Mr. John Rudolph Glauber, moved by a singular affection towards me, has communicated, shewen and demonstrated to me undernamed, some of those secrets whereof he is Master, and hath enjoined me to silence; I therefore bind my self, and promise upon my Credit and Reputation, and call God and my christian profession to witness, that I will divulge none of those things to any man living: but if it be so (which God forbid) that I do at any time communicate any of those things to any man, then I shall most willingly renounce all my right in those Goods, movables or immovables, which I shall possess, and give him absolute power to take them to himself, and convert them to his own use and advantage: and not that only, but I give him farther power to proclaim me perfidious and wicked, to defame me and make me abominable to all men, for which reason, the laws of Silence shall be observed by me most strictly. Nay farther, in consideration of the many benefits he has bestowed on me, I give up my self, my beloved wife, and my children to serve him in all things: lawful and honest, to go when and where he pleaseth, and to ease his labours; and if he dye first, (which God avert) to be alike serviceable to his whole Family, which care he also has promis'd to me and mine: I promise then, (if my Fate grant me life) that I will be to my utmost, serviceable to him so long as he lives: In witness whereof, I have hereto set my hand and seal. Given at Kitzinga, the 15th day of June, 1652.

Testis, Spirensis Canonicatus Quaestor, Lochgovia & Horrhem.
Christophorus Farnerus.

The second Obligation.

I Christophorus Farner, for the time being Canonicatus Quaestor of Spire, Lochgovia and Horrhem, in the Dukedom of Wirtemberg, to all by whom these presents shall be read, make known, that the most excellent and learned Mr. John Rudolph Glauber for little or no reward, has communicated some of his secrets to me, and with me made a covenant after this manner, That I must

oblige my self for what he hath already done, or hereafter shall do for me, to be all my life thankful, not only to him, but to his Children also. But for as much as 'tis most certain, this life will have an end, but we know not the time when, the first Obligation is not full and clear enough, and for that cause I bind my self and promise, (so help me God) and swear by the King of Heaven who always bears witness to the Truth, and farther, upon my Credit and Reputation, for the preservation whereof every Christian man should be induc'd to keep his promise, if (which that God would in mercy avert, I shall not cease to put up my daily Prayers) the above named Mr. Glauber and his beloved wife shall die, and leave their Children unmarried, I do oblige my self by this most solemn Oath, to observe faithfully, and as a Christian man ought, the following things: viz. I will forthwith take his Children to an inheritance with mine, and to my utmost skill, instruct them in the secrets of their dead Father, and shew them all things requisite and necessary, as fully as to my own Children; and that after this manner, That what ever of their Parents heritage belongs to them, they shall wholly possess, and they shall lawfully demand it as their proper dues, and if any thing goes from him, I will redeem it, so that his Children shall lay no claim to it: on the contrary, (for those secrets communicated to me, which hereafter may redound to my profit) I make the aforesaid Mr. Glauber's Children Heirs with mine, that they may be admitted equally to my Estate, and alike enjoy the Goods of me living: But if I Farner, contrary to my expectation, shall depart this World before Mr. Glauber, he is bound to instruct my Children in his Art, according as they are qualified, only so far, as that thereby they may get their living, and that they may not be burdensome to him. He may at his pleasure instruct him that he shall esteem most fit in some secret, with which he shall afterwards teach his Brethren to get themselves maintenance. And for the same cause, I call my little Son Alexander, and surrender him to Mr. Glauber and his service, so that he may keep him as long as he shall be willing, and it shall not be in my power to take him from him according to the agreement we have both made with him: all which things are refrain'd to this on either side. That if the Parents of either part die before their Children are provided for, which God forbid, and our Children shall be free by the early death of their Parents, then each shall to his utmost, provide for his own Children.

That all these things may be observed the more firmly, I affix my Seal and name, and by my own hand writing, oblige my self so, that if at any time I falsify my word, my Children may be call'd to witness my perjury. Given at Kitzinga the 10th of September, in the year 1652.
Christophorus Farnerus.

NB. I did not require this obligation of *Farmer*, neither wou'd I have taken it, but admonish'd him to be true to the first, with which I was content; for he gave me this for no other reason, but to get more out of me: But, because I had found out his cheats, and he wou'd not be advis'd for his own profit, he at last makes mention of this new obligation, in a certain epistle of his, thinking thereby I was oblig'd to a farther communication of my Art to him; tho I have often told him, that I valu'd not this last obligation but wou'd give it him again: But when he refus'd to take it, I cancell'd it, and kept it by me, for this reason, that it might be seen how he had bound himself by this new Obligation, which certainly he wou'd never have done, without very good cause.

Expressions gathered out of certain of Farnner's Epistles sent to me; from which is evident how greatly he is bolden to me.

Therefore I faithfully assure you, that I will shortly leave my House, and take a Journey farther off, to provide for my Family; my Wife too is very willing to go with me, and to be interested in our agreements, but I can't see what should oblige her to it, when it can't be effected very commodiously: Yet I resolve, if nothing extraordinary binder me, after eight daies, that is, on the 22th. day of April, to depart hence, and then answer your most friendly Letters, together with your beloved Wife, and all my Family, to take part with you in all your Labours, and help you with the greatest diligence. But because I intend to be so suddenly with you, I shall write no more at this time. March 26th. 1653.

Out of another Epistle, July 17th. 1653.

I Hope you will excuse me, that I did not come to you, because hindered by my Wife's faultines, who telling me she would come with me, privately laid Obstacles in my way; this offence would not destroy a Knave: Wherefore I again intreat you not to cast me off, but continue your wonted favour to me; and I shall endeavour in my place to give you ample satisfaction; neither shall anything binder my speedy performance of what I have promised.

Out of another Epistle, July 29th. 1653.

Forasmuch therefore as I have by the wicked deceit of my Wife, broken the many Promises I made of coming to you, unless I would have taken her wicked Anaxius or galand, as Companion in the Journey; it has at length pleas'd God to take her away, and so put me in a capacity, Worthy Sir, of serving you without the least impediment, wherefore I give my self wholly to your Commands: And altho' I have been persequ'd by Persons of principal Authority to marry again, I will not, but commit my self to be manag'd by your Council, as you were my Father. Therefore, since we are parted, if my Fates grant me Life and Prosperity, I will come to you, and commit my self to your guidance and protection, Worthy Patron; for which reason I shall forbear to write any thing at this time of your Laboratory, more than what I see in your Letters, that all things may proceed the more regularly. Wherefore, though I have been sollicit'd by many, yet shall reject all as much as I may commodiously, in hopes of this, that when I have first gotten your consent, I may communicate my labour to some, whereby I may get a good Sum of Money: But these things shall be deferred till our happy meeting.

In another Epistle he saith;

That he was confident he could find out all my Art by my Writings, except that the Vessels do not always abide the Fire, and that the Apothecaries refused to buy his Medicines, unless he would teach them the way to prepare 'em: Again, he would give me Fifty R. Dollers for each month, for my part, as may be shewn from himself; these are his words: And if he was not oblig'd to me, why would he give me Fifty R. Dollers each Month?

From all which (and much more I might add, which for brevities sake I omit) it evidently appears, that Farmer was oblig'd to me, which he would never have been, had not he receiv'd some benefit

from me, which render'd him bound to me: But if he is oblig'd to me, why was he so wicked, as in his lying Epistles so malapertly to despise, and disparage me and my Secrets, which he had from me? Hence then every man may perceive what they ought to judge of him, that he has both behav'd himself most perfidiously wicked toward me, and also, that he has sufficiently declar'd himself the most ungrateful in the World.

But that no man may suspect that I wrest any word of Farmer's, in his obligations given to me, to his disadvantage, or my own ends, I have taken care to have his own hand-writing view'd by Notaries and Witnesses, who will attest, that what I have printed is word for word the same with what I have in writing under his own hand.

A Specification of those Chymical Secrets which Farnner learn'd of Glauber, and in the trial found true; and of those which yet are found and brought to trial; where it must be known, that those, of which there is no mention made here, if Glauber should relate them, they would not answer his expectation in Practice, according to his information: Also the Charge which he must be at who will make trial of those Secrets after a right manner, is here added.

1. Glauber's Panacea, for 30 R. Dollers.

About which these things are to be considered: It is made chiefly of Antimony; to which, according to his common way, Sulphur is added; which done, another Separation is made, in which from a whole pound of Sulphur and Antimony, no man shall receive more than three ounces of the purest Sulphur. There are indeed two other Subjects, which produce a golden Sulphur better than Antimony; but I have found a way to extract a thick and pure Sulphur from all sorts of Metals (except Luna and Sol) and Minerals, and after Glauber's manner to make Tinctures. All these Secrets annexed will be taught for the price named.

2. To reduce Minerals and Metals into Drofs, after Glauber's way, to reduce them to nothing, and then without Charge to bring them to their own Species again, or to turn them into fluid Oil, or Powder, or Tinctures; which things bear an affinity to those above: For Twenty R. Dollers.

3. Glauber's Alkaleft, and a way to prepare it, perhaps unknown to Glauber, and built upon a more firm foundation; Fifty R. Dollers.

4. The Trial of all sorts of Brast, but not of every sort at once, for every one must have a particular Practice.

5. To make store of Flowers of Coral for a little Cost; ten R. Dollers.

6. To make melted Tin hard, that it shall shine and stand like [Silver]; Ten R. Dollers.

7. To make white Purifications upon Vessels; for Ten R. Dollers.

8. Plenty of Spirit of Salt.

This is not prepar'd after Glauber's way, and though Glauber was so great a Lyr as to affirm, that in a clear Fire fifty pound of this Spirit might be prepared in one day, yet he cannot produce above one or two pound: Wherefore my invention is much better, and my Spirit is pure, but Glauber's has Vitriol mix'd in it.

And though I gave Glauber a great Sum of Money to communicate these Secrets to me, yet I have not found any

any of them true, according to his Information, but was fain, with great industry, to seek other waies of working those abovenamed.

And for those that follow, though they may seem to be derived to me from Glauber, yet they have not succeed'd by his Information, but I was forced to go another way to work, which will hardly be found by Glauber.

9. To prepare good Store of the Spirits of Vitriol, Nitre, Salt, Aqua fortis, Aqua Regis, also Sulphur, after a manner not yet known, and which will scarce be known to Glauber; forty R. Dollers.

10. To produce plenty of volatile Mineral Spirits, which Spirits ascend the Still before the Phlegm; but the abovenamed after the Phlegm.

NB. These Spirits have the same taste that Spirit of Wine hath, and evaporate like it, and are void of corroding: neither do I doubt, but I can produce such Spirits from Metals also, though in metallicks I have made no trial yet.

11. Flowers of Minerals and Metals, almost without diminution, compendiously under a refrigeratory cover, which Glauber never saw; Ten R. Dollers.

12. The Quintessence of all Vegetables: Although Glauber, in his Treat, promised to bring that also to light, yet he never performed it from all Vegetables, but only from hot, which give Oil, which is of no moment; but that from cold, to wit, Herbs, is artificial. Thirty R. Dollers.

13. To give new strength to dead and eager Wine, and make them as good as ever, or better; Two Hundred R. Dollers.

NB. Note here, That I very much run against Glauber's Treat of Vinary Secrets; and if my own Industry had not taught me more than that, I might indeed, according to his instruction, encrease the strength of Wine, but with an ingrateful relish, so as I could never hope to try eager Wines according to Art. But now I cannot only bring to maturity all sorts of Liqueurs from both sweet and sour Grapes, and other sorts of Fruits, and give them new strength in the Hoghead, but also render them palatable to all men. Whoever hath tasted Glauber's Wines, and shall afterwards taste mine, will easily discern a difference.

14. To give any Wines what relish I please.

15. To prepare a burning Spirit of all sorts of Bread-Corn in abundance, with great ease and profit, very much like that which is made of the Dreggs of Wine, and sustaining all Trials: There are already eight pounds of it in trial, whether they will bear a Voyage by Sea, or not; they are sent beyond Sea, which if they will undergo, Two hundred R. Dollers.

NB. Further, I know how to reduce all burning Spirits into one form; as, the Spirit of Juniper, or Bread-Corn, like to Brandy, or to make spirit of Wine like Spirit of Bread-Corn or Juniper, so that it shall not be discerned of what subject 'tis made.

Neither do I doubt, but that I know also how it comes to pass, that some Liqueurs carry'd beyond Sea, are corrupted: Which therefore, if by the benefit of this trial, the Certainty is made known to me, a good reason, and after what manner it may be help'd, may be learn'd of me for a trifle.

16. To encrease the strength of all sorts of Beer, that they shall have equal Virtue with Rhenish-Wine, and yet the Beer lose nothing of its relish, but be both more pleasant and durable; for when thus order'd, it will not so soon sour; but if it be decay'd, which will happen to Wine in time, the Vinegar which will arise from it, will be as good as Wine Vinegar: fifty R. Dollers.

17. To give some Beer its natural Sweetness, and in

fourteen daies to make it sell for fresh; and so, though turn'd three or four times, to make it sweet in fourteen daies time without fail.

18. To produce Vinegar of Bread-Corn, and such other things, very like Wine-Vinegar in all things, without fail; fifty R. Dollers.

19. To prepare Vinegar of green woods, an Hundred measures daily, together with Oil of Wood, without Charge; but if any man will have this like other Vinegar, it requires rectifying, which will ask sometime and cost: Ten R. Dollers.

20. Although Glauber delivered in a little Treat, a way to make Tartar of the burnt Lees of Wine, yet I have almes committed many Errors, by following his very Oral instructions, till be thinking my self, I at last made it with fruit, and plainly reduced it to Crystals.

NB. Whoever will follow the Directions of that Treat, may.

21. To separate every Oar of Copper with profit, and from thence to produce Gain.

22. Of that sort of Copper Oar, if by chance they have any from thence, to separate it with fruit, without loss of the Copper and Lead.

23. To separate Lead from Tests and Cupels, for small Cost, and as little Labour.

24. To separate Gold and Silver by melting.

25. To build a Furnace, in which one may both torrefie, melt, and try Metals in the Probations of Cineritium; containing the small Trials of an hundred Crucibles, or more, only heat with Wood.

26. Further, a Furnace, in which, without Bellows, one may try a good quantity by the Probations of Cineritium.

And Lastly, Forasmuch as the lesser Trials have deceived me, if I went to work on a greater quantity, I will teach wherein my chief skill consisteth.

1. In the lesser trial I have found, that with the Spirit of Wine, as 'tis generally prepar'd, I can make an Anatomy of all Vegetable, Animal, Mineral, and Metallick Subjects, separate their three Principles, make the volatile fix'd, and the fix'd volatile, and force 'em through a Limbeck.

2. To force the Anima and Salt of Gold through the Limbeck, and to reduce it, well mix'd with its Spirit and volatile Salt, into a possible body like Vegetable Essences.

But because Gold may be reduced into such a sort of Essence, it will not be very hard to render the imperfect Metals and Minerals, with their Three Principles, potable: and these Principles are inseparable in their volatility; wherefore I doubt not but they may be fix'd.

3. Furthermore, I have found by small trials the way of taking all Corrosion from all Corrosive Spirits, by this general Spirit, and of reducing them (by the help of Divine Providence) into sweet Oils or Menstruums; which if it answer the desire in large quantities, (and I don't doubt it) Glauber with his Alkaleft, which indeed is not wholly to be despis'd, must be forc'd to hide: for I have hopes, that by the assistance of Divine Providence, whatsoever subject I shall propose to my self, I can separate and purge its three Principles; lastly, join them, and so produce a better subject and more pure: But 'tis true, seeing I was so often deceived in the lesser trial, I did not interpret it as Truth, but Speculation. However, I can effect very well whatever I have here said, as well in the great as lesser.

4. But forasmuch as so many excellent, as well as new, Secrets, offer themselves, that I can't close but clearly know them, and therefore 'tis impossible that I should make all those Secrets abovenamed profitable to my self: And although I am now about many things, that hereafter

great quantity of them may be expos'd by me to be sold in thousands and hundreds; yet I shall not be so envious to refuse a Communication of them to any man for the named Reward; nor keep from him any knowledge I can give him.

Let me must know, that it is very troublesome to instruct any man that is altogether ignorant and void of skill in Chymistry; Therefore whoever will learn any of these things of me, let him either come to me, or signify his mind by his Letters, thus: To Christopher Farnner, Canonicate Questor of Spite, &c.

These are the words of the perfidious Farmer, which he hath used in his most false and wicked Writing.

A Specification of those Chymical things.

This, good Reader, is the Beginning or Preface of that Lying Writing, in which he hath expos'd to Sale those Secrets he had of me, and found good: Besides, he adds, That those Secrets which he had of me, which do not succeed according to his desire, are not added; but those only whose Truth he has found in the trial.

Now we'll open this Pedler's-Strall, and look through all its parts, to see what is in it.

These words follow:

1. Glauber's Panacea;

About which these things come to be considered.

Here Farmer saies my Panacea, for the greatest part, is prepared of Antimony; besides, there are yet two other subjects, from which a purer Sulphur may be extract'd, than that which is drawn from Antimony: Which vain fancies he may vend, or what else he will. I can't hinder him, seeing I have taught him to extract nothing but a pure Medicinal Sulphur from Antimony, by the benefit of a singular Liquor, which I call *Alkabeft*. He adds also, That he can extract the same Sulphur from all sorts of Metals and Minerals (except \ominus and \gg) and after Glauber's way convert them into Tinctures.

I declare against this his first Position: Farmer here saith, That Panacea may be prepared from Antimony for the most part, and promises to communicate it to any man that desires it, for a certain price, to wit, thirty R. Dollers. But thou hast seen, gentle Reader, how strongly he bound himself, by his Obligation given to me, to keep secret those things I had taught him, and communicate them to no man, under the Penalty of Disgrace, and the forfeiture of all his Goods. I confess indeed, being cajol'd by his frequent solicitations, I taught him the way of preparing the Panacea, but from no subject but Antimony. This Panacea of Antimony Farmer exposes to sale, for thirty R. Dollers; and moreover has taught that Preparation to many, from whence great profit hath redounded to him; when yet this was not lawful for him to do: But he shall be forced ere long to give his Reasons for so doing; and I will one day see if I can have a remedy for this evil. I will now only shew how wicked he has been to me: Wherefore I am compelled to expose those secrets he had of me

and every where makes common, to the view of the whole World, that no man shall need to give Money to Farmer for 'em, or any other reward, but may come to the knowledge of them for nothing: for if that knowledge is divulg'd by Farmer, who unjustly, by the publication of it, endeavours to heap up to himself Fame and Riches, I may well communicate them to all men faithfully, that every man may save his money: But because this Panacea is prepared by the benefit of a hot and Saline Liquor, which I call *Alkabeft*, therefore 'tis necessary that he who desires this Panacea should first know the Preparation of the Liquor it self, without which he can effect nothing. Indeed it grieves me, and I am very hardly brought to discover and divulge to the World so excellent a *Menstruum*, by which so many rare Medicaments may be prepared; and I had never done it, had not this perfidious Farmer chang'd and adulterated it and its use in the Preparation of the abovenamed Panacea of Antimony and others, from Minerals, Animals, and Vegetables, and by prostituting and communicating it to all men. I think him, indeed, a Boar out of the Forest, broke into my Garden of Flowers, that has with his snout routed up all the many Fruits, which with much sweat and labour I have planted; but the deed will once be rewarded.

Now follows a very short Description of the Preparation and use of that Liquor, needfully requisite in Vegetable, Animal, and Mineral Medicaments: And though I might teach another and far better way of preparing it, yet there's no necessity for throwing all my Pearls before Swine: It is sufficient, to my sorrow, that I cannot recal those which this unfaithful Farmer has sent abroad, and am forc'd to behold their destruction with the greatest trouble.

Of the Preparation and Use of a certain secret Universal Menstruum, with which one may institute an Anatomy of all Vegetables, Animals, and Metals; correct them, and from thence prepare good Medicaments.

Of this *Menstruum* the Modern Philosopher *Helmont* makes mention in some places of his Writings, and attributes wonderful Effects to it, which he exhibits in the Preparation of Medicaments, and gives it the name *Alkabeft*; which name *Paracelsus* also remembers; but in few words, it is the same as if we should say *Alkali est*; for when the Letters *I* and *r* are joyn'd with a dash, it produces the word *Alkabeft*. But what moved *Helmont* to call it *Alkabeft*, we shall not here dispute: I indeed believe he did it, thereby to demonstrate its Nature and Essence; for in German *Alkabeft* is as *Algar hets*, or *Al zu hets*; but in the *Brabantick* Idiotism, which was the Mother Tongue of the Author, it sounds *Althets*, that is, very hot; and so the name answers to the Essence; for this Liquor is nothing but a meer fiery Water, by whose immense and secret heat Vegetables, Animals, and Minerals, if they are put into it a certain time, are forthwith purged, ripened, and made better, so that they become excellent and wholesome Medicaments, which without this fiery water cou'd not be done. This *Menstruum* then, is nothing but an igneous Liquor, prepared of urinous Salts, which is endowed with those Virtues which are attributed to it in my Treatise of Flints.

An Admonition.

Here it is to be noted, that this *Menstruum* may be prepar'd of more than one subject; for Nature is Copious, and sets before our eyes many various Ingredients, from which, by the help of Art, divers things may be effect'd; as may be evidenc'd in this admirable Liquor, which may be made not only of the common *Sal terra*, or *Salt Peter*, but also of the fix'd Salt of all Vegetables, and especially of Tartar; 'tis no matter of what subject it is prepared, for it has still the same Virtues that are ascribed to it, forasmuch as, if a right Preparation be made, the common *Sal terra* and the fix'd Salt of Vegetables are of one and the same Nature and Essence: For the genuine *Sal terra*, or *Salt-Petre*, may be made of Salt of Tartar; and of *Sal terra*, or Nitre, a fixed Salt, like Salt of Tartar; of Spirit of Wine, Salt of Tartar; and of Salt of Tartar spirit of Wine: of Wine-Vinegar, Nitre; and of Nitre, corrosive Vinegar. So those Salts partake of either nature, and will be manag'd at pleasure; neither are they undeservedly by the ancient Philosphers, called *Hermaphroditick* Salts. Wherefore it is not for any one to be offend'd at its base original, and accordingly undervalue it; 'tis no matter wherein the good consists, 'tis sufficient to say it is good, and may be converted to good uses: Good things ought to be so much the more esteem'd, by how much the more mean and base their original may have been, for Nature and true Art use both base and abject things in their Works, and nevertheless, their desires are accomplish'd: But on the contrary, the vain reason of Man in his labour aims at nothing but Sublimity and specious Notions, and therefore brings nothing to a good end, but destitute of a happy success, finishes his fruitless labours with great damage.

To conclude then, take this advice; Be not offend'd at this wonderful Liquor, because of its mean original, but let the Work praise the Work-man.

Now follows the Preparation.

If any man will prepare this *Menstruum* of Salt-Petre, he must extract and coagulate that Salt from the earth with common water, and adding coals or some other vegetable Sulphur, fix or calcine it so long, till it be resolv'd in the Air into a fiery liquor, then the preparation is finish'd. But because that sort of earth, from which this salt is extract'd, cannot be found every where, in its stead, you may take Nitre well cleans'd, which must be melted in a Crucible, upon which you must cast a small quantity of coals and that so long, till the coals upon the flowing Nitre will take fire no more, but remain dead upon it, for then your Nitre is fix'd and prepar'd, so as from it, this so admirable water may be made, which is made after this manner: While the fix'd Nitre flows yet in the Crucible, pour it into a brais mortar that in that it may cool, then beat it to powder, and spread it on a Glais table plac'd in the Cellar, or some other moist place, that there it may flow; so you have that fiery water which is endowed with so many wonderful virtues in the preparation of medicaments of vegetables, Animals and Minerals, of which I made mention before. But if you

would make such a liquor of Tartar, which will be best for preparation of Medicaments of vegetables and Animals, then you must bring common Tartar, made pure by Calcination, Filtration, Solution and Coagulation, and by flints purg'd from all impurity, into a fair and bright Salt, mixing six or eight parts of the purest Tartar with one part of flints well pulverated, which mixture you must melt in a cover'd Crucible, and pour it into a brais Mortar to cool: This bright and white fiery ma's you must reduce into powder and put it into a Glais body, and pouring rain water thereon, boil it upon hot Ashes, for then the rain water will dissolve the Tartar only, and leave the Flints at the bottom, like a Mucilaginous matter which draws to it self all the impurity of the Tartar, which before, by the common solution and filtration cou'd not be taken away, and so keeps it, that the Salt of Tartar is by this means freed and purg'd from all impurity: then you must filtrate this solution, and draw the water from it by a limbeck, that so that Chryalline fiery liquor may remain in the Glais: And this is that preparation by which vegetables and animals are reduced into the best medicaments; but to prepare metallick Medicaments, and especially for the making them better, liquor of Tartar is not to be added, but only liquor of the Salt of fix'd Nitre, which is not prepared by coals, but by the Regulus of Antimony, and that after this manner;

Put three parts of clean and pulverated Nitre to one part of Regulus Martis, put this mixture into a Glais wash'd clean, and by a prudent increase of fire, make it boil a little in a Fixatory Furnace, and in this degree of fire, leave it five or six hours, then take it out that it may cool, then very finely pulverize it, and pour upon it rain water, and the Nitre, which by the Regulus of Antimony comes out fix'd, wash out; and lastly abstract the water, so you will produce a fiery liquor fit for use in metallick operations.

NB. This fixation may be as well made in cover'd Crucibles, as in Glasses, and is good enough, only the management of the fire must be observed, neither let the heat from the beginning be too intense, least your Nitre evaporate before it be brought to a fixation, but keep a gentle fire, and it will effect the fixation in conjunction with the Antimony.

The Praxis. How by the mediation of this liquor Vegetables, Animals, and Minerals may be coverred into good Medicaments.

Take an herb, root, or seed, beat it very small in a stone Mortar, then put it into a glais, and pour upon it so much of this fiery *Menstruum*, as that the herb may be sufficiently imbrued in it, afterwards set it upon sand some days, or boil it, that of the herb and *Menstruum* may be made a thick liquor, which done put to it as much spirit of Wine, well dephlegmated, as there was of *Alkabeftick* Liquor, and well mix them, in a small heat, left the spirit of Wine evaporate; so long digest it, till the separation shall be made, and your *Alkabeft*, with the faeces, will go to the bottom, but the spirit of Wine, with the Essence and Virtue of the Herb, will stay at the top, which afterward, though never so much stirr'd, will not mix, but each remains still in his own place:

R r

place: pour all that whole matter into a wide-mouth'd Glass, and there let it settle; then separate the Medicine which the spirit of Wine has extracted from the Herb, with a gentle inclination from the Alkahestick Liquor, which retains with it self the faces of the Herb, so you will have the Virtue and Essence well corrected and perfectly ripen'd in the spirit of Wine, which abstract from the Essence of the herb in a Bath, and the Medicine which remains like a red juice, and endowed with great Virtues, keep and use it as it is ordain'd by God and Nature. But the Alkahestick Liquor, mixed with the faces of the Herb, Calcine in an earthen Vessel, that all the relish and scent of the Herb, which remains in it, may be exhal'd from it, and afterwards dissolve it in Water, and filtrate it, and draw it to a fiery Liquor, so it will be as good as it was before, and you may put it to the same uses as often as you please.

Animals are to be bruised after the same manner in a Stone Mortar, and with the Alkahestick Liquor digested, and by spirit of Wine separated, and in Vegetables the labour is the same.

But Metals in their proper Corrosive Menstruums must be dissolv'd precipitated, wash'd, edulcorat'd, excoriated, and then lastly with the Alkahestick liquor poured on, digested, dissolved, and with spirit of wine separated and reduc'd into a potability.

But Minerals which may be pulveriz'd need not be dissolv'd and brought to a calx, but 'tis sufficient, that after pulverisation with the Alkahestick liquor poured on, they be digested, and by spirit of wine separated.

Nevertheless, you may also at your pleasure render metals brittle and frangible, viz. By the help of the Regulus of Antimony, so that they may be pulveriz'd, then pouring your Menstruum upon them, dissolve, digest and convert them into Medicine: Which method is certainly good; You may also proceed another way with metals prepar'd by Antimony, viz. Mix them with three parts of pure Nitre, and in a Glass or earthen vessel, by the dry way dissolve, digest, fix, and by spirit of wine prepare into Medicine, which also will be good, for it is more profitable to operate by the dry than by the moist way, as it is customary to be done in vegetables and Animals.

And this is the shortest method of reducing Animals, Vegetables and Minerals by the Alkahestick liquor to the best Medicaments.

But how imperfect metals or Minerals, which otherwise in a Cupel or Cineritium trial, leave no gold or silver behind them, are to be brought to maturity and fix'd, that afterwards in the Cineritious trial, they may give a perfect gold and silver is done another way, whose process is this:

Mingle and melt so much (Regulus) of Antimony with the imperfect metals or minerals as may render them friable, that they may be pulveriz'd, with these mix three parts of the purest Nitre, and this mixture close stopp'd up, put upon a fire in glass or earthen vessels to fix for some hours, afterwards take it off, and as they are melted pour them out, that they may give the regulus which is to be taken away, and with lead put into a Cupel and reduc'd to dross, then that gold and silver which the imperfect metal or Mineral got in the fixation, stays in the Cupel which may be examined by the lesser weights of probation, whence it will appear how great a fixation so little time will produce.

This is the plenary and fundamental instruction of the use of *Tartar* purg'd by flints, to extract the essence of vegetables and animals and of Nitre fix'd by coals and Regulus of Antimony, which begets a penetrating, correcting, bettering or ripening and purifying fiery, but not corrosive, virtue, which goes beyond all things, penetrates and corrects as above written, I have attributed to it. But least the ignorant of natural things should esteem and proclaim this a corrosive liquor, we will prevent them, and shall endeavour to demonstrate, that this liquor is no way a corrosive, but an enemy to and destroyer of all corrosives.

Like loves its like, with it is mingl'd, and immutably stays with it, as may be seen in spirit of Salt, Vitriol, Alum, Nitre, Vinegar and other corrosive spirits when they are mixed. But unlike things if they are join'd, are contrary to themselves, and fight against each other, and forcibly withstand one another so long, till the strong o'er comes the weak and kills and destroys it or produceth another substance from it: that may be seen if this fiery liquor of *Tartar* or Nitre be mix'd with a corrosive Spirit, for it can not consist with it, because contrary to it, then which of these is the stronger, destroys the weaker and takes its nature to it self.

And this difference arises from the unlikeness of the nature of either liquor, for one corrosive does not destroy another, as also one fix'd urinous liquor does not destroy another urinous liquor; because one contrary fights against another contrary, but not against his like, so 'tis true, as hence may be fully demonstrated, that this fix'd liquor of *Tartar* or Nitre is not corrosive, but only a fiery water and a perpetual enemy to all corrosives, and both kills and takes away their corrosive faculty from them. But some will say that the corrosive spirits of Salt, Alum, Nitre, Vitriol and such like are fiery waters: I confess it, but yet with this distinction, those spirits are indeed hot waters, but not vivifying, but rather cold and killing fiery waters, which no way ripen, purge or correct Vegetables, Animals and Metals, but destroy and kill all things they are mix'd with. But the fix'd liquor of Nitre or *Tartar* is contrary, and ripens, purifies and brings to perfection all it is mix'd with, which is impossible to all corrosives, whence it is as clear as the Sun, that it is no destroying corrosive, but a correcting fire.

Now follows another Clause of *Farrmer's* Epistle.

2. All Mineral's and Metals.

I much wonder that *Farrmer* was not afraid to offer this process to others at a price, which is plainly and clearly described in many places of my Books: and is done only by Nitre, by which sulphurous metals (but not all metals and minerals, as he vainly boasteth) are reduc'd to dross, from which by spirit of wine, a metallick tincture may be extracted, as we have shewn above in the tract of the Alkahest: that dross is truly fiery, and therefore easily attracts air, and is turn'd into oil, of which I have largely treated in the second and fourth parts of (*Furn.*) and in the *mineral work* especially in the explication of the wonder of the world, as also in my *Hermetic Colloquies*.

3. Glauber's

3. Glauber's Alkabeft.

IN this Paragraph *Farmer* openly betrays his vanity, bragging, and hellish calumny, in reprehending the industry and labour of good men, and boasting of a more firm foundation than perhaps I know of; whence it will appear to any man of Understanding, what this most ungrateful of men would be at, namely, which is the only thing he can do, he would do what he could to bring those Secrets I intrusted him with into contempt with all men, and introduce his own foolish trifles.

First, he saies, *Glauber's Alkabeft*, and presently subjoins another and better foundation or way of preparing it: which if he points at any thing but my Alkabeft, why then does not he forbear mentioning and contemning my Alkabeft? for he does contemn it, and endeavours to prove, that that way or fundamental is unknown to me. Now he exposes it to sale at fifty R. Dollers.

4. The Trial of all sorts of Coins.

TIS true, *Farmer* did not mention this as a vendible, for it is not worth purchasing with Money of him: for the common way of trying money has been shewn not only by many provers of Metals, as *Lazarus Ercher*, *George Agricola*, and many others, but I myself also in many places of my Writings, and especially in my explication of the Wonder of the World, have fully and exactly taught it, which *Farmer* can never be able to mend nor imitate.

5. Flowers of Coral.

YOU must know what belongs to this Process that *Farmer* did not learn this Preparation of me, but of another man, which pleases him extremely, though 'tis of no moment. But he most unworthily calls them Coral Flowers, which he exposes to sale at ten R. Dollers, seeing they are not Flowers, but rather to be called a Cremor; for when in a very hot fire they are reduced into a white Calx, from this Calx, by the help of Water, is drawn a Cream after this manner: The calcin'd Corals are put into common Water, and left in the Water a whole night, then in the top will appear a little skin, as is usual in *Calx viva*, which must be taken off to dry. Lastly, while that is doing, another little skin appears, which is also to be taken off, and that so often, till the Water will give no more.

I know also, that this Powder is held up by some Apothecaries as a certain singular Secret, (but that indeed exceedeth it) which is prepar'd of *Calx viva*, which I have also shewn to some that have attributed great things to this Powder, who, the Experiment being made, seeing me produce true things. What need is there, said they, to burn precious Corals, when common Chalk (or *Calx viva*) will give the same thing as Corals, and they prepar'd no more Powder of Corals, but of *Calx viva*.

Therefore this does not deserve to be called a Secret.

NB. That Corals, Pearls, Pearl-shells, and Tortoise-shells, as well those that are in the Sea, as those that are in Running Rivers, if they are burnt together, are brought into a true and natural Lime, like that which is made of burnt Stones, needs no probation. He that will not believe me, let him go to *Hol-*

land, and other Sea-Ports, and he shall see that the men of those Countries do not use Lime made of Stones, which are wanting in those places to build Walls, but that which is made of burnt Shells, which the Sea in great abundance casts upon the shore; which yet, is not so good as that which is made of Stones, which some Lovers of Curiosity have also brought them from *Germany*.

6. To make melted Tin hard.

AND this Paragraph, by right, ought to have been omitted, for it is not worth Ten R. Dollers, requiring no Art in the making it; and I myself taught it many years since, as well in the First part of the Mineral Work, as in the Fourth part of my Furnaces; and it is made by *Regulus* of Antimony, of which one part is mix'd with 12 parts of melted Tin, and no more, for otherwise the Tin would be made brittle, and rendered unuseful; rather if one part of *Regulus* is mingled with twenty parts of melted Tin, it will come out hard enough. And farther, it may as well and rightly be made of *Zinck*, as by *Regulus* of Antimony, and needing no great matter of Labour, melts sooner than *Regulus* of Antimony.

7. White Vitrifications.

THese Vitrifications also, which he exposes to sale at Ten R. Dollers, are of no moment, for they are prepar'd of Glafs of Lead, Tin-Ashes, and Flints, and Wood-ashes.

In *Holland* this Preparation is very common: whether *Farmer* is excellent at it or no, I much doubt; How then shall he teach others? And if he does excel, who will be the better for it? For no man studies these Curiosities, or so much as looks after them, or covets them.

But although *Glauber*, &c.

Here *Farmer* again vomits at me a mighty heap of his infernal Lyes, which are as noisome as any dead Carcass, as if he intended to infect me with their venom; but these stories do not at all agree with his other; for here he saies, Although he had with a great Sum of Money purchased certain Secrets of *Glauber*, yet he had made no Examen of them, but he was forc'd to convert them to other uses. In the beginning of his Calumnious Paper, he thus writes: A Specification of those Chymical Secrets which the under-written *Farmer* learn'd of *Glauber*, and in the Trial found True.

Here any impartial man may see what to judge of this double-Tongu'd Monster. Here he denies what before he confess'd; he both calls them *Glauber's* Secrets, and here affirms, that they never succeeded to his purpose: which if true, Why does he prefix my Name to them, if he never made trial of them? But if they have succeeded, and in the trial he has found 'em true, as he above confesses, Why does he here deny it? Can the same thing be True in one place, and False in another? Certainly I can refute such horrid Lyes no way better than by his own words. For if I should say, See here, there, or in that place thou lyest, he would not care, but answer, He did not lye at all, but spake the truth; and I might represent a Contest between two scolding Women, one whereof calling the other Whore, and the other throwing back upon her the same things; but this will do nothing; wherefore I shall take another method.

In the first Obligation he gave me, he expressly saies, That I had communicated, demonstrated, and shewn him some Secrets: But if they were not for his use, why did he give me a valid Obligation, to keep those secrets from the publick? Not bent to these things, Why did he in all his Letters (which he sent me, and which are kept safe to confirm what I say) confels, and profess, that he, his Wife and Children, were bound to me, and that he would come to me, that with his he might serve me all my Life.

If none of my secrets have succeeded to him, Why did he give me long since a new Obligation to be grateful to me? as I have demonstrated from his obligations and extracts out of his Epistles.

NB. What! Could he not make trial of those things he had of me, in eighteen Months time? But if the trial has prov'd the truth of those things, and he has bound himself to me by a new Obligation; Why then does he dare to say, That none of those things which I communicated to him, prov'd successful? Why two years after? Now he is alienated from me, and having broken his Promises of coming to me, and working with me in my Laboratory, (being married again) is an Excuse for his absenting himself; yet he asks me to communicate to him more secrets, and then he'll come. NB. But if the first secrets have not stood the Test, why does he desire more of me?

For he might know over and over in two years time, whether my Writings would conduce to him or not.

In one Epistle, in which he boasts of killing a man, he writes thus: Wherefore I again and again intreat you not to cast me off, but do to me according to your wonted Favour. I will on all occasions, as I have promised, in my place, satisfie you; neither will I cause that any thing should therein be desir'd; for which reason also I will effect it both better and sooner.

From these and the like words, which in two Epistles he us'd to me, I could collect nothing of Fraud, and perhaps at that time he meant none. But when he had kill'd that Man, and married another Wife, all his Promises and Obligations were to no purpose. And from that very time, all his endeavours have tended only to do me what hurt he could, and he daily hates me more and more; which at last appears more publick in these his lying Calumnies.

Indeed, I am apt to think the Devil and that Murder had possessed his Heart. NB. For his Epistle to me witnesseth that for fourteen daies together he had sought occasion how he might catch that man with his Wife, and bloodily revenge himself upon him; I suppose, by the infatigation of Satan, whereby both the Man was kill'd in his Sins, and the Woman with many wounds compell'd to a lewd kind of Life; of both which Crimes Farmer is yet guilty in his own Conscience, and (unless a speedy Repentance follow on his part) he will never be freed from them. But if in a sudden passion he had done it by chance, he might merit some excuse.

But to endeavour it fourteen daies together, is nothing but a Devilish Revenge and Cruelty, which can by no means be excus'd in a Christian, though he do it never so secretly.

But besides, he uses evil Arts; for he drew my Servant to him by Flattery, and receiv'd him into his intimate friendship, notwithstanding he knew I turn'd him away for his infidelity. What he writes,

that he bought his Secrets of me at a great price, is a pure fallacy. Indeed he forc'd a small Reward upon me, half of which I gave him back again, and what I kept he got over and over by communicating my Secrets to other men, so that he has fully receiv'd what he gave me; and by this his communicating to others, (which was done unknown to me) he broke his Promise; which nevertheless for Peace sake I pall'd by. Wherefore, if he will confels the Truth, I am sure he can never say that he bought all those Secrets I intrusted him with, at so great a price.

Hitherto we may believe how much Money has come to him; for since he has sent abroad his infitatory Letters five months ago, (nay, as I am told, two years ago) before I could know it: he could not chuse but get money by it, when forthwith he with my perfidious Servant proceeded to that infelence, as in a knit Society with some of Frankford, he caus'd his Calumnies to be every where spread, and sent abroad, not only throughout upper Germany and Belgia, but also into France, and other Foreign Countries, to get Money. Yet, according to my hopes, this infitatory Ware-houfe (by the Grace of GOD) will soon fall.

8. Plenty of Spirit of Salt.

IN this Paragraph also he goes on after his manner to disgrace me, accusing me of Lyes, as if it was false, and impossible to prepare fifty pound of Spirit of Salt in one Furnace, and in one day; and adds, that this Spirit is not so good as his, for Every man for himself: but this is done by adding Vitriol.

Which Vitriol does not hurt the Spirit of Salt, as is demonstrated in many places of the First Part of my Furnaces; and he denies that fifty pound or above may be prepar'd in one day in my Furnaces, when yet it may be done commodiously enough, and needs no farther proof.

From all which a wife man may easily judge how good a Christian Farmer is, whose mouth uttereth nothing but wickedness, contempt, and contention, and except my inward faculties fail me, the envy of his heart, his hatred, lyes, and infernal calumnies, shall be display'd.

What is his Spirit of Salt to me, or mine to him? Let him prepare it after his way, and I will do it my way, when need requires: Wherefore does he endeavour to defile my things with his, since they cannot be deservedly reprehended by any man, much less by him.

9. Spirits of Vitriol, Nitre, Salt, Aqua fortis, Aqua Regia, in plenty; also Sulphur; at Forty R. Dollers.

IN this place may be seen the inhumane and devilish nature of this wicked fellow; for he scarce utters three words but he proceeds to my disparagement.

But what hath Glauber to do with his spirits, for he does not use them? and if he does need them, he can make them without him.

What does he care, if you can prepare them after a better way than he, which yet never can be?

Whatever Glauber has writ of these things is worth the reading; and he can defend both himself and it, neither

neither can you or yours spot his fame, which is so well known to the World.

10. Mineral Spirits: for twenty R. Dollers.

HERE Farmer ventures to promise a way of preparing volatile spirits, which is eight years since fully describ'd by Glauber, in the second part of his Furnaces, whither I refer the Reader.

11. Flowers of Minerals and Metals; for Twenty R. Dollers.

BUT if any man will explore another man's nature, let him permit him to speak, and he shall easily know what temper he's of; but especially that, of all things, may easily be discern'd in a drunken or angry man, who can very hardly conceal his internal blemishes. In like manner we may see by Farmer that he endeavours to hide his lying Proceedings in my name. What if I had seen his way of preparing metallick flowers, what profit or loss should I sustain by it? He glories of those things which merit no praise. He promises to make metallick Flowers under a fritratory Cover, when yet Flowers can't be made under it, for they are not Flowers when the metals are burnt under a fritratory Cover, into a Calx, or reduc'd to ashes, there is, and so remains a heavy Calx: but the Flowers of metals shou'd be brought to a very light fort of Flowers by Sublimation; as is describ'd at large in the First Part of my Furnaces.

Farmer indeed, with his Stop, leaving his filthy knife, should rather have gone to the Chymical School a little, than (being ignorant of Chymical terms) sold his heavy Calxes of Metals to other men for light Flowers, and despis'd Glauber's way of preparing Flowers, which yet has been reprehended by no man. These his Flowers, with his Coral Flowers, are coarse Meal, which don't deserve the name of Flowers, but Cream. Indeed, if Farmer had not so vehemently inveigh'd against me, I had not display'd him thus, nor deign'd his vain Proceedings one word of answer.

Yet 'tis no matter, though good men are sometimes in this life bark'd at, and provok'd by mad Dogs, since it often happens that by this means excellent things are made publick, which otherwise would lie secret.

12. The Quintessence.

HERE you may see, candid Reader, that wicked Farmer's endeavours tend to disturb the quiet of all good men, and destroy my well-grounded and yet irrefutable Writings by his foolish Opinions, which he shall never be able to do, no more than a little Whelp is able to attack an armed man, whom by his barking he cannot hurt.

My Tract which I writ of the Essence of Vegetables, and printed at Norimberg, under the Title of *The First Part of the Spagyrick Pharmacopœia*; neither Farmer, nor any man else, could reject or contemn; but that little Tract will defend it self.

I have made publick many and excellent inventions, but no man can shew one place wherein I reprehended and brought into contempt other mens Works, as this Farmer does. If he would act as a good man ought, and had any thing against me, he should speak it to my face, and not abuse me so wickedly behind my back.

13. All acid Wines.

IT troubles me Indeed, that I communicated this excellent secret of encreasing the Virtue of acid Wines, and making them better, to Farmer. What he writes, that he found out those things, is a pure Lye, which he had of me; when nevertheless he is not afraid to tell so impudent a Lye, as that he had found out a better foundation of that Secret, which is most notoriously false; for neither he nor any other man, nor I my self, can find any thing better than the pure Essence of Wine, conducing to that Work; which Essence of Wine, by the strength of its innate fiery Nature and Property, all sorts of immature Wines may be ripen'd in fermentation, and turn'd to a brisk Staple, and good Wine, in which lies all the Art.

For he that knows this, may also correct acid Wines, yet let him have a care that he does not take foul Brandy-wine, as Farmer has done, wherewith he has done it, as he saies.

This excellent Art, and heretofore unknown, to him that knows how to handle Wines, may serve instead of many; and this unfaithful Farmer might have receiv'd much profit from it, if he had not made it publick; but since he has every where publish'd it, there shall henceforth no profit accrue to him nor me, if I should be destitute of better things, for he has defamed this excellent Secret every where by his lying Epistles sent abroad.

As for me, though he has taken from me the great profit which redounded to me from it, by his prating and lyes, I do not this from such a trouble of mind as will happen to him, if he shall be forced indeed to want all its fruit.

If this perfidious Farmer had hid this Secret, he would have needed no other Arts, neither need he have sold it for an hundred Duckets, but he might from it have procur'd to himself sufficient whereon to live. A greater damage has happen'd to me by his publication than I can declare; and I very hardly endure that so excellent and profitable a Secret should be despis'd; neither will any good man approve it, especially they that sustain lofs by it, and for that cause will always abhor him. He might have gotten enough by it, in secret, and without detriment to his Neighbour, but that he was minded rather to mar the profit and propagate the damage of not only himself, but me, and many others that have knowledge of it; which no man can deny to be a wicked act.

That Reward which Farmer gave me for communicating to him my Secrets, in all amounted to but sixty or seventy Ungarics (an Ungaric is Nine Shillings of our Money,) which yet, from the communication of those Secrets I trust'd him with, he receiv'd again, so that all those things which he had of me, cost him little or nothing. Nevertheless, he does not stick to say, That he gave me a great sum of Money for my Secrets, which yet I refused to take; and though he twice made a Journey of Fifteen miles to me, that he might get something out of me, yet I deny'd him, and communicated nothing to him, till he came the third time, and learn'd some of my Secrets, and afterwards, when he had oblig'd himself to work with me in my Laboratory, I communicated more to him. Neither had I shew'd him the least of those many Secrets for his Present, which will never compensate

the damage I have sustain'd by him, had not he oblig'd himself under the loss of all his Goods, as also his Credit and Reputation, that he, his Wife and Children, should serve me so long as I should live, as plainly appears from his Obligations given to me.

But if he had given me a Thousand *Ungarici*, or Duckets, and I had known he would have expos'd this Secret to sale, I would rather have given him all of it back again, than suffer'd it to be made common. Neither can his vain Excuse, That he exposes his own inventions, and not mine, to sale, profit him any thing; when 'tis evident enough, that nothing in the nature of things can be found, which may render small Wines better than the *Anima* or Quintessence extracted from other Wines; for the *Anima* of Wine only, and nothing else, can encrease the strength of Wine. Neither is the comparison of this melioration of Wines incongruous with two torn Garments, neither of which can be worn; but if either of this is cut, and that which yet is whole and good, is sewed to the other, and so of two torn, one whole Garment is made; then that Garment may be worn, when yet, before, neither of them was useful.

The same also is to be understood of small wines that are neither durable nor vendible, but after one Hoghead is strengthen'd by another, it becomes not only durable, as good Wine, but vendible, and will yield as good a price as two small Hogheads. And this Secret is both very noble and profitable in those places, where the wines are seldom brought to maturity, and for that cause are not durable nor saleable. For there is a lamentable Complaint among Vintners, that immature wines are not vendible, and they can get no money for them. Thus they say, Have we labour'd in vain with our wines a whole year? Look there the wines lie, and no man buys them: in the mean while we suffer want and can't make our selves merry with our wines, for they neither profit us nor others; unless we have presently some other better wine, wherewith to mingle this, and so render it vendible, it will strat be corrupted, and turn'd to water. These and the like Complaints I have often heard from Vintners; but if they had the wit of Taylors, that can make one new Garment of two old ones, their affairs would be in a better condition, for after this manner they might preserve their acid wines, and there would be no need of mixing better wine with them. For which excellent Invention, all men that deal in wines, ought to thank GOD and me.

I pray, who would not have communicated these things to a man that had given himself for a pledge? But if he must not stand to these Obligations, I can't see whom we may trust. I curse the unhappy hour wherein this unprofitable subject and that perverse man (if he may be call'd a man) came first in my sight: which troubles and molestations he brings upon me in my old Age, which might spend its time much better, than by refuting his detestable Calumnies. Neither does his wickedness to me hurt me only, but my Children also.

In his last Obligation he promises, That if by premature death I should be taken out of the world, that he, for the kindnesses I had done him, would adopt my Children for his own, and make them his Heirs: but here, in his most false writing, endeavours all he can to deprive my (yet young) Children of their

own, and convert their Goods to himself, as indeed he has done.

Further, He in his last Obligation also saies, he humbly pray'd GOD to prolong my Life and Health, but in this place he endeavours by his Caviis and Calumnies to kill me, and if he could do it with his own hand, (which God forbid) I believe he would not stick at it: It is a small thing with him to spill Man's blood, for he has experienc'd his ability that way.

I indeed esteem it the Goodness of God to me, that it is His will, perhaps, that this should rather turn to my profit than disadvantage; for hereby I am taught to be wiser another time, and to shun humane Frauds.

14. All Wines.

Here any wife man may judge whether or no this thing deserves to be sent into Foreign Countries, and there to be sold at a price; when there is no Country-man that does not know that Wine assumes the relish of the Herbs, Flowers, &c. which are steeped in it.

15. Brandy-Wine of all sorts of Corn.

That *Farmer* brags of this knowledge, he owes it to GOD and me, from whom he had it: For when at first he complain'd to me, that he could not keep the Corn from burning in the Still, and so make the Brandy-wine stink, I upon his intreaty communicated this Secret to him. But because *Farmer* so much glories of this knowledge, he shall not enjoy it long. I must confess, indeed, that this Secret is not of less value than that whereby wines are meliorated; neither does he get less by it: but so far as I resolve to buy all his Wares every where of him, I will neither leave him this, that he should be free from the trouble of informing others in this thing, and that otherwise would be forced to make long Journeys to buy them of him, may leave off those Journeys, and take this way of preparing it: Take as much Corn as you will, whether Barley, Rye, Oats, or Wheat, steep it in sweet water for some days, then place it that it may sprout after the same manner as Corn is Malted for the making of Beer; turn it well for a certain time, lest it be corrupted by too much heat: then when it is well sprouted, spread it abroad, that it may presently cool, and it will never soure.

But if you would use it presently, then take as much of it as your Distillation will require, and in a Kettle full of water, boil it so long, till the grains are broken, then pour it into a wooden Vessel, and when it is luke-warm, add to it the fresh dreggs or grounds of Beer, and let it ferment; when it has fermented enough, which is usually at the end of two or three daies, then Brandy-wine is made in a common Still, by distillation from that Corn; what remains in the Still will serve to feed Oxen, Cows, Hogs, or other Cattel.

But the Brandy-wine which proceeds from thence, must be rectified, as the way is, and by this means it is render'd more sweet and grateful to the relish, than any other Brandy made of Corn: the reason is this, That all Bread-Corn, of which Brandy-wine ought to be prepared, if it be put to ferment presently after softening, it is necessarily in the still, by boiling,

redu-

reduced into a pap, and so being corrupted by a distillation, produces a stinking Brandy-wine.

But this protuberating and burst Corn cannot be burnt, and therefore makes good Brandy.

Also the Corn may be broken on a Mill-stone, water poured upon it, and distilled out of a Still, placed within another, or in a Kettle full of water, so also it cannot be burnt; yet this way it will yield but little.

NB. But if any man will give this Brandy a relish, like that made of the Lees of Wine, then he must rectifie it upon the Lees of Wine, for this way by the Oil of Wine, which is plentiful among the Lees, he acquires his ends, and in all things he may use this instead of that.

NB. Also, he that will, may, without this previous coction and fermentation, pour the budding Corn hot into a vellel of luke-warm water, for by this means the Corn begins to ferment of it self, and needs no other Lees to its fermentation; yet it does not produce so sweet a Brandy, as if it had first been boiled: for by coction the ill taste is taken from the Corn, which the Brandy otherwise retains. Further, also it produces much more Brandy, if the Corn is so boil'd, that it may be broken. And this, good Reader, is a most excellent and profitable Secret, and will bring you in much wealth, if you use it rightly, and you may make great quantities of it.

Farmer did no man wrong, by taking (according to his own estimation) a Hundred Duckets for it, for it is worth much more, especially if the residue of the Corn pays the charge. Yet no man hereafter will give him so much for it now 'tis made publick.

Indeed it is injurious to me to divulge it, but because it is now in the foul hands of *Farmer*, 'tis better that others also enjoy it, than that he only should reap the benefit of it. But though by my communication *Farmer* should put on a Lyons skin for his defence, yet he can't hide his Asses ears under it; as appears from this Paragraph, where he writes, that he had sent four measures cross the Seas, to try if they would bear the Sea-water; for then he thinketh he hath made his Port. Good God! how repellant is the Wisdom and Philosophy of this *Farmer*! Certainly, if he shall make one or two Experiments of this kind, that his Brandy-wine will bear the water, he'll duly merit to be created the chief Professor in the Academy of Idiots, for that will best him, seeing that the reason is not hid to him, as he writes; wherefore Drinks are alter'd by the Sea-waters.

But he will make his first Experiment in these four measures, and if it proves well, then he promises to teach this Art at a price.

O the blindness of this perverse World swelling with Pride! Who ever heard that a good burning spirit, whether made of Wine or Corn, will be corrupted by the sea-water? I grant it may be corrupted, if it be invalid before: But a good and firm burning spirit will never be corrupted by sea, for all wines bear the water, those only excepted which labour with a defect of spirit, but strong wines very seldom, for the more spirits there is in any Liquor, whether Wine, Beer, or Metheglin, it is in the less danger of being corrupted.

But if the spirit which is in wine, be its preserver, and defender from Corruption, How comes it to pass that Brandy-wine, which if well prepar'd, is nothing but spirit, should be corrupted? If the Spirit in wine be the Preserver and Defence of the wine, which yet is weaken'd by a great quantity of water, so as the

wine remains good, and is safe from the corruption of water: Why then should not it defend it self, since it is so strong and free from water? Who doubts that a concentrated Life is able to perform greater things than a diffuse and weak life?

Hence you may see how great knowledge *Farmer* has drawn from the light of Nature, that he should boast fo.

16. To strengthen all sorts of Beers.

In this place *Farmer* again shews his Asses ears, when he writes, That he can strengthen Beers, that they shall not be inferior to Rhenish wine. Here every wife man may discern how great and stupendous this man's folly is.

Behold, he attributeth the goodness of Rhenish Wine to its strength, which indeed is a great error; for the goodness of Rhenish-wines consists not in their strength, but sweetness. French Wines are far more fragrant than Rhenish, yet in sweetness and soundness it comes not near it. So likewise *Hungarian, Greek, Italian, and Spanish* Wines, &c. are much stronger, but for sweetness, as well as goodness and wholesomeness, Rhenish wine, far better, although the other excell it in strength. And so this is a great absurdity: Indeed Beer may be strengthen'd, by adding a burning spirit to it in fermentation, whereby it may endure the longer; which thing I can't deny, and it ought to be done: but that a Vinegar may be drawn from them like Wine-Vinegar, is a pure story; for though it may happen that Beer may give a strong Vinegar, yet it never yields Wine-Vinegar, for a great difference may be discern'd between Wine and Beer-Vinegar, though they have both the same strength, if you make trial of both: Whence it appears, that *Farmer* is ignorant what Vinegar is, because he knows not the difference of it.

Strong and right Wine-Vinegar is known by these Trials. First, if it be shaken in a Glas, it by and by receives its clearness, and leaves no scum, dreggs, or bubbles, on the top, as Beer-Vinegar does: for let it be never so strong, it retains its own nature, and causes a scum, if it be hook-just as the Beer it is made of: but Wine-Vinegar leaves no scum. Secondly, the longer Wine-Vinegar is boiled, the stronger it is; the reason is this, There is naturally in it an innate sharpness, which is not volatile; but the sharpness of Beer-Vinegar consists in its volatility, which in boiling is abated, so that the longer it boils, the weaker it is. And these are the two chief and most certain trials of Vinegars, which *Farmer*'s Vinegar will never bear, and therefore will still be Beer-Vinegar, and does not deserve that it's Preparation should yield Fifty R. Dollers.

Acid or Souer Beers.

What belongs to this, requires nothing of Art, neither is it worthy to be taught at a price when every Country man can do it, by projecting and well stirring in a vessel of acid beer, two or three handfuls of beech ashes well sifted, made wet with a little beer, and letting them lie in it about eight days, for then the ashes by reason of the Salt which is in 'em takes away the sourness of the beer, and make it drinkable.

NB. If the beer be not too soure, a handful of sifted ashes may be sewed up in a linen bagg, and put into the Beer through the bung, and there left for

St 2

for this way the Beer may be preserv'd from sowing and need not be stirr'd nor troubled. Also some handfuls of wheat put into the beer, draws its fowerness from it, the same also is done by egg shells, Crabs eyes, Tortoise shells, Sea shells, calx viva, and such like things which attract the sharpness, and turn it into sweetness.

But whence is it that *Farmer* now so abounds in the knowledge of wines and beers, when yet but two years since, when he prepar'd and sold brandy wine and beer, that he complain'd to me, that he had sustained much damage in handling them, so that he shou'd perish unless he learn'd how to take away and remedy the burning of Corn in the Still, the ill smell of his brandy wine and the fowerness of Beer. Why cou'd not hethen help himself, and beware of those Lollies? he will object that at that time a certain light shone upon him, by whose benefit he knew Nature. However true his objection be, it will never induce me to believe that this light cou'd in so great a measure suddenly help him, which is a great absurdity: for so much knowledge is given to no man in a nights sleep, it is a false story. But that my faithful instruction, with which I instructed him, has enlighten'd him, and like a guiding star led him in the right way, is most true, tho he is unworthy of those precious Pearls which like a wild boar he treads in the dirt under his feet.

18. Vinegar of Corn.

What belongs to this Paragraph, is demonstrated in the sixteenth paragraph, that tis impossible to make a vinegar of Corn, like that of wine: wherefore this cannot (as he thinks, deserve fifty R. Dollers.

19. Vinegar of green Woods.

I indeed wonder that *Farmer* is not ashamed of these things which I have many years since so clearly describ'd or to bring them to light anew, that he might get money by teaching those things to others, which are already published in the first part of *Furnaces*, And so he adorns himself with other mens Feathers.

But he will object, I have in the trial found these things true, and therefore describe them, but he does it to this end, and to no other than that he may cheat them of their money who did not know that I had so long since writ of them. He that desires any of these things, may find 'em in the first part of my *Furnaces*, and he shall not need to give *Farmer*, ten R. Dollers for his instruction herein.

20. Altho Glauber, &c.

Here he contemns my way of extracting *Tartar* from the lees of wine, when yet it was a year since clearly and perspicuously describ'd and published at *Norimberg*, which *Farmer* cou'd never correct. But he brag'd that he had found by a certain position another compendium, which indeed might be, since it is easier to add something to an Art once found, than to find the Art it self, but it does not become him to dissuade men from this Art which is already described, and which may be had gratis, and to despise it and bragge among all men of his own inventing a better. What good men will think of

these bold malignities may be easily judg'd: but if I had writ nothing of these things, who would have taught him that there was *Tartar* in the lees of wine? But I not only found and writ what was in them, but also largely taught how they might be usefully extracted.

Yet this trifler dares as impudently, as falsely say, that he had corrected it, and added to it, and therefore wou'd not let it go without his price.

After the same manner he deals with my other secrets (which, tho he had them of me, he braggs that they are his own) with which he proceeds, as with the lees of wine, namely with my Alkalest. Panacea, Melioration of wine, compendious distillation of Corn, preparation of vinegar, correction of beer and others in many places.

Whence cou'd he have known what was meant by my Alkalest and Panacea, or how small wines and beers should be meliorated, how Corn without aduilion shou'd give plenty of burning spirit, and whether there was *Tartar* in the lees of wine or not, and how it might be extracted thence, except he had seen and learn'd all these things of me? of which also I had many years since publicly made mention in my writings, which is so well known that he cannot deny it, how much soever he opposes the truth.

21. All Copper Ores.

In this place *Farmer* teaches that Copper Ores are to be separ ated, when, yet they are not separated but melted, that thence the Copper may come forth, which Copper if it contains silver being mix'd with a due weight of lead, it is separated: but Mines of copper are never separated, which he does not understand, and so he betrays his ignorance in these terms. This way of separating is sufficiently known, and every where where copper mines are found, is wrought in abundance and cannot be hid. He that possesseth Copper mines, will easily find men that will thence elicit the copper, and afterwards separate it, neither will any man need to go to *Farmer* on that account. Indeed I wonder at his extreme impudence, that he was not afraid to promise that he wou'd teach others so many Sciences, of which if he knew the half part, his village wou'd not hold all the furnaces he wou'd need for the demonstration of them.

Further, for these and the following Sciences, which yet are the most difficult and laborious of all, he requires no money, but for a certain reward promises to demonstrate them all.

22. From Test and Capels.

He has drawn this separation also from my writings, that therewith he might fill his calumnious letters: neither do I believe he cou'd do it before he had seen me do it. It is done by the powder of coals, as I have plainly described in my Chymical Colloquie.

23. Gold and Silver.

This Art *Lazarus* *Crijer* has described, but because his way is too hard, I have shewn an easier in the explication of the wonder of the world, and there the following melting Furnaces are also described, and therefore I need not say any thing of them here. All

All these inventions which *Farmer* braggs off as his own, are mine; for my unfaithful Servant taught *Farmer* those Furnaces which he learn'd of me.

And at length,

I have nothing to say to these four last paragraphs, because they don't concern me as the former does, and *Farmer* himself exposes them as speculations and not as experiments, as I also believe that they are only fancies and foolish imaginations: yet there is one thing which I must answer, which he mentions in his third paragraph, that the time will come when *Glauber's* Alkalest must be forc'd to hide, altho it is not wholly to be rejected. But if it be so unprofitable that it must hide, why does he expose this to sale at fifty R. Dollers, and the Panacea which is prepar'd with it, at thirty? and he has already got sufficient by it: if it be so improfitable, why then does he offer to Sell it to others knowingly and willingly at a price? If *Farmer* has rightly term'd my Alkalest unuseful and must be forc'd to hide, he has surely deceiv'd many. But I confidently assert, that my Alkalest will never hide, but defend it self in all places: Perfidious calumniators, thieves and their accomplices shall hide, but not my Alkalest. If he has found out better things than I, let him publish them as I have done, that every man may judge whether they be true or false: Why this boasting and wicked vanity in despising others? For truth needs few words and less bragging. In his writing in which he sets down the value of every Secret contain'd in the last paragraphs, namely, from the twenty first to the twenty eighth, he promises to teach other men for no certain price, but on courtesy, those secrets which yet are the best, if he cou'd know them. But if he can effect those things and teach 'em to others, he wou'd not certainly teach them gratis, for 'tis impossible for him to build

those Furnaces requisite to the making of those things in half a years time.

From which it sufficiently appears how ignorant he is of what he writes: Certainly if his wares which he had of me gratis, should find Chapmen, no doubt but in one year he would get some thousands of ducats.

I thought fit to answer you these things now, that I might shut your foul mouth which was so wide open to lyes, but if after this you don't cease your lyes and calumnies, you will compel me to use other means to bridle your malice. In the mean while I doubt not, but all good men in this short Apology (in which I have not refuted thy lying calumnies with indecent or contentious words, but from thy own obligations and hand writing) will plainly see how wickedly and perfidiously thou hast behaved thy self towards me. This damage which thou hast done me, neither you nor all yours both present and future faculties, nor all thy servants can ever repair: It remains therefore, that I say with Job, God gave, and God has taken away, blest be the name of the Lord. But I don't believe you will escape divine punishment, to which I commit my cause at this time. It is certain that every thing has its time, which I also patiently expecting your downfall (when God shall take upon him the patronage of a just cause,) perhaps with these my eyes shall sooner see than hope. Indeed I wanted not matter to dispute these things more largely, but that for a reason known to my self, I was hinder'd in doing it at this time. But as soon as I can, God assisting me, I shall not be wanting to propose to all impartial men in the world, questions to be resolv'd, from which every ingenious and good man may see, animadvert and give judgment, how ungrateful, perfidious, unjust and inhumane thou hast been to me.



Miraculum Mundi;

Or, A Plain and Perfect Description of the admirable Nature and Property of that most powerful Subject, called by the Antients;

The Universal Menstruum,

OR,

The MERCURY of PHILOSOPHERS.

By which Vegetables, Animals, and Minerals may easily be Transmuted into most Salubrious Medicines, and the Imperfect Metals into Perfect and Permanent.

A Preface to the Reader.

TO whomsoever this little Book (treating of the Propriety, Nature, and Essence of that incomparable Subject, by the ancient Philosophers called, The Universal Menstruum or Solvent, shall occur, and is offended in reading of those great virtues by me ascribed to it; and because he understandeth not the thing, judgeth it not to be credited; I would have him know, that whatsoever power I have attributed to it, that that is in no wise a Fictum, Dream, or vain Opinion, but is taken for a Truth, found out by a diligent and manifold Practice. But which will be most profitable, for me to prostitute all my inventions to the World, or conceal them?

T t

them? For which cause I will (at least for the present) only point at many wonderful things which may be performed by this universal Menstruum, but not treat of them, leaving it free for every man to believe my sayings as far as he pleaseth; but if they shall be credited by no man, it shall not disturb me, it being sufficient for me to have shewed where and by what reason, the truth or secrets of nature are to be found.

As for the Subject whose nature and operations I have determined to touch upon, it is like to that of which I have made mention in my Mineral work, by the signal name of Alkahlst, which appellation I have there demonstrated, not to be imposed upon it without reason. But seeing that long since the chief Menstruums of some Philosophers, were called by the same name, and that I know not whether theirs were like to mine or mine to theirs in nature and virtues, shall not much trouble me; for it matters little for diverse Menstruums to be called by the same name, although they do not answer one another in all things. For even as wine is wine, although it come from Germany, Italy, France or Spain, nevertheless each is wine, although the one exceed the other in strength and virtue, as long as the same nature and virtues are found in it, which ought to be in wine: The same is to be judged concerning my Alkahlst: To wit, that if the virtues be agreeable to the name, from whatsoever Subject it be extracted, it rightly meriteth the same name, which that it may the better be understood, I mean by the name of Alkahlst, a very hot, fiery, dry, and also humid water void of all corrosive power, by which Vegetables, Animals, and Minerals, are dissolved without noise, yet not all in the same manner, and elaborated into salutiferous medicines, as I have shewed in the first part of my Mineral work. And because I have written such things of it, which many have endeavoured to prepare such a Menstruum, every one from his own Subject, Impostors also have offered to others, a water plainly corrosive instead of it, falsely pretending that they had obtained the secret from me, and that it is the same which I have described in my Mineral work; then one sells that putative Universal solvent to a another at a dear rate, whose nativity and preparation lies hid with the seller, that so the blind leading the blind both may fall into the ditch; which thing, when I knew it, I was constrained whether I would or no, to lay open to the Reader, what is properly the nature of my Alkahlst, and what are its virtues and powers, so that those who erre, may have a rule by which they may be able to judge of any other pretended Alkahlst, whether it be mine or not.

Therefore this incomparable subject is called an universal solvent, because by its benefit, many incredible things are performed in the preparation of good Medicines, and also in the preparation of metals, yet let no man believe that it dissolveth metals swiftly and violently, like aqua

fortis, aqua regia, or other corrosive waters, nor in the least, but worketh altogether after another manner, viz. Vegetables and Animals are dissolved in digestion, by the moist way, in which solution, the pure parts are separated from the impure.

And Minerals and Metals also being dissolved in the moist way by its benefit, may be washed, purged and matured, and reduced either into good medicines, or into better metals, but not with the same advantage and celerity as in the dry way, by which every many incredible mutations are presently performed, to be admired by the inexpert, too tedious here to be treated of. Besides those two ways of dissolving, which (that I might demonstrate the possibility of the matter) I have shewed to some; there yet occurs another far different from those, by which metals and other Subjects are swiftly, meliorated to the eye, and are matured, separated, and transmuted into the best of medicines, and into purer bodies: the reasons of which, solution there is no need to expose to every one, chiefly because that labour requirerth a skilful Chymist and there are few who heartily search into the secrets of nature, but most Chymists vexing themselves with vain processes, understand nothing solid in Medicine or in Chymistry, which imaginary Artists, when they happen upon true writings, cannot reach their sense with their dull brains; they speak evil of the Author, disdaining his industry and unwearied labour, in communicating his talent; whence it comes to pass that he which brings forth any thing of good, finding nothing but ingratitude, chuseth rather to carry his talent with him to the grave, than to publish it to his own damage. And this is the only cause, why I have not plainly professed the use of this Menstruum in the preparing of medicines, and meliorating of metals, but have only pointed at what may be effected by the help of it, that it may be made manifest, what is to be judged concerning it, and whether that which is sold for such by others, be like to that described in my Mineral work or not: I doubt not but many will quickly despond, thinking that their Alkahlst will in no wise perform those things which I here ascribe to my Menstruum, and will also believe the matter not to be so easy, as before they thought it to be, but although it arise from a vile subject, that nevertheless its invention and use is very difficult. For whatsoever hath such a menstruum, by which these following things may be effected, he may indeed rejoice in the possession of the universal solvent or Mercury of Philosophers, having a door opened to true medicine and Alchymy. Therefore for the sake of Searchers, I will begin to shew somewhat of its virtues and powers, as far as I may, that the Magnalia of God may thence be made manifest, and that I may give occasion to every man, to render praise, and thank to his Creator, who is the giver of all good.

of

Of the Transcendent Virtue, Power, Nature, and Property of this Wonderful

Universal Menstruum.

IT is worth our noting, that three Operations especially may be performed by the benefit of this Menstruum.

I. It maturateth all Vegetables and Animals, being dissolved into a Liquor; and taking away their Venom, converteth them into salutary Medicines.

II. It dissolveth Minerals and Metals, as well by the moist as by the dry way, correcteth their venoms, ripeneth and fixeth their crudity, so that they may be made good Medicines; and after fixation, yield good and genuine Gold and Silver.

III. Those Metals, Minerals, Stones, and other compact Subjects, not dissolvable by the aforesaid waies, it dissolveth, maturateth, purifieth, and in an hours space exalts Metals, more than the two former Solutions can do in a whole day, whose change into better may be observed in every hour: It dissolveth Metals and Minerals into a penetrating spirituality, so that the Metal is not separated from the Menstruum, but a solution is made of both, either by the dry or moist way, from which the more pure part of the Metal, or that which is Gold or Silver, after the premised fixation, is precipitated by Art, especially if many were jointly dissolved. Whence it is sufficiently manifest, that in all the Imperfect Metals Gold and Silver is notably abscinded, not discoverable by the vulgar Examen of Cupels: which Operation being performed by a Menstruum, prepared in so gross a manner, it is credible, that if this volatile Hermaproditic and spiritual Mercury were again fixed, and rendered Corporeal, that it would be by many degrees more subtiler, penetrant, and efficacious, for the dissolving, altering, and perfecting of Bodies, than it was before.

This is its Use in general; but specially it abundantly exerts its manifold Virtue; before whose description, it seems not amiss to point out the common Name of this subject, and what the common People think of it. Which, that I may expedite in few words, know, that it is nothing else but the naked salt of the Earth, of which Salt-Peter is made. But that every salt of the Earth, or common Salt-Peter, hath those Virtues which I here assign to my subject, I shall in no wise say, seeing that it ought to be diversely prepared for divers uses, according to which, thou maist expect divers Virtues.

This subject is necessary to be known by all the Inhabitants of the whole Earth, to all orders and degrees of men, because not to man only, but also to every Creature, it is profitable or noxious, according to its various application.

This subject serveth for Physicians, Chirurgeons, and Apothecaries, of which they may prepare excellent Medicines against the natural Diseases of Men. Whence the truth of that common saying of Philosophers is undoubtedly asserted, viz. That of the greatest Venom the greatest Medicine against Diseases is to be prepared. And that Nitre is the worst of Venoms, I have evinced in the second part of my Furnaces, where I prefer it to the Basilisk himself; and

that from the same Nitre, and its mediation, is to be prepared a most excellent Medicine. In the First Part of my Mineral Work, for the sake of Physicians, Chirurgeons, and others; applying themselves to Physick, I have shewed how by the help of my Alkahlst, Medicines are to be prepared from Vegetables, Animals, and Minerals, far exceeding the ordinary waies of Preparation.

But it is not my mind at present to discourse much of Medicines, it may suffice to have shewed what Virtues this Universal subject hath, and to what uses it may be appointed. I say, that it may be profitable to all orders of men, as well to the superiour, as to the inferiour, to spiritual and secular, noble and ignoble, rich and poor: of which orders the Physician is not to be deemed the lowest.

That I may perform my promise, what unheard of things may be done, by the benefit of this subject, in natural diseases incident to man, who is obnoxious to all kind of miseries, I will in the next place reveal somewhat for his health and comfort.

But this my Medicine, which I deliver, is not of great price, but of great Virtue, and of which the poor as well as rich, may be partakers, and (by the blessing of God) may be freed from every curable disease.

The Preparation.

Take two or three pounds of this Menstruum, whose course nature transmute by force of fire into a nature not corrosive; and you have the Menstruum prepared, with which you shall elaborate this Medicine, in this manner: Dissolve in this Menstruum as much of the softest Ens of Gold (which is to be found in all places of the World, but especially in golden Mines more copiously) as it will attract in the heat; so that a red Solution may be made, which digest for some daies, with its own weight of the dissolving Wine; make separation of the pure parts from the impure, by removing the scum which sever themselves from the Medicine, by falling to the bottom, this being concentrated by an easy heat, will be a red pellucid Stone, very like to a soluble salt, which is to be carefully preserved. This Medicine will be second to none, except the Stone of Philosophers, and will be of the same goodness, after a Hundred Years, that it was the first day it was made, performing all things which I shew with amazement, for which no mortal man can ever render sufficient Thanks to God.

The Use of this Medicine in general.

This Universal Medicine will cure every natural disease both in young and old, strong and weak, in a very small dose, without any danger, not nauseating the Stomach, as the usual Potions do; and is to be taken in any Liquor, according to the Condition of the Sick, as Warm Broth or Gruel, Wine,

Beer or Ale, Water, Milk, &c. from one grain to eight grains, which is the highest dose. It operateth after a diverse manner, according as the strength of the sick, or the nature of the prescribed Doses, the operation will be infensible; it strengtheneth and mundifieth the radical moisture, and in a wonderful manner expelleth every Evil out of the Body being taken daily, every other or every third day: It preferreth from accidental Diseases, correcteth Venom, and relieveth infectious Airs. But if the Dose were greater, the Operation will be more evident, by Sweat, Urine, Spitting, and sometimes by Stool, according as you please, by encreasing or lessening the Dose; and if the disposition of the Disease comply, it is cured by a small quantity of this Medicine, without ocular observation; but being radical, requireth a manifest operation, if it refuse to yield to a small Dose acting invisibly; because both in preparing and using this Medicine, regard is to be had, that you neither err in excess or defect, but by observing a *Medium*, you shall obtain both Profit and Honour.

Those of ripe years may take from one to six grains every day, if they have leisure to attend the Cure, but if not, three grains every fourth day, until there remain no foot-steps of the Disease: taking nothing besides this Medicine, and keeping that day from the cold Air, and abstaining three or four hours from Food. In the *Le-prosie* and foul Scab, there is no Remedy safer than this Medicine, extirpating the Roots of the Evil without trouble. Nor will you ever be frustrated in the desired effect, if the Sick have strength sufficient to undergo the Cure. [See its Preparation and Use more particularly described, in Part 2. *Phar. Spagy.*]

After the Description and Use of this Medicine, by which the health of Man may be preserved, and being lost, may be restored, which is far to be preferred to all the Treasures of the whole World. There now follow other Secrets, shewing how by the help of this subject a man may acquire an honest Living; and, as I have said in the Preface, this subject may be profitable to all orders of men in the World, whether Superiour or inferior, Ecclesiastical or Political, noble or ignoble, rich or poor; by conferring or admonishing somewhat of good to every one in his Profession. Therefore I will now begin to teach some signal uses of it, that it may be manifest to all men, that this is an Universal subject, which I have always judged such, and that others with me may find it so.

In the first place, all Fossiles or Minerals digged out of the Earth, may be perfectly examined by the mediation of this subject, what metals they contain, how many, and how much of each: It is an infallible Guide to the diggers and melters of Ores, saving them both loss of time and matter. An excellent Artifice, by which the value of all Minerals may be discovered without much labour and charge, being highly necessary for Metallurgists, of Germany especially, being quite undone by a continual War, who may in a short time lay up great Stocks or Treasures, to be employed against the Enemies of their Country in time of necessity: by whose benefit also rich Mines of gold and silver (which otherwise would for ever be neglected) may be discovered, when they are swiftly and accurately examined.

The Marcasites of Gold and silver being melted

by the mediation of this, by a singular compendium, hitherto unknown, do afford more metal than by the common way.

The volatile and immature Marcasites of gold and silver, are fixed in the space of three hours, so that they yield more metal than they could have done without fixation.

Those three things are very necessary and profitable to every Magistrate having Mines in his jurisdiction, by which he may obtain much wealth.

All Gold and Silver which is not purely melted from its Marcasite, is swiftly purged from all admittance, the Silver is separated from the Gold, by fusion only, with small labour and cost, but in great weight. Gold and Silver are easily drawn out of old Tin vessels, the tin being preserved almost in the same weight, and being made better than it was before, may serve for the same uses to which it is wont to be put.

From *Bismuth* much silver is separated, the *Bismuth* being preserved, this secret being agreeable to those places which abound with that Mineral.

From old Copper much Silver may be separated, the Copper remaining unharmed, by which Artifice Countries abounding with this metal, may not a little profit themselves.

Every common silver, may in the space of a few hours be exalted into the nature of Gold, the which if it be done four or five times, which may be in a short space of time, it giveth so much gold, as affordeth a sufficient livelihood, over and above the costs.

Gold may be separated by fusion, from every addition of Copper, Tin, Iron, Lead, Orpiment, Antimony, Arsenick or the like, and be purified without Cupels, each being kept apart, profitable for Metallurgists and the like, from the shortness of the time, smallness of the charge and labour, and much gain.

Every imperfect metal without the mixture of other metals, may be ripened by this secret alone in the fire, in the space of an hour, so that it will yield Gold and Silver, but without gain.

There is another very gainful augmentation or increase of the perfect metals, by the imperfect, answering to the Germination or growth of vegetables; for even as every seed being cast into the earth, growth therein arising to be an herb or a tree, and taketh also its increase from the same by its inbred attractive power; so is it here also, for *Sol* or *Luna* growth and encrease in *Saturn*, *Jupiter*, *Venus*, or *Mars*, as in their native soil, and are nourished after the manner of herbs, and encrease from day to day. An Art not to be despised by Philosophers.

By the mediation of this, from all imperfect metals and minerals, yielding nothing by the usual examen of Cupels, Gold and silver is produced in a manifold manner, being an argument that the imperfect metals have somewhat of the perfect reconded in them, when they are inverted and shew themselves to our sight, a work not ingrateful to those who work in Metals.

These are the chief things which I have found may be done in metallick works, by the help of this Subject; yet I make no doubt but there are many more unknown to me, to be revealed to others after me who shall make a good beginning from my writings, the which I also wish from my heart, that the hidden mysteries of the natural wonders of God, may at length be brought to light, for the use of mankind.

Among the enumerated Arcanums, some perhaps may seem of little worth to the Reader; but there are

are some from which may be had a commodious livelihood, so that an Artificer need not be at the will of another, without he please. O how great a thing is Liberty, which no man can worthily esteem, who hath not been a Servant himself. A piece of Bread is sweeter to a quiet, prudent man than many dainties, with care, danger, and noise. It is happy for him who can say with *Paracelsus*, *Alterius non sit, qui suus esse potest*; *Let him not be another's, who may be his own*. But it is good for him that would use well the Gifts of God, not to be unmindful of his Neighbour, lest temporary Liberty cast him head-long into the Dungeon of eternal Slavery. After shewing this subject to be conduible to all the Inhabitants of the earth, I have described its use in Metallicks, which is not to be indifferently undertaken by every man, but by those only who are concerned in digging of Mines, and melting and separating of Metals, whether they be noble or ignoble, learned (as well spiritual as secular, exempted from public offices) or rude, which maintain themselves from Merchandize, or live upon their Estates, all which may receive Fruit from these Secrets, but not Husbandmen, Labourers, Ditchers, &c. but that to these also somewhat of profit may proceed from my inventions; I will shew in order; although the principal will redound to ingenious Artificers, Engravers, Painters, Statuaries, those who adorn Glasse or Clothes with Silk, Gold, or Silver, and they who make Wax-work.

They who etch upon Copper, may prepare from this subject a good corrosive water, by which (the Copper-plates being first smeared over with a covering fit to defend them, and what Images and lines they please, being drawn upon them with a file or stiff) by a very easie and compendious manner, they will be eroded or eaten into.

Painters, by the help of this, may prepare for themselves most excellent Colours, as *Ultra-Marine*, *Smalt*, fine red or scarlet *Lacca*, *Venice-Ceruse*, and others necessary for their Uses, which otherwise they must have from far, as *Italy*, *Holland*, *France*, &c. and at a dear rate.

Engravers and Statuaries may so harden their Tools that they may hold their points long, if they be to cut stones.

Embroiderers may put any durable Colour they please upon the silk with which they work.

They who paint Glasse, by an easie work, may thence prepare all Colours or Enamels for Glasse, so that there will be no need to have them from *Venice*.

They who work in Wax, by the benefit of this, may whiten it exceedingly, and colour it as they please.

Printers may add this subject to their Ink, which will cause it to adhere most firmly to the Paper, and render the Letters very fair.

It is convenient for *Clockmakers* or *Watchmakers*, if a Water be distilled from it, which soldereth Iron or Steel without Fire, if a drop of that *Aqua fortis* be dropped upon it, whence the Iron growing hot, it perfectly waxeth soft, as if it had been soldered in the fire by the help of Copper.

All *Smiths* may by it harden their Files, and other Iron Tools, as hard as if they had been made of the hardest Steel.

Tin-workers or *Pewterers*, may harden their Tin or Pewter, and give to it an elegant whiteness, so that it will resemble Silver both in colour and sound; neither will it easily tarnish, and by reason of its hardness

will endure longer than common Tin or Pewter.

Cabinet-makers may strike an excellent Black upon Pear-tree, Cherry-tree, Box, Walnut-tree, and other hard Woods, which may be used for curious Works instead of Ebony.

Skinner or *Furriers* may dye their Ermins, Foxskins, Wolf-skins, and the like Furrs, with a Scarlet, Crimfon, or deep Black colour, far exceeding the natural.

In like manner, *Feather-dyers* may swiftly give any lasting colour to their Plumes.

Tailors may take out spots or stains out of Woolen, Linnen, or Silk Garments, and restore their beauty.

If *Shoemakers* put old Iron to this subject, they may therewith adorn their Leather with an excellent Black.

Weavers may render their Linnen threads so fine and soft, that they shall emulate Silk.

Dyers, by this, may give so firm and unchangeable a ground to their Cloth, that the superinduced Colours shall not be corrupted or spoiled by any Wine, Vinegar, Urine, Pickles, Air, or Sun.

Potters may thence prepare a Glassy colour, not unlike to the *Indian Porcellane*, of which Vessels may be made, having the Aspect of Gold, Silver, or Copper, a singular Ornament for Noblemens Tables, hitherto unknown to the World.

Soldiers, *Merchants*, *Travellers*, *Carriers*, and others who are much in the open Air, may of this prepare a Varnish, in which they may dip a Linnen Cloth, which will not permit either Air or Water to pass through it, with which they may defend their Boots or Clothes, so that they may travel dry in the Rain.

They who make Tapestry, may restore their faint or faded colours, so that they shall be strong and beautiful.

Mistresses of Families may prepare of it fine Soap or Washballs, far exceeding that of *Venice*.

Household-Maids may with it scowre or cleanse their metallick vessels, so as to render them neat and beautiful.

Women may change the yellow, pale, or brown colour of their face and hands into a beautiful whiteness.

Old Women may by an easie way take away the wrinkles of their face and hands; as also, the Corns of their feet, and boil their Linnen to such a softness, that it shall come but little short of Silk.

Gardeners by this subject may destroy all Insects, by mixing it with Water, and pouring it into those places where they breed, for they will either die in their holes, or run out to die, because they are not able to abide that fire. It also ripeneth Fruits, if a little of this *Menstruum* be applied to the roots, at the entrance of the Spring; and if a large quantity of Apples be covered well over with it, they may thence prepare a lasting Wine, Vinegar, or burning Spirit.

Bakers may use it instead of Ferment or Yeast, if they dissolve a few Hops therein.

Brewers may have very strong Ale or Beer by its help, if they extract their Hops with it.

Mead or Methaglin, as also Beer and Canary, which are upon the turn, and growing fowre, may by this be rendered drinkable.

Comb-makers, and other Horn-workers, may by this soften their Horns, so that they may imprint upon them what Images they please.

Keepers of Armouries may preserve their polished Arms or Harness safe from Rust, by anointing it over with this subject.

Bird-Catchers may by help of this prepare such a Birdlime as will not be hurt either by Cold or Heat.

Souldiers by means of this may prepare from Gold a fulminating Powder, of which the magnitude of a Pease being put upon a red-hot Iron plate will give a greater clap, than half a pound, yea, a whole pound of Gun-powder; the same may also be prepared without Gold, only by the addition of Salt of Tartar and Sulphur; as it is described in the second Part of our Furnaces.

Engineers and Makers of Fire-works, may perform many wonderful things by help of this subject.

There may also many new Works, belonging to Weaving and the Smith's Art, be thence made, which may be communicated to neighbouring Countries, whereby Money may be brought in lieu thereof to a Country impoverished by War.

If Vine-dressers, or Keepers of Vineyards, pour a little of this subject to the Roots of their Vines, they will have ripe Grapes, and Must, or new Wine sooner than their Neighbours; of which they may make a good advantage.

Nevertheless, Must and Wine also may be ripened after another manner, in the Hoghead, without this Art; so that they who understand the way, may have always good Wine, when others have it fowre: A Secret very profitable to cold Climates, which for the most part produce fowre or tart Wines. It is also agreeable to Countries abounding with Wine, when through a want of the heat of the Sun the Grapes do not ripen well; which may be helped by this Art, so that it may be readily sold.

But because the greater part of men, especially of the meaner sort, cannot be persuaded to things which they have never seen nor heard of, I well know, that if I should in plain words describe the reason and manner of meliorating Wines, scarce one man in a Hundred would believe me, but would rather say, Our fore-Fathers were wise men, and got great Estates by Wine, without the knowledge of this Art, nor did they desire it. If Nature will not ripen our Wines, let them be fowre; yet notwithstanding, if sometimes they will not serve the Master, they may be drank by the Servants.

Men of this sort are incurable, neither are they (being old) easily tamed; and young men take little care how prudently they manage their Affairs. Hence it comes to pass, that Antiquity obtains upon all men. But that the Vine-dresser may see the present Age is more skillful than the former, I will set before him only one demonstrative Example, by which he may plainly see how much they differ.

Our fore-Fathers knew not how to make any thing of the faxes or dreggs of Wine, but a burning Spirit or Brandy, which being extracted, the remainder they threw away, or sometimes mixed it with the Fodder of Cattel, very rarely dried them in the Sun, and burnt them into Pot-ashes; but by my invention, there may be thence drawn a far greater quantity of burning Spirit, then also a large quantity of Tartar, and at last the Pot-ashes, which is a threefold profit. Which if you manage the matter well, from a Pipe of Lees, you will have at the least seven or eight Urns (which will be about a fifth part, as I have being four Gallons) of good Wine, from the residue, you will have the burning Spirit,

and Tartar, at the last the clavelated Ashes, the profit being four times as much as heretofore, which thing was altogether unknown to our Ancestors. How many Thousand weight of Tartar is every year thrown away in Franconia, Suevia, Alfatia, the Palatinate, upon the Rhine, Mosell, and Danube, which would be very profitable to those Countries, if the men were Artills.

But what doth it signifie to teach, if there be none to hear or learn: for it is more advisable to sit still and do nothing, than to be largely employed to no purpose. But I am persuaded, that after my death, there will be some who will understand my good will to the World, and search out the truth out of my Writings, to their own great profit. There is an opportunity or season for every thing; Trees first bring forth Buds, then follow Blossoms and Leaves, and last of all, Fruit.

There remains yet another thing very profitable to Country-men; the juice of Apples or Pears being pressed out, by the help of this subject, such an Effervescency (or working) is promoted, as Wines may be thence made, having the relish of the natural, and but little inferiour in durability and strength: and although the beating of the Apples be somewhat tedious, (which is now done much quicker by Mills) that labour is recompensed with a good profit, by the Wine arising from the juice; a Secret very necessary for cold Countries, which cannot ripen Wines, and yet abound much in Apples, but by this way may save much in the price of Wines, for which they usually pay dear.

I have indeed many Arts relating to Wines, but they belong not to this place, my purpose here being to treat of those only, which are administered by my *Universal Menstruum*: Arts (as I think) hitherto known to none, or at least not divulged, that it may be manifest to the Reader what proficiency the World hath made in good things. Whether the matter be credited, or not, signifies little to me, I my self also might have doubted, if I had not learned by experience; but judgment ought not to be given rashly; we are to know, that God doth wonderfully dispense his benefits to those who are his Servants, and whom he hath appointed to be his Instruments, to bring his wonders to light.

If Husbandmen moisten their seed with this *Menstruum*, it will sooner be ripe, and have larger, fatter grains than ordinary: Which being done, I will shew by what means they may make great profit of their grain. The grain being whole, not ground, pour to it warm water, impregnated with this *Menstruum*, in a Hoghead well stopp'd, let it stand and ferment or work for a time, the water will extract all the strength of the grain, the remaining husks serving to feed Hogs: If you ferment Hops with this Liquor, or extract, it will be good Beer: If you will not do this, you may thence draw a very good spirit, the residue, in a short time, will be Vinegar; and if you be wise, you may put this burning Spirit or Wine to many uses, by which you shall have more profit than by selling it; a Secret not to be despised where grain is cheap. I have yet one thing to add among my Wine-Arts, concerning grain, and the Fruits of Trees and Shrubs, which is to be received with thankfulness, as a great Gift of God to Mankind. *Viz.* It is found by industry and manifold experience, that from Rye, Wheat, Oats, Rice, Millet, also from Apples, Pears, Peaches, Cherries, Plumbs, Sloes, Damascens,

malcens, Quinces, Figs; as also from Goose-berries, Mulberries, Barberries, Black-berries, Elder-berries, and other-like Fruits of Trees and Shrubs; from all these, I say, may be prepared, with little labour and cost, a Drink very like to Wine, both in taste, smell, and strength, being grateful, wholesome, and durable. For which large bounty, the Inhabitants of cold Climates (which never see Grapes) cannot render to God sufficient Thanks.

There yet remains a manifold use of this subject in Medicine, which if it were rightly described, would make a great Volume, which belongs not to this place, but shall be done more commodiously at another time in a peculiar Treatise. It were to be wished, that this subject were better known, and more used by ingenious Chymists and Apothecaries, that so many dead Herbs and unprofitable Waters might not be set to sale. What, I pray, would it avail, if the whole Mass of Blood being inflamed with an intolerable heat (as happeneth in the Plague and other contagious Fevers) you should wrap the head with a moistened Rose-Cake, comfort the Temples, Pulses, Hands and Feet with Water? think you by this to drive away the Disease? Not at all, but rather render it worse, as Experience hath often witness'd. But it seems to me as if a vapoury Bath or Cauldron were too hot, and one should go and cover the Furnace all over with cold linen, to temper the heat, a thing to be laughed at; but the wood which causeth the flame being taken out, the Furnace cools of its own accord. By a like reason, the malignant Fire of hot Diseases is in the space of a few hours, drawn out from the most inward Penetrals of the Heart, by four grains (at the least) of a good Medicine, where no place is left for external Coolers, or corroborating Epithems. Which thing I have observed not only in one, but in many Experiments; That the Venom being excluded from the Heart, the Body hath returned to its due temper, and by degrees to health and strength.

To what purpose are so many Ointments, Oils, Emplasters, &c. when a small quantity of a good Medicine is able to effect more than them all? A whole year is often spent in the curing a small Ulcer or Wound, and then left worse than at the beginning, the Bridle (according to the Proverb) being applied to the Horses Tail, and not to the original of the Disease. The Fountains of external Ulcers are to be stopp'd up with outward Plasters, which otherwise, without any outward Remedy, by a small quantity of a good Medicine, may be radically cured in the space of a few weeks. Therefore such a Medicine is to be sought, and all other trifles to be laid aside: But what dost thou, seeing the World will be deceived, and desireth no other? For if any Physician have a good Medicine, which is much easier for the sick to take, than many ingrateful Potions; this is neither esteem'd nor rewarded, for if he require a Fee or Reward, he is answer'd, That he gave only a few grains of powder, two or three times, which cannot be so dear: Hence chusing a certain thing for an uncertain, he requirereth his reward according to his visits, and prescribereth Bottles full of Physick, which may be long in taking, and he have the fitter opportunity to encrease their number.

The same thing hath also obtained in Chirurgery, for if an honest Chirurgeon quickly cureth

an outward Evil by the help of a good Medicine, he shall not have a due reward, but shall be told, That he hath only applied two or three Plasters, which can be worth but little. Therefore instead of being paid for a quick Cure, he reaps nothing but ingratitude; so that being better taught, it becometh him to do like others, by employing a month or more about that Cure, which he could perform in three daies.

For this, and the like causes, very few are treated with good Medicines, but Physicians study delays, after the old manner, if not in respect of the sick, yet at least for their own profit; for if the sick readily pays his Fees, he either out of ignorance or voluntary neglect, neglecteth the matter, for which he will have an heavy account to give.

The present World doth only this, he that standeth, let him stand, and he that falleth, let him lie, none regardeth it; every one taketh care of his own matters; nor will he put his hand to the quenching of the fire. That famous Patron of Art, Alexander the Great, who bestowed upon his Philosopher Aristotle more than a Hundred Thousand Crowns a year, for his Inquiries into Vegetables, Animals, and Minerals, now ceaseth to be. The most wise Ernestus Duke of Bavaria, and Elector of Cologne, What Expence hath he not been at in collecting the Writings of that incomparable German Physician and Philosopher, Paracelsus, and other such Cherishers and Advancers of Arts, our Germany hath lately brought forth? but Mars (the Sword) asserting his Empire, hath banish'd Jupiter and Mercury (Justice and Arts) so that they play least in sight; but fire it is, that if they be not quickly restored and advanced to their dignity, it will be to the unspeakable detriment of the Country, and to the great advantage of Strangers; Which God of His Mercy prevent.

And now the benevolent Reader hath seen, what wonderful and incredible things may be performed by the benefit of this subject; yet I will not deny, but that it may also serve for many more things which I know not, being profitable for all orders of men, superior and inferiour, learned and illiterate, great and small, according to their several Vocations and States. But some men may say, I do indeed believe that many great things may be done by its means; but because thou dost not together and at once shew the way of preparing the *Universal Medicine* or Tincture by its help; there is therefore reason to doubt whether it be the *Universal Secret Menstruum* of the ancient Philosophers, to wit, the *Hermaphrodite Mercury*, so much spoken of by them, every where to be found, a thing contemptible and vile, to be found in every Dunghill, by nature cold and hot, a great Poison, quickly killing and quickly healing, a matter to be found with all men, which the rich and poor equally possess, which Adam brought with him out of Paradise, and many more Epithets of the Ancients, which are all agreeable to that thing. To this I answer, That in my judgment the Ancients had no other *Universal Mercury*, to which all their marks do perfectly agree, and may be applied. Do not all men know it, seeing and beholding their own Urine, of which it is generated? Is it not a very vile matter, which we keep not in the Houfe, but throw out of doors, according to the Precept of the Philosophers, to be sought in Dung? Is it not a great Poyson when made into Gun-powder or *Aqua fortis*? and, Have not I shewn that a Uni-

versal Medicine may be made of it? Is it not a meer Fire, and also being pure, cold as Ice? and if you will, hath it not equally masculine and feminine gifts? Doth it not so impregnate the imperfect Bodies in the space of a quarter of an hour, that they generate Gold? Is not it self impregnated by the heat of the Fire, that it bringeth forth those Fruits? Is it not highly volatile, and presently firmly fixed? Is it not a Water both moist and dry? a great Corrosive, and yet being rightly prepared, an Enemy to Corrosives? Is it not most heavy and most light? To what thing, except Nitre, doth this Enigma of the Philosophers agree? For, What is blacker than a Crow, whiter than a Swan, more hurtful than a Serpent destroying many, lighter than the Wind, heavier than Gold? Is not this the true devourer of his own Children (the Metals) the *Azoth* of Philosophers, the Soap of the Wife, the Urine of Boys, Sulphur vive, the Salt of Strangers, the Secret Fire of Philosophers?

Are not all these things in Nitre? But by what method they may be there found, is not my business to shew in this place, let it be sufficient to have pointed out the subject in which they are to be sought and found, which no man before me hath been so kind to do. For further demonstration, to wit, that from Nitre a true *Universal Solvent* (I would not have you imagine it to be *Aqua fortis*) may be prepared, there needeth not. But thou maist contradict it if thou canst, or name another subject in which are all those things. Which I know thou canst not do, if thou couldst at once take a view of the whole World.

That I have not written any thing concerning a Tincture to be prepared of it for the Imperfect Metals, (which defect the ancient Philosophers have supplied) thou maist think that I have not proceeded so far, and that I have wanted time and opportunity to make a farther Progress, nor did I ever aspire to so great things, but have contented myself with those of a meaner Rank. But how far I have penetrated by searching into Nitre, may be seen in the Second Part of my Furnaces, where I have prescribed some notable Processes from a gross subject, of which this is not the least, where I shew, that some years before, I would have melted a Calx of Gold, and because it would not melt, I added by intervals a Fluxing Powder, prepared of Salts, till all flowed well, then the Crucible being taken out of the Fire, and the matter poured out, when I expected Gold, instead of that I found Lead, but the Fluxing Powder was very red, (although made of the whitest Salts) being tinged with the *Animas* of Gold, the Gold being dissolved of all its dignity. Which thing, when I had considered, believing some Secret to lie in the matter, I several times repeated the labour, but always in vain: the cause of which error was not the subject, but my self, who had not observed the weights and degree of Fire; or God, who would not that I should make any farther discovery. Truly, if that Labour had succeeded, I should long since have possessed the Stone of Philosophers, who am now forced to sustain my Family by meaner things with labour. But passing by this, see, I pray you, what the most accurate *Philippus Paracelsus* ascribeth to rude Nitre, when he saith, *Chymistry hath discovered the matter to lie in Nitre. Let Basil Valentinus, Sandivogius, and the ancient Philosophers, be considered, and you shall see that all their Sayings are accommodated to the operation of this subject, and that I have not attributed too much to it, but rather less than is due. I could, had I a mind so to do, compose all the terms of Philosophers with*

this subject, but to what purpose so great a prolixity? He that shall once come so far as I am, the Secrets of the Philosophers will be sufficiently manifest to him, and will freely confess, that this is the only true *Universal Solvent*, and that there is no other. Many have always believed this thing to be prepared of Nitre, but because they were not fully confirmed in their minds, they tried nothing with it, and therefore found nothing. Many men in my time have endeavour'd to fix Nitre into a Tincture, but because they took it crude without a due Preparation and fit Associate, such as it was when they committed it to the Fire, such it remained; but if they had known how to have joined an amicable subject with it, perhaps it might have been more profitable. *Basilus* commandeth to associate it with a brisk and lively female, from whose embraces the Queen might bring forth issue: All the Philosophers say, that to *Mercury* is to be added its own weight of Gold and Silver, (but not the common) and that of both is to be made one indissoluble thing; for while the Gold is dissolved by the Mercury, in the same moment the Mercury is coagulated by the Gold, the solution of the Body, and the coagulation of the Mercury, are done both by the same Work. Certain it is, that there is one thing among Minerals, which is conjoined and fixed with our Nitre, and during the fixation, passeth all colours; but I know not the end of the thing, having never performed that labour, and by reason of my great age, think not to repeat it; nor will I be the adviser of any man, that he should search after an uncertain labour with a certain Loss: but if any man in doing this shall miss his hope, let him not blame me for giving him the occasion by this Writing, who have wrote this only for this end, that I might make it manifest, that the name of *Universal* is not undeservedly assign'd to it: Neither also is there any need, that a thing of so great moment should be made known to an ungrateful World. Any of those things which I have shewn may be done by it, are sufficient for a man to sustain his Family.

Some man may except, and ask, Who hath revealed to thee, that this is the *Mercury of Philosophers*? I answer, That I know it to be such from the properties, form, and nature assigned to it by the Philosophers, which thou also, if thou hadst Philosophick eyes, wouldst acknowledge to be such, which is wont to hide it self from the proud, and to reveal it self to whom it pleaseth God. If a skillful Gardener should happen into a Garden, where he should see that wonderful Vegetable, *Noli me tangere*, (which at the first was brought from the *East Indies*, therefore planted and cherished with great care and admiration in great mens Gardens) of which he had read so many portentous things, viz. That refusing every touch, it would fall to the ground. And although he had never before seen this Herb with his Eyes, would he not certainly apprehend this to be that very Herb? for the Vertues attributed to it argue that it cannot be any other. So he whose eyes it hath pleased God to open, so that he can apprehend all the Properties to be in a subject, which the Philosophers affirm to be in their *Universal Mercury*, Will he not, acquiescing in that, desist from seeking out another?

Lastly, *Salt Nitre* is the only growth, generation, and increase of all Vegetables, Animals, and Minerals, as also their Destruction, and Regeneration, by a perpetual Circulation of the Elements, by which things

being dissolved, do again return into the same from which they arose: For the Nitre of Vegetables in the bodies of Animals by the intervening digestions and separations, is generated into a Mineral Salt, which none will deny: and Nitre or Salt of the Earth, is Vegetable, Mineral, and Animal, which cannot be said of any other subject, but the *Universal Matter*. And even as it is the chief Conservator of Vegetables, Animals, and Minerals, so it is also their Destroyer and Death; therefore by them it is both loved and hated. Vegetables love it, when growing in the Earth, they thence draw their nourishment; for when the Earth is dead, or void of Salt, it affordeth neither nourishment or increase to feed, Christ himself being witness, when he saith, *Ye are the Salt of the Earth*: but if the Earth be destitute of Salt (or the Salt hath lost his saltness) it is altogether dead, and can bring forth no Fruit. An ignorant man saith, that Dung maketh the Earth fruitful, but undeservedly, for not the Dung, but the Salt which lies hid in the Dung, doth this, which is generated of Vegetables after their putrefaction, and again transmuted into their seeds and roots which are in the Earth; the same Animals again receive in their food, whereby their bodies are strengthened and preserved from Corruption. For no man is so rude, but he hath learned by experience, that Salt is the Preserver of things both living and dead. But an ignorant man may object, that other things also have a preservative Power, as myrrh, aloes, and other Balsamick Liquors, which preserve Flesh and Fish from putrefaction. To this I answer, That it is not myrrh or aloes, but their salt, which effecteth this. Honey also and sugar preservative things, which are not salts. I answer, That thou understandest not the nature of Salts; those are sweet salts, the other are bitter salts, which by putrefaction are changed into fowre and acid. Also every burning spirit of Wine, and other Vegetables, preserve other bodies, although they are not in form of salt, nevertheless it is nothing else but the most pure volatile salt of the Wine; mixed with its sulphur, which doth this; for none of the Principles is sincere, and wholly free from the mixture of the rest. Vinegar doth the same thing, and is a meer salt, which if time would permit, I could easily demonstrate. What man's senses are so dull, that he cannot understand one thing to pass into another, by the mediation of putrefaction, to him even great Volumes would profit nothing. From the sweetest Must (or new Wine) Sugar, Honey, by the help of putrefaction and Fermentation alone, is made an acid Tartar, a strong Vinegar, and a volatile burning Spirit; all these will presently return into a nitrous salt, which few understand, those especially who are believed to know much. Not only Man is delighted with salt, without which he cannot be found and in health, but also all Animals. Mice, above all, are very greedy of Salt, the which if they find not, they lick the saline effluences of Walls, and make a very nitrous Urine. Pigeons also frequent old Walls, which abound with salt, Hens pick out the grains of Oats from Horse-dung, which are full of salt, preferring them to fresh Oats, and thence become more fruitful, in laying more Eggs; the salt concocting the small stones

which they swallow, in their Ventricles, is the first matter of Eggshells; but if, being shut up in Pens or Coops, they have not that salt earth, with the small sand or stones, which they usually devour, or their stomachs being weak, doth not digest them, the Eggs they lay afterwards, will be such as we call windy Eggs, having no shells, or such as are very imperfect. Minerals growing in the bowels of the earth (Experience being witness) rejoice in salt, from which they associate to themselves bodies, and make an increase: In like manner, they love it out of the earth, and by it are ripened and meliorated; amongst which Salts, Nitre, as I have said, is endowed with a singular Sympathy towards Metals. On the contrary, Minerals as well as Animals and Vegetables, abhor salt, if they be utterly associated with it, for so they are corrupted and destroyed; for salt being admitted in a due manner, is the only preserver, augmenter, and perfecter of Vegetables, Animals, and Minerals, which all the Philosophers confess; amongst whom, *Plato* ascribeth to salt something divine, to whom succeeding Ages have assented, seeking many things in salt, yea, even the stone of Philosophers it self; but being ignorant what a true salt was, and of the manner of applying and preparing it, they could not make any further progress. Hence any man may easily see why the Ancients called those Secrets by the name of *Alchymy*, viz. as a certain handling and melting of salt, for which reason also they familiarly used these words; *In Fire and Salt consisteth the Magistry*: Implying, that by the benefit of fire and salt, a true Medicine was to be prepared, as well for the health of men, as for the perfection of Metals.

If God prolong my Life, and grant me opportunity, I will hereafter, for the good of Mankind, openly declare what *Salt and Fire* are, that the incredible Vertues of those two bodies, as yet unknown to the World, may be made manifest to all Men. One thing I will add, that the Philosophers pointing out the *Universal matter*, speak obscurely, when they say, that it is every where to be found, that the Poor hath it as well as the Rich, and that no man can live without it, whence many have sought for Air, Rain, Snow in *March*, *May-dew* dreaming the *universal matter* to be in those, and when their labour hath happily ceased, they have obtained somewhat of a nitrous salt. It is certain, that the Stars do impregnate the Air and Clouds with their Catholick seed, which presently falling in form of Rain, Snow, and Dew, render the Earth fruitful and fit for germination, and that they are again drawn upwards by the warmth of the Air, leaving their Nitre in the earth, to be again impregnated by the stars, and again to descend to conciliate the fertility of the earth, lest the earth at any time should labour under a want of this universal seed, but continually applyeth it self to the vegetation of things, and preserveth a perpetual Circulation of the Elements. Hence *Hermes* hath written, that *That which is above is as that which is below*. Yet nevertheless, we need not seek it among the stars, seeing that it may sufficiently be had, by a far shorter way, at hand, and before our feet. For so much the words of *Hermes* intimate.

The Words of the Secrets of HERMES.

True it is, and remote from every cloak of a Lye, that whatsoever is below, is like to that which is above; by this the wonderful things of the work, of one thing, are acquired and perfected, even as also things are made of one, by the consideration of one, so all things are made of this one by conjunction. Its Father is the Sun, its Mother the Moon, the Wind carrieth it in its belly, the Earth is its Nurfe, the Mother of all perfection. Its power is perfect, if it be changed into Earth; the subtle and thin being separated by the fire from the gross and thick, and indeed prudently with moderation and wisdom; this ascendeth from the Earth unto Heaven, and again descendeth from Heaven to the Earth, and receiveth the power and efficacy of the superiours and inferiours. In this manner thou shalt acquire the glory of the whole World; thou shalt drive away all darkness and blindness, for this is a Fortitude excelling all other power and strength, for it is able to penetrate and subdue all things, as well those which are thick and hard, as those which are subtle. In this manner the World was made, and hence its admirable conjunctions and wonderful effects, seeing that this is the way by which those wonderful things are effected; and for this reason I am called by the name of *Hermes Trismegistus*, seeing that I have three parts of the wisdom and philosophy of the whole World. So I conclude my Speech which I have made concerning the *Solar Work*.

These are the words of the most ancient Philosopher *Hermes*, who for his perfect knowledge of Nature, is deservedly titled *The Father of Philosophers*; in which words he hath sufficiently hinted, That his little Bird without wings (which flying day and night is not wearied) is the Spirit and Life of the superiour and inferiour Elements, the Conserver of the superiour and greater, and of the inferiour and lesser World, and that it lies hid in Nitre: For the better understanding of which, let a man thoroughly consider the Air, in which the *Universal Spirit*, the first Ens or Being of all things, dwelleth, without which no Animal can live a quarter of an hour, nor any Vegetable or Mineral be produced; neither can the Sun shine, nor the Fire burn. Even as the Excrements of Vegetables, Animals, and Minerals, by a continual Circulation, are transmuted into Elements, the Elements into Excrements, and those again return into Aliments, by an unceasing renovation and transmutation, which Man only doth not attain.

The *Husbandman* knoweth that the Leafs, which every year fall from the Trees, afford a new vigour and nourishment, that the Excrements of Cattel produce very good Grasse, that the Faeces or Excrements of Minerals, from which a Metal hath been once separated, is in a short time impregnated by the Stars, that being melted, they again yield the same Metal which they had done a little before: and the *Scoria* of metals are every where returned to their Mines, where in a years time being recruited by the attractive power of the *Universal Spirit*, they are again impregnated, so that they again by melting afford metal. Doth not the Earth, from which *Sal-Petre* hath been extracted, being expo-

sed to the Air in the interval of some months, yield other *Sal-Petre*, and this as often as you will, as if nothing had been extracted from it? Doth not all things which are calcined, viz. Lime made of Stones, Shells, Woods, Herbs, from which the Fire hath forced the *Universal Spirit*, by a very strong Appetite or Magnetism, draw the *Universal Spirit* again afresh, and return into a Corporeal Nitre? Is not the heat and vertue of the sun; the excrement or superfluity of the sun, by which it is nourished and sustained? If heat were nothing to the sun, the Air, by its Nitrous Essence, could never render it weighty, nor cause it to distill in fruitful Rains; nor could the Earth bring forth Fruit, and afford fresh nutriment and food to the sun, its conservator: Whence it followeth, that an Excrement is always the conservation and nourishment of that thing which makes or separates it. But here *Plato* commandeth to rest; at another time (*God* willing) more shall be spoken. We have heard, that in salt especially in Nitre, although slighted by the unskilful, there are found most potent and profitable vertues, as well for true *Medicine*, as for *Alchymy*. Nor is it reasonable that any man should be offended with its cheapness or low esteem; but he may rather think, that that which is despicable before the World, and imaginary Philosophers, is most precious with God, and those who know the mysteries of Nature. Therefore it remains, that in the nature of things there is not a better subject, by which more and greater wonders may be performed, than *Sal-Nitre*. Therefore, I also constantly affirm, That of it may be prepared the true *Mercury of Philosophers*: but I will not say, that I know the Preparation of the *Stone of Philosophers* from it, because I never went so far: But those things which I have delivered concerning it in the correction of metals, and other good Arts, Experience alone hath taught me; in which I acquiesce, and all those things, if the matter should require, and it should conduce to a good end; I should not blush to demonstrate singly through their parts, that it may be laid open to all men, that all these things may be performed, but not by every man; seeing that I have not written for that end, that they should be profited to all men, for then I should have wrote more fully, but that they might remain in the power and custody of Friends. It can hardly be believed, what great troubles my Writings have created me, while one accosts me from this place with long Letters, willing me to unfold this or that Others address me with a great Catalogue of Questions, of which, if I should answer the tenth part, I should scarcely have bread to eat.

If the LORD see good, he will afford me time and occasion of doing yet better things, but if not, let the Reader accept the will for the deed: Truly, there are many Sciences of great moment in my Possession, by which I could point out a safe path to Posterity, for the attaining of higher things, but because I have always studied to maintain my Family, with my own honest labour, without detriment to my Neighbour, I am (contrary to my genius) prohibited to publish more, being constrained to apply my hands to ancient labours. Some may

may infer; If thou hast found out more, act by others, thy hands being suspended from the Work, let it suffice thee to have disposed of thy labours. But he that shall thus say, confesseth himself, not to know the World to be perfidious: If I could have been made partaker of faithful Operators, I should long since have had a free prospect of my affairs.

But it is not at that pass as many believe, men are now perfidious, keeping no promises, every one seeketh his own, right or wrong; Benefits are rewarded with evil, which hath happened to me more than once; when I have adopted one for a faithful fellow-labourer, the contrary hath happened: For as soon as he hath learned any Secret, believing himself to be more learned than me, hath feigned divers excuses to get away, which if he could not effect openly, and with Consent, he hath attempted

it privately; or hath carried himself so petulant-ly, that I should thank GOD to be freed from him. Whence it came to pass, that I always lost my purpose, perceiving the Proverb to be true, *He that will have his business well done, must be both master and servant*.

But I trust, that in a short time after my death, those who shall distribute my Laboratory among them, where I have made a stand, will further search out the secrets of Nature, and being lighted by my Torch, will come to the desired end: but it will be much more grateful to me, if my Secrets, which I have found out with great Costs, Labour, and Care, should be known to many, than that they should be intomb'd with me, without Usury. To which end I will always, according to my power, be a most ready helper and Counsellor, for the sake of Posterity.



THE
EXPLICATION
OF
Miraculum Mundi.

Set forth

In Testimony of the truth of that Matter, and for the Advantage of the Lovers and Followers of A R T S.

Reader,

In the first place, before I prove and verify the powers and vertues of the aforesaid *Universal Subject*, which I have attributed to it, in every print, it will be necessary to make known after what manner the mentioned *Salt of the Earth* performeth its Operations, that the benevolent Reader may not be confounded, nor imagine that it exerciseth all its Operations in one only manner and way, to wit, as *Aqua-fortis*; for it doth not so, but it exerciseth its power in three manners, forms, or figures, to point, in order.

For Example sake; Its first Use is in many *Bustness* and Arts, as it is simply drawn from the Earth, being purified, and is known to all men. It is applied to another use, being first calcined by fire, and changed and exalted into a more fixed substance. Again, for another use, it is first distilled into a volatile Spirit, and *Aqua-fortis*. And so that subject performeth its Operations in Figures, simple, as it is in its self, in form of a Sun; secondly, as a fixed fiery Liquor; thirdly, in the figure of a volatile Spirit, or corrosive crude, as it is of it self; for it doth not so, but it exerciseth its power in three manners, forms, or figures, to point, in order.

X x 2

Point

Point I.

In the first place all Fossiles, by the mediation of this Subject, may be perfectly examined, what Metals they properly contain, how many, and how much of each.

For the verifying and demonstrating this first point, I will begin to shew, that Minerals may be most commodiously proved by the Mediation of the Salt of the Earth, and in what manner this is to be done. First, The Mineral is to be finely powdered, whether it be Gold, Silver, Copper, or Lead. To a hundred weight of this, add three or four hundred weight of Calcined or fixed Nitre. [Note, That the small Say weight is here meant] mix all very well together, put the mixture into a very strong Pot, which is to be shut with its Cover, set it upon a small foot in such a melting Furnace, as is described in the fourth part of my Furnaces, kindle the fire by degrees, and let the minera, or Ore flow well with its liquor in the Pot, like water, then pour it out into a Vessel fit for this purpose, suffer it to cool, then take out the Regulus; if it be \odot , \circ , \circ , or \circ , weigh it in a Probatory Balance, and you shall find how much \odot , \circ , \circ , or \circ , there is in that Ore. NB. That Iron and Tin cannot be proved in this manner, for δ is not fusible in such a fire, and γ is reduced into Scoria by Combustion, by reason of the Salt. NB. That if the Regulus of \odot or \circ come not pure, or contain any \circ or \circ , suffer it to run upon a Test or Cupel, with a little \circ , till it sparkle and shine, and you shall have the Metal fine, which is a proof that may securely be trusted, and according to that a Computation may be made, without any fear of fraud or Sophistication; the Regulus of Copper or Lead, need no other trial, but are judged good. NB. That if the Ore be stubborn, and yields no Regulus in the first melting, let the Pot be again set into the Furnace, (if it be yet whole, putting to the Ore, giving no Regulus, a piece or two of Iron) being covered, least the Coals fall into it, suffer it to flow, then the iron entereth into that untameable Sulphur, existing in the Ore, and hindering it from passing into Regulus, and suffereth the Gold, Silver, Copper, or Lead, contained in that Mineral, to fall down, which is to be poured out into a fit vessel, and the Regulus will settle to the bottom, which being cold is to be separated from the Scoria; but if you will prove whether or no the Gold containeth any Silver, or the Silver any Gold or Copper, or the Lead any Silver or Gold, then suffer the Regulus to flow upon a Cupel, till it sparkle with a Splendour, and afterwards make separation by Aqua fortis, and you shall find how much of every Metal is permixed with the other. There is no need to describe this separation at large, because it is every where known, and now very perspicuously taught by Lazarus Erker, so that it needs no repetition: I have here shewed, and proved, that by the Mediation of Nitre, Minerals may easily and speedily be examined. Therefore, this first Point being now proved and verified. I give thanks to God, who I trust, will further assist me.

Point II.

The Marchantes of Gold and Silver, being melted by the Mediation of this, by a singular Compoundum, hitherto unknown, do afford more Metal than by the common way.

That which is contained in this second point is not the least amongst my Lucriferos Secrets, but one of the best, which I have always reserved most secret within my own Breast. Many Men have often allured me with fair Speeches, to demonstrate it, but hitherto I have not been prevailed with to do it; not out of envy, or that my self alone should have that art in command, but because Faith is hardly any where to be found, it is now reputed an honour to promise many things, and perform few, but a disparagement to keep Promises; for I have often learned to my loss, that when through fair Words, and Promises oftentimes more than I required, I have been persuaded to Communicate this, or that Secret; as soon as it hath been out of my hands, I have found the quite contrary, for instead of a Reward, they have either derided me, or began to quarrel and contend, and in this manner, the Benefits which I have conferred upon them, have been recompensed with great Impiety.

The Process followeth.

Let there be a Furnace built of good Stone, which is able to endure the Fire, small or great, as you please, or according to the necessity and commodity of your Labour, in the following manner. First build an Arch about a Cubit high from the ground, the which cover and make level above with Iron Plates, or Stone that will hold the Fire, which shall be the foot of the Furnace, the length of which ought to exceed the breadth four times, that is, it ought to be four times as long as broad; by this Arch or foot of the Furnace there is yet another Furnace to be erected, whose breadth within must be half the breadth of the long Furnace, and about two Cubits high from the wind holes, into which the Wood is to be put, and in that Furnace, on that side which adjoineth to the melting Furnace, is to be a hole, through which the flame of the lighted Wood may strike upon the Hearths of the Furnace, and heat them; above, let there be an Iron Cover, to that end that when the wood is put in, the Furnace may be covered with it, and the flame may be forced to enter by the side into the Melting Furnace, and let the Melting Furnace, the Hearth being now perfect, be divided according to its length, into three Chambers or parts, so that every Chamber be square, that is, as long as broad, and between every Chamber let there be a Wall, with a hole in the lower part, that the flame may pass freely into the second and third Chamber, between which two let there be also the like Partition or Wall, with its hole at bottom, and let the third or last Chamber be close, saving its little door; let it have one only hole, by which the flame may pass out, also on one side of the Furnace, there is to be a hole in every Chamber, by which the Hearths may be discerned, and the Minerals and Metals taken out and put in, but the Chambers are not to exceed a Foot, or a Foot and a half, in height; in the upper part of which, let there be a Cover or Cap of good Earth, well luted and accommodated to it in such manner, as whensoever need shall require it may be

be removed with a pair of Tongues, and put on again. All these things being thus rightly prepared, let a Hearth be made in the first Chamber of good Earth, which can sustain the fire, let the Earth not be too fat, or too lean, but of a middle condition; in the second let there be a Test made of Argill, or Wood Ashes, but in the third Chamber, let there be a Hearth of good Earth, and in the Name of the Lord, let the fire be kindled in the side Furnace, that the Furnace with its Hearths may be thoroughly dried. Which being done, let the Ore of \odot or \circ being rightly prepared, be put into the last Chamber, that it may be made hot by degrees, and burn, but not melt, which may be hindered by the help of the little door, and the fire may be governed at a beck, according as it shall be necessary, and the Mineral requireth, or shall be able to suffer; the Minerals are sometimes to be stirred and turned well about in all parts, with an Iron Hook or Ladle, that they may be well Calcined. In the first Chamber let there be put so much Lead as the Hearth will hold, and when it moveth well, put upon it, spoonful after spoonful, of the Calcined Mineral in the last Chamber, stirring it with the Lead, and turning it with an Iron Ladle, and let it be so long upon it, till the Lead shall have attracted all the Metal, then the Scoriae are to be taken out with an Iron Ladle fit for this work, and to be kept by themselves; then again, more of the Calcined Mineral is to be put upon the Lead, and so the melting, turning, and taking out of the Scoriae, is to be continued as long as there is any of the Mineral at hand, or as much as is sufficient for the Hearth; and if during this labour, the Lead should be impregnated with a sufficient quantity of Gold or Silver, by the Mineral, (which may be perceived by taking a little out in a Spoon, and examining it upon a Cupel) then let Nitre be burned upon it, and let it be repeated two or threetimes, for so the Lead will be purified, grow white, and be rendered ductile, and passeth freely in the Test, without waste, which yet would not be if it had not been first depurated by Nitre; the Lead into which the Gold and Silver hath passed, is to be taken from the Hearth with a Ladle, and the Hearth made of Ashes, in the middle Chamber is to be filled with it, and the Bellows to be planted against it, to blow the Coals to the other side, and according to the common manner, the Lead is to be deduced into Salt, and the Cake of Gold or Silver is to be taken out, and afterwards to be thoroughly depurated in good Tels: And so in that Furnace may be performed three Labours, and more of the Gold and Silver is retained then by any other way, for blowing with Bellows wastes and destroys much of a Metal, and reduceth it by burning into Scoriae, which the sweet flame of wood doth not do; the Scoriae being taken out, suffer them to pass through a high Furnace, that if there be yet any Lead among them, it may be saved, to be used again in the former Labours, (to wit for attracting Gold and Silver, in the first Chamber, from the Minerals Calcined in the last) in this manner nothing will be lost, and not only more Gold and Silver obtained, but also without so great a charge of Coals as is used in the ordinary way. You should have always two of those Furnaces, or more (if you have a great quantity of the Mineral) in your Laboratory, that whilft you work in one, the other may be repaired, and when there is need, furnished with new Hearths.

This is the best and most profitable manner of melting the Ores of Gold, Silver, and Lead, containing in themselves Lute, and this without Coals,

and strong blowing, but by the flame of wood only. A. the Foot of the Furnace, B. C. D. the three Chambers, E. F. G. the three little doors of the Chambers, by which the Minerals and Metals are put in and taken out, H. the Cover or Cap of the Furnace, I. the Wind holes, or Registers by which the flame is governed, K. three holes in the Walls, or Partitions of the Chambers, through which the flame passeth, for the heating of the Chambers and Hearths, L. the Furnace on the side, into which is put dry wood, M. the Ash holes, N. its Cover or Stopper, O. the hole in the side, by which the flame is conveyed into the Chambers, P. the Iron Rods, with which the Minerals are turned, whilft they are in torrefying and the Scoriae are taken away from the Lead, Q. a Spoon or Ladle, by which the torrefied Mineral is put upon the flowing Lead, and the Lead which is impregnated with Gold and Silver, is removed from the first Melting Hearth to the other, R. the Tongs with which the Cakes of Gold and Silver, are taken from the second Chamber, S. the Furnace in which the Cakes of Gold and Silver are perfectly depurated, T. the Tels, V. the Cineritia. NB. That the Works coming from the first Hearth, may also be perfectly finished in the second Chamber, but it is better to do it on Tels fit for this purpose. [The figure of this Furnace is not printed in the Latin Copy, nor to be found among the other Originals.] NB. That what concerns this Point, is of greater moment than many will believe, because in our Country, there are found in many places rich Mines, abounding with Gold and Silver, which nevertheless are not rightly depurated by the common way of Melting, so that they afford so little, that it will not pay the charge of the Coals; and therefore it is yet unknown how much good Metal they contain, but it lies hid in obscurity, which nevertheless might be very well perfected in this manner, with great profit. I know Mines of this sort in various places, which I have found very poor, according to the common way of proving, but according to my Method very rich. What Treasures doth Hungary, Bohemia, Carinthia, Stiria, and Saltsburg possess in their Regions, unknown to them, and yet after an easy manner to be obtained? What Treasures hath Misnia, Thuringia, Brunswick, and Fichtelburgh, hid in them, and do no good? There is no Man of a sound mind, but may easily by labour and observation discern what a great difference there is between the common way of Melting, and mine, if he seriously consider the matter. A Mine of Lead doth not want an exquisite Art of melting, because it is of small price, nor will the loss be great, if some of it be burnt in melting, or remain in the Earth. In like manner the vulgar way of melting Copper, by high Furnaces, and strong blowing, is sufficient. But the Mines of Gold and Silver, are not to be treated so grossly, but after a more subtle and profitable manner, that nothing of them may be lost, but may be of greater use and profit, than hitherto hath been done. For the Mineral of Gold, although it is not in some great Rocky Mountains, yet for the most part, it is found in Flints, and Stones containing Iron, or in any crude Mineral in which oftentimes Antimony, red Sulphur, and Arsenick, is mixed together with the Minera of Gold. As may be seen in Carinthia and its Confines. But how should such a Mine, if melted with Coals after the common manner, yield its fruit without loss; for whether it be torrefied, or not, if it be cast upon Coals, and agitated with the strong blast of Bellows, that which is immature flieth away, carrying with it

Y
self

felt that which is good; that which remaineth passeth into Scoria. For although it should be mixed with Lead, the Minera of Lead, or Salt of Lead, yet they would not remain conjoin'd, but the Lead is easily melted, floweth, and leaveth the Ore, which by strong blowing is reduced into Scoria, retaining much gold, which is lost, as well as the other which flew away in smok, and at the best but a very little saved, which hath entred the Lead.

NB. But, in my way, it is necessary that the Ore should be broken and subdued, and thereby forced to yield its Gold, if it be well incorporated with the lead, and the volatile is preferred with the fixt; add, that the flame lightly striking or playing upon the matter, destroyeth nothing, and by this way, there is no metal lost. That the thing is so, I will prove by a certain similitude or comparison; make proof in what manner you please, of gold or silver Ore, and observe how much good metal that contains, afterwards prove the same in a great quantity upon Coals, and you shall find much less in that, than in your small proof; when nevertheless the contrary ought to be, because a great fire hath a greater force of acting upon the Ore, than a small one; and this is the only cause, because a great quantity requires a more violent fire than a small one; which is averfe to all crude and volatile Minerals. But by my way, there is found as much, if not more, in a large quantity, as in a small proof. Therefore I will here shew yet by another manner of probation, that by the common and usual way of melting Minerals, all the metal cannot be obtained, and sometimes scarcely half or a third part. To an hundred pounds of the Mineral, reduced into a small powder, add 8, 12, 16, or 18 pound of granulated Lead, or as much as the Mineral shall need, mix the Mineral and the powder of Lead, which with a little Spoon are to be committed to a fiery hot Cupel, placed under a Cineritium or Muffle, give a strong heat, and the Lead will attract all the metal from the Ore, and cast out the Scoria or dross which will rest upon the moving Lead; which being done, you must have at hand a hot Iron Rod, with which you may move and stir the Scoria every way well, up and down upon the Lead, to the end, that if any good metal should as yet remain in them, the Lead by that moving may lay hold on it, and catch it to it self; afterwards suffer the Scoria for a little while to heat and burn upon the Lead, that it may flow well; then let the heat of the fire somewhat abate, and the Scoria will become thicker and fit to be drawn out with an Iron rod, which is to be brood at the point, round, and sharp, that the Scoria may be every where clean and wholly drawn away from the Cupel, which are diligently to be kept, that nothing be lost, and left the future essay should be false. This being done, drive the Lead remaining in the Cupel with an indifferent heat, then there will remain the gold or silver, which that hundred pounds of Ore did contain; that grain or portion is to be taken out and reserved. NB. That whilst you are proving the Mineral, you may also impose another Cupel, of the same magnitude and weight, and as much Lead upon it as was mixed with the mineral, without it, suffer it to flow alone by it self. The grain or portion which comes to be obtained from the mineral upon the other Cupel, will be what that mineral did contain. Afterwards the two Cupels are to be weighed apart, and as much as this, in which the Ore was wrought, shall be heavier than that in which only the Lead flowed, so much of Lead or Copper that hundred

weight of Oredid contain; and so much gold or silver as the grain or portion remaining in the Cupel weigheth, and so much Scoria or dross as was removed and drawn out with the Iron Rod.

NB. Some man may object, That the Scoria cannot be so accurately and purely removed from the Cupel, but somewhat will be left behind. I answer, That although the removing of the Scoria should not be exactly done, which notwithstanding may be done, if diligence be used, because the Scoria to be removed are not pure Scoria, but as yet contain somewhat of the Lead, which may be easily as heavy, yea, heavier than the Scoria remaining in the Cupel, and which cannot be removed, nevertheless the proof will be just and good. But if by a melting made in a great quantity, you shall find as much O or S , or Z , (NB. that Iron and Tin cannot be proved in this manner) as the small proof demonstrateth, [I think it should be, if you shall not find S &c. and the character V should be L .] believe that you have not rightly proceeded, and that that which is lost is gone in fume, or by combustion, into Scoria. Seeing therefore that this proof is of a great weight, and accordingly is to be made by a great melting Work, I will declare that labour more copiously. For example sake, I take two Cupels, accomodated to one and the same form, I weigh them singly, if one be heavier than the other, then with a knife I pare or scrape it a little above or below, so that they may be of equal weight, afterwards I put them side by side conjunctly, or one before, and the other behind, under a Cineritium; when they are duly hot, I put upon one the Mineral, mixed with the granulated Lead, and upon the other, the granulated Lead only; then I suffer them to flow together, seasonably abstracting the Scoria from that where the Mineral is; then I cause both to cease. Now supposing that I have added to the Hundred weight of Ore, 1200 pounds of Lead, and also wrought 1200 pounds of Lead in the other Cupel alone, and each Cupel to have weighed three Lothones, according to the weight of the City, and that I find in that Cupel in which the Mineral was wrought, a portion of Gold or Silver, weighing (according to the probatory weight) nine Lothones, and in the other Cupel, a portion of Silver weighing three Lothones, which the 1200 pounds of Lead yielded: But in regard that I also added to the Mineral 1200 pounds of Lead, which also have yielded three Lothones, which I subtract from the nine Lothones, and there remaineth six Lothones of Gold and Silver, which the Hundred weight of Ore hath yielded. NB. If you would know whether the Mineral also containeth Lead and Copper, and how much, then I weigh both the Cupels apart, observing how much that in which the Mineral was wrought is heavier than that in which the Lead was wrought alone, and so much Lead or Copper I may affirm to have been, together with the Gold and Silver, in that Mineral; suppose the Cupel in which the Mineral was wrought to weigh 30 pounds, according to the probatory weight, more than that in which the Lead was agitated alone, then I am sure that there was so much Lead or Copper in that Mineral, together with the gold and silver (for iron and tin do not enter the Cupel, but pass into Scoria, but the O and S remain on the Cupel) and the remaining weight, to wit, seventy pounds. I find all in Scoria, for a little flieeth away in fume: in this manner it may be observed what quantity a hundred pounds of the Ore of Lead or Cop-

per

per containeth of good Metal, and whether it have any gold or silver or not; according to which a computation may be made, whether it will pay the Charge in a great quantity, or not, and what gain may be had from it. This is a most desirable proof, invented for the use of gold and silver, which are necessarily by this way yielded in great quantity; if it happen otherwise, the error is to be ascribed to the working; for the Mines of copper and lead, this proof doth not succeed in great quantity, although by it may be certainly known how much of either of them is contained in an hundred weight of Ore, for both these metals are easily burnt by the fire, and reduced into Scoria, which happeneth not to gold and silver, if they be rightly handled; only here it is made appear what quantity of Saturn or Venus is contained in an hundred pound of Ore of Saturn or Venus, which is impossible to extort in great quantity, by the common and known way: for soft and sulphureous metals of this sort lose much, because part is driven away by strong blowing; another part is reduced into Scoria: but by my way nothing is lost thus, and but very little remaineth behind. I know yet another way, and that better too, of perfecting the Minerals of gold, silver, copper, and lead, with a certain compendious profit; but seeing that in my *Miraculum Mundi* I have made no mention of a Work of this sort, I shall here say nothing of it. I also know a way of extracting from very poor Copper Mines, all the Copper contained in them, without great labour and cost; which Mines are every where in great quantity to be found, but are not sufficient to pay the Charge of melting in the common way; but this my secret way will yield great profit, for scarcely one pound of Copper will remain behind, and be lost in an hundred pounds of Scoria.

Point III.

The volatile and immature Marcassites of Sol and Luna are fixed in the space of three hours, so that they render a double quantity of Metal, to what they could have done before fixation, &c.

This fixation is a singular secret, in perfecting Antimonial and Arsenical Minerals, which are wholly crude, which commonly yield a little Gold: For when Minerals contain much Antimony, Arsenick, or Orpiment, and are torrefied in the common way, then the Arsenick or Orpiment destroyeth much of the Gold, carrying it away in fume; but if they be melted without a foregoing torrefaction, then the blowing forceth away more; if from a Mineral of this sort, the yellow or red Sulphur, Arsenick, or other rapacious substances, be diminished or consumed, by closing it in Earthen Vessels, as many do, then by this means the Mineral is burnt, loseth its flux and ingreth into Lead, so that much of the gold is destroyed, and reduced into Scoria; to prevent which, this following way is the best: With one part of the mineral mix half a part of Nitre, let it be kindled with a Coal, and fixed, then the Nitre burneth away the greatest part of the rapacious sulphur, and fixeth the rest, so that there is but little of the Gold lost, and it keepeth its flux and ingreth into Lead; if it be put into the foregoing Furnace, and there wrought, it yieldeth all the gold and silver which it containeth, and nothing is lost. Here some may object, and say, That although in

this manner, more gold may be obtained; yet the Nitre maketh the work dear, which I indeed confess to be true, if the Nitre be bought at a dear rate, but if by an artificial Culture, it may always be had at hand, it will cost little, and this torrefaction and fixation, may be perfected with great profit.

Point IV.

All Gold and Silver not purely melted from its Marcassite, may be swiftly purged from every Admittament, the silver separated from the Gold, by fusion only, with a small labour and cost, but in great weight.

This way of purifying O and S from all admittaments, and in an easie manner, is a thing most profitable, and an Art highly necessary to be known by those who handle metals; for it is sooner done, than by the way of cupulating or blowing off with Lead, but is dearer, by reason of the Nitre; nevertheless, the labour is easie and pleasant, and it is done in this manner: Let a Crucible of impure gold or silver be placed in such a Furnace as is described and depicted in the Fourth Part of our Furnaces, let it be melted, then cast in some Regulus of Antimony, more or less, according to the greater or lesser impurity of the Gold, and according as it hath more or less need of cleansing for its purification. When all shall flow and be clear in the Crucible, cast into the Crucible upon the metal, at several times, about so much Nitre, as there is of addition to the Gold; let it flow, then the Nitre attracteth the Regulus of Antimony, together with the impurity contained in the Gold, which passeth into Scoria. And this Process doth not serve only for impure Sol and Luna, but also for such Sol and Luna which contain Copper, Iron, Lead, Tin, Chalcitis, Aurichalcum, and other metallic and mineral matters, Tin especially, which is difficult to be separated from Sol and Luna by Lead, without loss. But in this manner it may be quickly and easie done. But that my meaning may be the more rightly understood and the less error be committed in working, I will here instructe the Process clearly, and in express words. Suppose to 10 lb. of gold or silver, there be two lothones of Copper, and three lothones of Tin (a lothone is half an ounce) which I would separate, and if it be done by the known way of blowing off with Lead, there will need at the least thirty or forty lothones of Lead, and nevertheless one part of the Sol or Luna will be lost; but by my way to two lothones of Copper, and three lothones of Tin, adjoin five lothones of Regulus of Antimony, then abstract the Regulus, together with the addition of Copper and Tin, by the mediation of Nitre, which may be done in the Crucible in the space of one hour, which by torrefaction and agitation in the common way, could scarcely have been done in 10 or 12 hours; besides nothing of the Admittaments is lost, all remaineth in the Scoria, from which, afterwards, as well the V as the Z and Regulus of Antimony may be recovered, to wit, if the Scoria, in which the V , Z , and Regulus of Antimony is, be put into a Crucible, a live Coal cast in, and then the Crucible covered with a tyle, let them flow a quarter of an hour, pour all out, and you shall find in the bottom of the Cone a little Regulus, in which will be the remaining Sol or Luna, which the Scoria did prey upon; let them be deparated on a Cupel, if

Y z they

they be not already pure enough: The Scoria being again melted, cast in a live Coal, suffer all to flow well together, again there will fall another Regulus from the Copper, the γ & δ remaineth, and neither by Coals nor any other art, can be brought into Regulus; but if these Scoria be driven through a probatory Furnace, then they also yield the Tin again, and that better than it was before. This Process is not only pleasant, artificial, swift and easie, by which gold and silver is quickly and purely separated from all addition, but there is also hidden in it a great mystery: But because I have only propos'd to prove those things to be true and natural, of which I have made mention in my *Miraculum Mundi*, let what I have now said suffice, and what is here desir'd may be found perspicuously and satisfactorily declared in the following Processes.

Point V.

Gold and Silver are easily drawn out of Old Tin or Pewter Vessels, the Tin being preferred almost in the same weight, and being made better than it was before, may serve for the same uses to which it is wont to be put.

This Process also is very well performed by the mediation of Nitre, viz. in this manner. Let the Tin, in which is \odot or δ , be reduced into Alhes, even as Lead is wont to be prepared, for the working of Minerals; and let there be mixed with it as much powder of Nitre, let the mixture be put in a strong Pot which will endure the fire, upon which put subliming Pots, let the mixture be kindled in the lower Pot (which is under the Subliming Pots, and must have a little hole in the side for that purpose) with an Iron Rod, red hot, then the Mafis beginneth to burn, and sendeth many Flowers into the Subliming Pots, the Tin and Salt-peter remaining in the Pot, take out, and melt in a Crucible, if there be much Lead, then that melteth together with the \odot and δ , to the bottom of the Crucible, but the Tin with the Nitre passeth into Scoria, which if the melted Mafis be poured out into a Cone, they are separated from the Regulus of Lead, and after cooling may be taken out, which Regulus of Lead, by the addition of other Lead, may again be wrought, and in a strong Crucible be reduced into Scoria with Nitre; then there will remain a little Regulus of Lead, which containeth the \odot and δ , which was in the γ . The first and last Scoria may be reduced by a strong blast in a Probatory Furnace, then the Tin will be again obtained, better, harder, and whiter than it was before; the reason is, because the Nitre hath consumed part of the combustible Sulphur, and also separated the Lead. Although this Process is not done with any great profit, yet nevertheless it shews the possibility; but he that knoweth how to handle the matter, will suffer no loss, for those sublimed Flowers are of greater worth than Salt-peter and Tin, because they may be prepared into a good Medicine; they are also very available in those curious red Colours for Cloth [Scarlet, or Bow-dye] exalting them in a wonderful manner, and firmly abiding in the Cloth, shining, and giving it a fiery ground.

Point VI.

Much Silver may be separated from Bismuth, the Bismuth preferred, a Secret agreeing to those places which abound with that Mineral.

This Secret is not of so little weight as perhaps it will seem to some; for no Man even to this day hath proved this in the matter itself and with effect, yet seeing that it may easily be done, viz. in this manner, melt Chalcitis in a Crucible, and cast upon it successively so much Nitre, until all the Chalcitis shall pass into Scoria, or green Glafs, pour out the Mafis into a Cone, then the Silver will settle to the bottom in form of a Regulus, which was contained in the Chalcitis, then put the Scoria of the Chalcitis into a Crucible and melt them well for the space of an hour, so all the Chalcites will be revived, rendered Corporeal, and a little will be lost. He therefore that can make the Salt-peter himself, and needs not to buy it at a dear rate, will hence reap great profit, otherwise not; however it proveth that the Salt of the Earth can perform what is here attributed to it.

Point VII.

From old Copper much Silver is separated, the Copper preserved unhurt, by which Artificer Regions abounding with this Metal, may reap no small profit.

That this extraction of Silver from Copper by means of the Salt of the Earth, may be verified, you are to proceed in this manner: Mix with the Copper its own weight of Regulus of Antimony, then melt both together, upon which cast so much Salt-Nitre successively or at times, until it turn the Copper together with the Regulus of Antimony into green Scoria, then make the fire stronger, and cause these Scoria to flow like water, and emit a Regulus, which although it be not sufficiently pure, it may be depurated upon a Cupel with a little Lead, and it yieldeth the Silver which the Copper contained. NB. This process is most true, and will never deceive any Man, but I do not say that he shall obtain Riches by this means, but only prove to be true, what I have ascribed to it in my *Miraculum Mundi*. NB. But he that knoweth how to fix the Scoria, that is the Copper and Regulus of Antimony with Salt, and to melt them into Artificial Stones, or Enamel, so that nothing be lost, he shall be sure not to undergo the Labour in vain; otherwise he may cast in a live Coal upon the Scoria, from which the Silver is separated, when they are in Flux, and let them flow half an hour, then it leaveth the Regulus of Antimony together with the Copper, which the Nitre hath reduced into Scoria, and afterwards another Regulus, to be applied to use, which if all things be well handled, from both, viz. from the Regulus of Antimony and Copper, (after their Edulcoration) a green colour for Painting may be extracted, and so the Labours will be compensated, and the gain will be so much the greater.

Point

Point VIII.

Every common Silver may in the space of a few hours be exalted into the nature of Gold.

This Gradation of Silver is performed by the help of a certain Mineral Sulphur, to wit, of δ and Antimony, in this manner. Adjoin to δ as much Regulus Martis, and again let it be separated from it by Nitre, which labour is performed in the space of an hour, to the remaining Silver adjoin again as much Regulus, which is again to be abstracted; and let this labour be reiterated five, six, eight, or ten times, which may be done in one day, afterwards let the δ be dissolved in Aqua-fortis, then the Gold, which the Nitre by the help of the δ hath obtained from the Regulus, will remain in the bottom, which is to be edulcorated, and corporified with Borax, the Gold will be good in an excellent degree, but the value thereof is scarce enough to pay for the Regulus, and Nitre. But he that knoweth how to make his own Nitre, or can obtain it without price, may reap a considerable profit: Especially if he know how to transmute the detracted Scoria into further use, which is not here sought, but is only proved that δ may be exalted into \odot by the help of Regulus Antimonij Martialis.

Point IX.

Gold may be separated by fusion from every addition of Copper, Tin, Iron, Lead, Orpiment, Antimony, Arsenick, or the like, without Cupels, each being kept apart.

This manner of separating of Metals, from one another, and of depurating \odot without Cupels, is a most pleasing, fair, and profitable secret, by which in the separation of Metals, much time and expence is saved, and no detriment to be feared, which no man, even to this day could effect, myself excepted: You are to proceed in this manner. First, the mixt Metal, whether it consist of few or many, is to be granulated, the grains are to be conjoined with a fourth part of powdered Sulphur, somewhat moistened, and to be set on fire in a Crucible luted according to art, which being done, the cover of the Crucible is to be taken off, and the enkindled Metal to be covered with the fourth part of its weight of Antimony NB. That if there be much δ , γ , or γ in the mixture, then the more Antimony is to be adjoined, that it may draw to it self the imperfect Metals. Therefore when the Mafis flows with the Antimony, inject a little well purified Nitre, dried and pulverized, and when it flows well, the Mafis is to be poured out into a Cone, and the Regulus, if there be any, to be shaken out, which will contain the greatest part of the \odot which was in that Mafis. NB. If there shall be no Regulus, that is a sign that there was not Nitre enough to suffice the crudity, which is to be remedied thus: Return the Mafis into the Crucible, and permit it to flow, which being done, throw in as much filings of Iron, as you judge there is Gold in the Mafis, and mix it with the Mafis with a red hot Iron, cover the Crucible, and give a melting fire for a quarter of an hour, pour it into a Cone, when it is cold separate the Regulus from the Scoria, which will be about the same

weight with the filings of Iron, which you used in the precipitation, purifie the Regulus in a small new Crucible, by the injection of Nitre, if it yieldeth Gold without Silver, then it is a sign there is Gold yet in the Mafis, therefore it is necessary to flux the Mafis again, and precipitate with Iron, if the Regulus be yet golden, then it is to be depurated apart by Nitre, and to be kept; but if it hath more δ than \odot , it is a sign that all the Gold is precipitated, afterwards suffer the Mafis to flow again, and inject as much filings of Iron, stirring them well with the Mafis, with a red hot iron, permit them to flow well together, then it rendereth as much Regulus of Silver, as there was Iron put in, afterwards also the δ will be precipitated, and last of all, the Scoria are again to be fluxed well being mixed with Nitre, that it may appear whether there be yet any Metal in them. The Regulus of δ is also depurated in the same manner as the Regulus of \odot , Venus, γ , and other Additions are melted by bellows, so that nothing is lost. This separation of \odot and δ from the viler Metals, by melting, hath been long sought by many, but found by few. Lazarus Erker, in his Writings hath taught by what means \odot may be separated from δ by fusion, but that separation is unlike to this which I have mentioned, because here it is not only shewed how \odot may be separated from δ , but also from other Metals.

Point X.

Every imperfect Metal, without the mixture of other Metals, may be ripened by this Secret alone in the fire, in an hours space, so that it will yield Gold and Silver, but without profit; an indication that the viler Metals, may by Art be promoted into the Nature of the perfect, to the great profit of Metallurgists.

This is done only by the power and virtue of Salt Nitre, whereby the Metal is penetrated, depurated, and fixed into a more perfect, or exalted in maturity, but cannot be performed with much profit in a great quantity, but it proveth that Nitre hath a virtue of transmuting every imperfect Metal into perfect, which is done in this manner. Let the Metal be laminated into very thin Plates, whether it be δ , γ , or γ , δ is indeed corrected by this way, but melteth not in any Crucible, and γ also is transmuted into other forms, but not into \odot or δ . Make in a Crucible *stratum super stratum* with Saw-dust, Sulphur, and Nitre, as also with the laminated Metal, of which mention is made in the second part of Furnaces; kindle the mixture at the top, then a great and sudden flaming fire will arise, by which the laminated metal is penetrated, partly fixed, and amended, so that if it be wrought on a Cupel with Lead, it leaveth some δ or \odot , which nevertheless before, would have yielded neither, whence it is manifest, that the flame excited by the Nitre hath corrected the Metal. NB. That γ is first to be coagulated, and Chalcitis to be pulverized, before they be commixed with the sudden fire of Nitre, and enkindled. In these Labours, although they may be effected of small moment, a great Mystery is hidden, which nevertheless will be valued by no man, although it should be discovered in plain and open words, because the process is mean, costeth little, and may be performed in the space of a quarter of an hour.

Z z

Point

Point XI.

Metals also grow up in this subject, in the form of Vegetables, before the eye, in the space of two or three hours, to the length of a Finger, or hands breadth, into many branches and twigs, without Fruit indeed, but is a demonstration that even Metals themselves do germinate in it like Vegetables.

This Point is mentioned only for this end, to shew that Nitre hath a power of making Metals to grow after the manner of Vegetables. Which thing the Liquor of Flints also performeth, of which mention is made in the Second Part of our Furnaces; but the Liquor of fixed Nitre is better; which is prepared by fixing it with powder of Coals and Flints, which is also taught in the Second Part of our Furnaces, so that there is no need here to repeat it: If therefore the metals being prepared in little bits, be put into this liquor, they will grow and encrease after the manner of Herbs, and so quickly, that in a few hours space they will grow to the height of a hands breadth, which is very delightful to the eye, and worthy of a singular meditation, whence I judge an encrease should proceed. Certainly many things might be written concerning this matter, but because in this place I have promised no more, but to verify what I have attributed to the salt of the earth in my *Miraculum Mundi*; let what is said suffice.

Point XII.

There is every augmentation or encrease of the Perfect Metals, very careful, by the Imperfect, answering to the germination or growth of Vegetables, &c.

As for this augmentation, it is done by a way far distant from the foregoing, viz. in this *Sol* and *Luna* are joined with Lead, Tin, and Venus, or with Tin alone, where it is to be left for a convenient time, then the *Sol* attracteth from the Lead or other imperfect metals, a golden Essence, is encreased and made heavier. The Process is this: Take one lothone (or half an ounce) of Gold, eight or ten lothones (which is four or five ounces) of Lead, let them be melted together; if you please, you may add Tin or Copper; put the Crucible, together with the Lead or other imperfect metals, into a strong Crucible, give a temperate and constant Fire, that the Lead with the Gold may only flow, but not be white hot; cast into the Crucible upon it half an ounce of the best Nitre, cover the Crucible well, that no Coals fall in, and keep it in a constant easie fire, then in such a time the Lead, together with the other metals, which were mixed with it, will be turned into Glass, but the Gold being pure, is separated from the Glass by it self, and will adhere to the bottom of the Crucible, which when the Crucible is broken, take out and weigh, and you shall find your Gold encreased, and that it hath taken weight from the other metals. Although this labour affords no profit, yet it sheweth how the nature of metals are to be known. There is yet another way of trying this thing, thus, viz. Take half an ounce of Gold, join with it 5 or 6 ounces of Lead, and drive away the Lead again upon a good Telf, till the Gold sparkle and shine, and you shall find

your Gold to be made much heavier than it was before, which weight it hath drawn from the Lead only.

Point XIII.

By the mediation of this from all Imperfect Metals and Minerals, yielding nothing in the usual Examen of Cupels, Gold and Silver is produced in a manifold manner, being an Argument that the Imperfect Metals have somewhat of the Perfect reconded in them, when they are inverted, and shew themselves to our sight.

If we would obtain Gold and Silver from the Imperfect Metals, by the help of Nitre, an equal weight of Regulus of Antimony is to be added to them, that they may be rendered frangible, and fit to be pulverized, so that they may be commixed and fixed with Nitre in this manner: Take an ounce, or an ounce and a half of Copper, Lead, Tin, or Chalcitis, melt it with as much Regulus of Antimony; pulverize the mixture, and mix with it its equal weight of the best Nitre, put the mixture into a crucible, kinde it with a live coal, then the mixture will be reduced by the Nitre into Scoria, which must be melted by a very strong fire, in a Wind Furnace, then the Metal will pass into a Regulus, but the Regulus will remain in the Scoria, which by the casting in of a live coal may be precipitated and brought to Regulus again: but weigh the metallick Regulus according to the Hundred weight, and drive it (if it be Lead) upon a Telf, then you shall find it to contain gold and silver, which the metal had not before. If the metal be Copper or Chalcitis, a due proportion of Lead is to be added to it, that it may be wrought upon a cupel, then it leaveth gold and silver, which without this Operation it would not have done. This Work may also be effected by another way, viz. Mix 5 or 2 with its own weight of Regulus of Antimony, suffer it to flow well with the metal in a melting Furnace, inject successively by a little at a time, so much Nitre as both the Metal and the Regulus did weigh, then let the Regulus and the Metal be fired by the Nitre, that some of the superfluous sulphur may be burnt and the mixture reduced to Scoria, afterwards give a strong fire, that the Scoria may be well melted, then the Metal will be separated from the Regulus, which may be tested, and the correction of the metal, made by the benefit of the Nitre, will be manifest.

As for these 13 Metallick Labours, they are in themselves very good, and profitable to be known by every one handling Metals, some of which, if they be accurately managed, and by a skilful Artift, will afford great Gain, and they are all done by the help of the Salt of the Earth. But I will not deny, but that those Labours may also be performed by another way, which needeth no Nitre. But I do not now intend to say any thing of that, but only to prove that all those Secrets and Transmutations may be effectually performed by the contemptible salt of the Earth.

In

In Mechanicks.

Point I.

They who Engrave or Etch upon Copper, may of this subject prepare a good corrosive Water, by which (the Copper Plates being first smeared over with a Covering fit to defend them, and what Images or Lines they please, drawn upon them, with a stile or stift) by an easie and expeditious manner, they will be eroded or eaten, which otherwise would require a long time to be engraven.

That a corrosive and graduating *Aqua-fortis* may be prepared of Nitre by distillation, needs no proof, the way of making it being every where known, as a thing common, only here it is proved, that this shortening of the Engraver's Work may be performed by the salt of the Earth.

Point II.

Painters by the help of this, may prepare for themselves most excellent Colours, as Ultra-Marine, blue Smalt, fine red or Scarlet Lacca, Venice Ceruse, and others necessary for their Uses, which otherwise they must have from far, as Italy, Holland, France, &c. and at a dear rate.

That excellent colours for Painting, may be made by the salt of the Earth. I will thus prove: Blue Smalt is otherwise prepared of flowing Sand, Chalcitis, and Potters-ashes: But if instead of those ashes, you take the fixed salt of the Earth, the smalt will not be only rendered more open, loose, and fine, but also purer, by reason the salt of the earth is purer than those ashes. Lacca for the most part is made of Flocks shorn from crimson or scarlet cloth in the dressing, and by a singular *lixivium* (instead of which Nitre may be taken) the colour is extracted, which is to be precipitated,edulcorated, and dried upon clean Boards in the sun, or by a stove. Verdigrase and Ceruse are commonly prepared by the help of Vinegar, in Iron Vessels put in Horse-dung; but if the Copper or Lead be dissolved in spirit of Nitre, and the Copper precipitated by a *lixivium* of salt of Tartar, but the Lead by salt water, thenedulcorated and dried, the Copper will exhibit a green colour, which may be used in all Paintings, and will not corrode and destroy other colours, as the common Verdigrase is wont to do: And the Ceruse is rendered more delicate white, and pure than that which is prepared by Vinegar, with which oftentimes much Chalk is mixed to augment it, and is not so conducible to Painting, nor to the shops, as that which is made per se, without any mixture.

Point III.

Engravers and Statuaries may so harden their Tools, that they may hold their points long, if they be to cut stones.

That Iron may be hardened by Cementation with Salts, so that it may serve instead of Steel, is now openly known; but the iron or steel is to be kept in

cementation as long as need shall be, not with common salt alone, but mixed with the powder of coals and salt of ashes; then the Iron grows as hard as steel, but steel is rendered harder than it was before.

Point IV.

Embroiderers may put any durable Colour they please upon the Silk with which they work.

It may be known, that Nitre, as being a depurated salt, will easily induce colours, and constantly preserve them, yea, exalt them, which many know, they especially who dye cloth with rich grain colours, as Scarlet, Crimfon, &c. when they add the spirit of Nitre in the boiling, to aluminate it, (as the Dyers call it) the colour is wonderfully exalted, and made much more fiery, so that it may be sold dearer than common Crimfon or Scarlet. This spirit of Nitre also tingeth Ashes, Nails, or Hoofs, Quills, or Feathers, with a golden colour, but if the Nitre be fixed by calcination, then it also equally exalteth, but not into a red, but a Purple; Dyers use Potters ashes for these Works, but fixed Nitre is much purer, and rendereth the Work more beautiful than those impure ashes.

Point V.

They who Paint Glass, by an easie Work, may thence prepare all Colours or Enamels for Glass, so that there will be no need to have them from Venice.

The Painters of Glass sometimes complain, that their fusory Glass or Enamel will not readily flow, and that the Glass which they are to colour is melted first; the Salt of the Earth being fixed, redieth this, if the colouring Glass be mixed with it in a due proportion, and again melted, for by this means they will be rendered fluxible at pleasure.

Point VI.

They who work in Wax, by the benefit of this, may whiten it exceedingly, and colour it as they please.

That Salts with Water do whiten yellow Wax, being melted thin, and exposed to the Air, and often sprinkled with the Salt Water, is sufficiently known, and wants no proof, but not better than salt-Nitre it self.

Point VII.

Printers also may add this subject to their Ink, which will cause it to adhere very firmly to the Paper, and render the Letters very fair.

That fixed Salts will readily conjoin Ink with Water, is not unknown, and none better than fixed Nitre, which also excelleth all sharp *lixiviums*, having a power of cleansing Lead, Tin, Copper, or other Vessels.

Point VIII.

It is convenient for Clock-makers, or Watch-makers, if a Water be distilled from it, which soldereth Iron or Steel, without fire, if a drop of that Aqua-fortis be dropped upon it, whence the Iron growing hot, it presently waxeth soft, as if it had been soldered in the Fire by the help of Copper.

IF an Aqua-fortis be distilled from Nitre and calcined Vitriol (NB. that there must be no Water or Phlegm in the Spirit) and two little pieces of Iron be melted with it, (between which there must be little Filings of Iron) then the Iron groweth hot by the Aqua-fortis, which acteth upon it, and the one will be joined to the other by melting, as if it had been done by the Fire. But he that will use that waters, must know how to prepare it himself, because such is no where to be found to sell.

Point IX.

All Smiths may by it harden their Files, and other Iron Tools, as durable, as if they had been made of the hardest Steel.

Fixed Salts being mixed with ashes and powder of coals or sand, after that they have remained 24 hours in a close Fire, do harden iron like steel; as is proved before in the third point.

Point X.

Penwriters may harden their Tin or Penner, and give to it an elegant whiteness, so that it will resemble Silver both in colour and sound; neither will it easily tarnish, and by reason of its hardness, will last longer than common Penner.

IF Tin be often melted, and extinguished in a Lixivium of fixt Nitre, it is made harder than it was before; but if it be put to Nitre in Flux, and sufficed to melt in it; then also it will be more hard. NB. But if the Tin be reduced into Scoria by Nitre, and the Scoria again reduced, it will be rendered harder and fairer, than by the two former ways.

Point XI, XII, XIII.

Cabinet-makers may strike an excellent Black upon Pear-tree, Cherry-tree, Box, Walnut-tree, and other hard Woods, which may be used for curious Works instead of Ebony. Skimmers or Furriers may dye their Ermins, Foxskins, Wolf-skins, and the like Furs, with a Scarlet, crimson, or deep black colour, far exceeding the natural. In like manner Feather-dyers may swiftly give any lasting colour to their Plumes.

IF an Aqua fortis be distilled from Nitre and Vitriol, and a little silver dissolved in it, and Rain water poured thereon (for the weakening of the Aqua-fortis) then not only all hard Woods, are blacked by it, so that they represent Ebony, but also skins and feathers are made black as a coal,

a ground being first laid upon the feathers, skins, or woods, that the Colours may remain and endure firm. Therefore the 11, 12, and 13 points are thus verified together.

Point XIV.

Taylor's may take out Spots or Stains, out of Woolen, Linen, or silk Garments, and restore their Beauty.

OF fixed Nitre is made a Soap, so subtle and pure, that by it all Spots may be taken out of Garments.

Point XV.

If Shoemakers put old Iron to this subject, they may thereby adorn their Leather with an excellent Black.

IF Nitre be dissolved in Vinegar, and old iron lie some time in it, it will make an Ink with which Hides may be blacked with an excellent Black. But there is no need of Nitre for this use, for if Iron be put to Aqua Calcis, it effecteth the same thing; only mention is made of this in *Alchymicum Secretum*, that it might be manifest, that this Universal Subject may be of use, to all and singular Artificers.

Point XVI.

Weavers may render their Linen Threads so fine and soft, that they will emulate silk.

ALL Men know that the boiling of Thread in a strong Lixivium renders it soft and delicate, but seeing that fixed Nitre is better than a strong Lixivium, it will also perform this work better than any common Lixivium.

Point XVII.

Dyers by this may give so firm and unchangeable a ground, to their Cloth, that the superinduced Colours shall not be corrupted, or spoiled by any Wine, Vinegar, Urine, Pickles, Air, or Sun.

IF the spirit of Nitre be put into the first boiling with the Alum and Tartar, for the aluminating the Cloths, it will give a permanent ground, as is already proved in the fourth point.

Point XVIII.

Potters may thence prepare a Glassy Colour, not unlike to the Indian Porcellane, of which Vessels may be made having the aspect of Gold, Silver, or Copper, a singular Ornament for Noblemens Tables, hitherto unknown to the World.

THE Glazing of Earthen Vessels, that they may appear like a natural Metal, is an egregious art, but it doth not always succeed, for the Colours are easily burnt and destroyed by too much heat, so that no Metallic Vitrification can be discerned. Vessels there-

therefore, ought to be glazed not in a common Potters Furnace, but in a peculiar Furnace, that the fire may be oftner observed. If the Vitrification be to represent Gold, or Silver, or Copper, then Gold, and Silver, and Copper is also to be taken in this manner: Take one part of Gold and Silver, or Copper, Regulus and the Metal, pulverise them in an Iron Mortar, and mix them with an equal portion of Nitre, suffer the mixture to be fixed in a Crucible, with which mixture the earthen vessel is to be rubbed over or gilded, afterwards to be committed to a Furnace fit for this purpose; if you proceed right, you will obtain a very beautiful Vitrification, as if the Vessel was gilt with Gold, Silver, or Copper, which will not vanish or decay, and will far exceed in beauty and splendour the Vessels which are gilt with those Metals, for those in process of time lose their splendour, but these do not as long as the least bit remains.

Point XIX, and XX.

Soldiers, Merchants, Traucellers, Carriers, Fishermen, and others, who are much in the open Air, may of this prepare a Varnish in which they may dip linen Cloth, which will not permit either Air or Water to pass through it, with which they may defend their Boots or Cloths, so that they may travel dry in the rain. They who make Tapestry, may restore their faint and faded Colours, so that they shall be strong and beautiful.

HERE mention is made of a certain mixture in which if Linen Cloth be dipped and dried will not permit water to pass through, and it is done in this manner. There is nothing wanting in Linseed Oyl, but that the humidity be taken from it, which always hindereth its drying; now to effect that, there is no better way, than to boil the Linseed Oyl gently and gradually with the Flowers of Lapis Calaminaris or Saturn, (which are sublimed by Nitre) so long till the Oyl be tenacious, and growth hard enough for this use. NB. That a Linen Cloth immerged in this mixture, and shining Talk being finely laid upon it, may be coloured of any colour, which will very strongly adhere to it, and may serve for the making of Tapestry. Therefore in this manner the nineteenth and twentieth Points are confirmed.

Point XXI, and XXII.

Mistresses of Families, may of it prepare fine Soap or Wash-balls, far exceeding the Venetian. Household Maids, may with it scour their Metalline Vessels, so as to render them neat and beautiful.

THAT fixed Nitre will wash and purifie Linen cloth beyond all Soap, no Man will deny, who comprehendeth the matter, concerning which thing, the Ancients have written much, and not in vain, calling Nitre the Soap of the wife, but not for the washing of Womens Linen, but for the intrinfecal purifying of the imperfect Metals: Their External Purgation may also be performed by help thereof, so that the twenty second Point is also verified.

Point XXIII.

Women may change the Yellow, Pale, or Brown Colour of their Face, and hands, into a beautiful whiteness.

THAT an Egregious Cosmectick may be made of Nitre, calcined with white Talk (by which ill-coloured skins may be whitened) is not to be doubted. For if Nitre fixed by the Regulus of Antimony alone, performeth that, why should it not yet do it better, if it be conjoined with some white Mineral Talk in the Calcination?

Point XXIV.

Old Women may by an easie way, take away the Wrinkles of their Face and Hands, as also the Corns of their Feet, and loil their Linen to such a softness, that it shall come but little short of Silk.

IT is easie to verifie this, to wit if Nitre be fixed with Regulus of Antimony, and set in a moist Cellar to run into an Oyl, which Liquor will be so fiery, that if any hard Skin, or Corn, be often anointed with it, it will so soften it, that it may be cut away with a Pen knife, and afterwards other smooth and soft Skin will grow in its room.

Point XXV.

Gardeners by this subject may destroy all Insects, by mixing it with water, and pouring it into those places where they breed, for they will either die in their holes, or run out to die, because they are not able to abide that fire. It also ripeneth Fruits, if a little of this Menstruum be applied to their Roots, at the entrance of the Spring; and if a large quantity of Apples be well covered over with it, they may thence prepare a lasting Wine, Vinegar, or Lixuring Spirit.

IT is not to be doubted, but that fixed Nitre will kill all Worms in the Earth; I have often tried it with good advantage, and found it true, in this manner: Many years ago, I had a Garden, in which was a Bed of Asparagus, which I covered all over in the Winter with Horse-dung, to defend it from the Frost, which occasioned the breeding of many small Worms like Threads, sticking to the Roots of the Asparagus, so that they could by no means grow or increase, only by reason of the great quantity of Worms, which took away the nutriment of the Vegetable for themselves. And once by chance throwing some fixed Nitre exposed to the Air, and turned into a Liquor, out at a Window into the Garden, it fell upon that place where these Worms were, the fixed Nitre was dissolved by the following Rain, and penetrated the earth; which done, the Worms in great numbers crept out of the earth, because they could not abide that fiery Liquor, the Asparagus grew up in the same place more plentifully and perfectly than before, which moved me also to apply this Liquor in other places; by this means the whole Garden was in a very short time freed from Worms.

Point XXVI.

Bakers may use it in stead of Ferment or Yeast, if they dissolve a few hops therein.

IF pure Nitre with flower be thoroughly moistened with warm water and set in a warm place, then, by its own proper power and virtue, it beginneth to ferment, especially if some fresh Hops be put to the water, by which also other things are promoted to fermentation.

Point XXVII.

Brewers by its help may have very strong Beer, if they extract their Hops therewith.

IN the like manner also warm Beer may be excited to fermentation.

Point XXVIII.

Mead, and Metheglin, as also Beer, and Canary wine, which are upon the turn, and growing lowre, may by this be rendered drinkable.

ANy kind of Drink, whether it be Canary, Metheglin, or Beer, which easily fowre in Summer, if you would amend them, to a Tun of the Liquor put about two or three Ounces of fixed Nitre put up in a Linen Rag into the Bung-hole at the top of the Cask, and let it hang down into the Liquor, then in a short time the fowre Liquor will be rendered drinkable.

Point XXIX.

Comb-makers, and others who work in Horn, may by this so soften their Horns, that they may imprint upon them what Images they please.

That every Horn, or Bone may be softened, if it be sufficiently boiled in a Lixivium of Nitre, may easily be apprehended; which thing another strong Lixivium, not so fiery as that of Nitre, will also perform.

Point XXX.

Keepers of Armouries may preserve their polished Arms, or Harness free from rust, by anointing them over with this Subject.

IT is credible, that fixed Nitre will preserve Iron from Rust, seeing that it is equally contrary to Corrosives, with a simple Aqua-Calcis which performeth the same.

Point XXXI.

Bird-catchers, may by the help of this prepare such a Birdlime, as will not be altered by Cold or Heat.

IF a Spirit be distill'd from Nitre, and Lapis Calaminaris dissolved in it, and the Spirit again drawn off, there will remain a thick and heavy Oyl, with which the Glue for Wood being thoroughly humected and dissolved, it becometh tenacious and viscous, which will not be dried by the heat of the Sun, but keepeth its unctuousity in all Seasons. NB. That Spirit of Salt, or Vitriol, also performeth the same thing, if any Glue be dissolved therein.

Point XXXII.

Souldiers may by help of this prepare a fulminating powder from Gold, of which the magnitude of a Pea, put upon a red hot Iron Plate, will give a greater Clap, than half a pound, yea a whole pound of Gun-powder; the same may also be prepared without Gold, by the addition of Salt of Tartar and Sulphur, as it is described in the second part of Furnaces.

AS for this point, it needeth no proof; for it is sufficiently known, that of \odot dissolved in Spirit of Nitre (in which also was dissolved Sal Armoniac) and precipitated with Salt of Tartar (or Spirit of Urine, which is better) then calcinated and dried, such a powder will be made, which being put upon an Iron, Copper, or Silver Plate, and enkindled by a light heat, fulminateth more strongly than half a pound of common Gun-powder, concerning which, I have treated at large in other of my Writings.

Point XXXIII.

Engineers, and makers of Fire-works, may perform many wonderful things, by the help of this Subject.

That common Nitre is used in the making of Gun-powder, and other Fire-works, wants no Testimony, being a thing every where known.

Point XXXIV.

Many new Works belonging to the Weavers, and Smiths Art, may be made thence, which may be Communicated to Neighbouring Countries, in lieu of which, money may be brought into a Country impoverished by War.

AS for this point, it is most certain, that by the mentioned Subject, various Manufactures may be perfected, which thing let no Man doubt; but there is no need here to particularize; let it suffice that I have verified (by the assistance of God) those things which I have named, and proposed to explain in that place.

P.in:

Point XXXV.

If Keepers of Vineyards, pour a little of this Subject to the Roots of their Vines, they will have ripe Grapes, and new Wine sooner than the rest of their Neighbours, of which they may make a good advantage.

PLebeians, Country-men, Gardeners, Vine-dressers, and the like, who are conversant about the propagation of Vegetables; do say, and believe, that Dung causeth Fertility, and the increase of things: But a Philosopher, penetrating farther into Nature, and who is a most diligent Searcher of her Works, attributeth that to the Salt which is hidden in the Dung, and the matter it self is no otherwise, for by digestion in the Stomachs of Men and Brutes, the essential Salt, as well of Animals, as of Vegetables, is transmuted into a Nitrous Salt, which together with the Excrements passeth out by the Belly, and is used by Men for the propagating of Vegetables of all kinds, but another Salt which doth not participate with that, is separated by another way, to wit, by Urine, the greatest part of which Salt is acid, and contrary to the growth of all Vegetables, (although it carrieth along with it some volatile Salt) it destroyeth, mortifieth, and taketh away from them the power of growing, yea, Life it self, if they be often moistened with it; but the Nitrous Salt reconded in Excrements, on the contrary, vivifieth all Vegetables, and maketh them to encrease, grow strong, and bear Fruit, which all men know. Therefore if it be probable that it is not the Dung, but the Salt which is hidden in the Dung, that causeth fertility and encrease, it will be possible, that an encrease by such a Salt may be procured in all Vegetables equally as with Dung it self, and indeed better, for there is Urine also conjoined with the Dung; which if it be not for some time exposed to the Air and the Rain, for the washing away that sharp Salt, the Dung would avail nothing to the fattening of the Earth, which Country-men know, and therefore they do not presently use their fresh Dung, but lay it in the Fields before Winter; Vine-dressers in their Vineyards; and leave it there all the Winter, to that end, that the Rain may wash out that sharp and hurtful Salt; and this being done, then at length they mix it with their Earth; and the event teacheth them that this fattens more than Dung carried fresh out of Stables, and full of Urine. Therefore if I know how to make a Nitrous Salt, which is reconded not only in the Excrements of Men and Brutes, but also in Rain-water and common Earth, I may use this instead of Dung, (being first purged from its contrary acid) one pound of which will perform more than an hundred weight of Dung; yet in the mean time it conduceth to that purpose, if a little Sheeps-dung be dissolved together with the purified Nitre, in Water, with which the Roots of the Trees are to be moistened or Seeds thoroughly wetted with the same. And this I have proved more than once, and found, that by the help of Nitre well depurated, an encrease is most powerfully and swiftly promoted, yea, more than can be believed. NB. That I would have none understand me, as if common Nitre were to be taken, which is not at all profitable in these matters.

Point XXXVI.

Nevertheless Must and Wine may be ripened after another manner in the Hoghead, without this Art, so that they who understand the way may have always good Wine, when others have it fowre, &c.

This is a very fair and profitable Secret in those places, where Wines, by reason of cold, cannot come to maturity, but are forced to remain crude and impotent, which by this Remedy may be brought to maturity in the Hoghead; so that Wine which is eager and fowre, may be made delicate, friendly, generous, and durable. And although I here write nothing but the truth, and what I have often effectually proved, yet I very well know, that but a very few will apprehend or believe it, which matters little to me; I am fatished, that I have verified what I have written in this point.

Point XXXVII.

There remains yet another thing very profitable to Country-men. The juice of Apples or Pears being pressed out, by the help of this Subject, such an efforescency or working is promoted, as Wine may be thence made, having the relish of the natural, and but little inferior in durability and strength, &c.

IN this point mention is made how the juice of Apples, and Pears, may be corrected, that it may be like to Wine, keeping many years uncorrupted: which certainly is a Secret of great moment and profit. Apples, when ripe, of their own accord fall from the Trees, every thing hath its period; what advantage may be made by this Art in those places, where a great quantity of Fruit groweth; whether it is not better to make this use of them, than to leave them to rot and be lost? I will do what lies in me, and not bury my Talent, that I may be rendered excusable before GOD and the World, although that which I teach may not be received, as becometh it to be used. At length, after my Decease, it will be observed, what is hidden in my Writings, but the *Phrygians* were wise too late. Therefore I again affirm, that all things contained in this point, are purely true, and may be perfectly effected. [See *Apology against Fanner.*]

Point XXXVIII.

If Husband-men moisten their Seed with this Menstruum, it will sooner be ripe, and have larger and fatter Grains than ordinary: which being done, I will show by what means they may make great profit of their Grain, &c.

THE 35 Point confirms the truth of this, That Grain will grow the more plentifully, if it shall be humected with the Nitrous Water above-mentioned, before it be sown, but common Nitre is not here to be understood. The other is also consentaneous to Truth, which is written about the most profitable use of Grain, which none need doubt; for as yet more may be done in that than I have here spoken

ken of, for without much labour and cost, by that water, every good and kernely substance, as I may so speak, of Grain, is extracted, which Extract may be kept for many years, as a Treasure of great moment, of which afterwards, at any time or place, (by the addition of Water of Hops) good Beer may be made, and Vinegar, and burning Spirit; it is also of such a very Nutritive substance, that in case of necessity it may be used instead of Bread, one pound of which will afford more nourishment than two or three pound of Bread made after the common manner. It may also be kept in Garrisons with great commodity: Also it may be used at Sea, by those who sail to the Indies, and trade about in Ships, when they want Bread; of which by the addition of warm water of Hops, may be made very good Beer: at any time of the year, for it is easily and wholly dissolved in warm water. For this reason also it may be most commodiously carried from place to placey Armies in time of War, which in the Field, at any time, Winter or Summer, with the water of Hops, it may be boiled into Beer, and there is no need to carry the water far, because it is to be found in all places; neither are Hops of any great burden; therefore in one only Tun there may be carried of this Extract as much as sufficeth for the brewing of six or eight Tun of Beer; and which is more, by this means, wholesome Beer may be made in the *Dog-dairies*, as well in Camps, as in Cities and Ships, without any fear of impediment or future sowrness; at which time good Beer is not otherwise made, because then it is wont presently to grow sowr; and many other Commodities are procured by this means, all which to declare would be superfluous. Let what hath been said suffice.

Point XXXIX.

I have yet one thing to add among my Wine-Arts, concerning Grain, and the Fruits of Trees and Shrubs, which is to be received with Thankfulness, as a great Gift of God to Mankind, viz. It is found by Industry and manifold experience, that from Rice, Wheat, Oats, Rice, Millet; also from Apples, Pears, Peaches, Cherries, Plumbs, Sloes, Damascens, Quinces, Figs; as also from Goose-berrys, Mulberrys, Barberries, Black-berrys, Elder-berrys, and other like Fruits of Trees and Shrubs; from all these, I say, may be prepared with little labour and cost, a Drink very like to Wine, both in taste, smell, and strength, being grateful, wholesome, and durable, &c.

IN this point mention is made, That of the Fruit of Trees and other Bulbes and Shrubs, a clear Drink may be made, which is also grateful and durable, being like to Wine in taste, colour, and virtue; which thing, although it may seem strange to those who are ignorant of the matter, nevertheless it is most true; so that those things which are contained in this point, may be boldly credited. For what should it profit me to write those things which I am not able to prove, it would only turn to my disgrace and detriment. For this reason I have determined to have such a Laboratory prepared, in which not only the owners of Metallick Mines (if they desire it of me) may learn the manner by me newly invented, for the compendious melting of Minerals, so that they shall yield more Metal, than by the known and common manner; but will also show other Secrets, that

the *Magnalia* and wonders of God may be made manifest, and We stirred up to give Thanks to the Giver of all Good: Which Elaboratory shall continue open for one whole year, which being past, it shall again be shut up and cease; for I purpose not to render the whole course of my Life obnoxious to those great Labours, but at length to enjoy a quiet tranquillity; which thing I am willing that all men should know, that they may spare me with their Letters, which it is impossible for me to answer, much less that I should see the Persons, seeing that the burden of journeying is to me altogether insupportable; but whatsoever I may perform at home, I will not refuse. [See for this point *Apology against Farmer.*]

Here thou hast, benevolent Reader, a fundamental Explication of my *Miraculum Mundi*, (as for those last points, to wit, 36, 37, 38, and 39, they might indeed have been very commodiously explained here, but because this is done at large, in a peculiar Treatise, entitled, *The Prosperity of Germany*; there is no need to explain them in this place; therefore what the benevolent Reader finds wanting here, there he shall find it at large, to which I remit him) whereby it will appear to all men, unless to those who are wilfully blind, that I have not ascribed too much to the Salt of the Earth, as a universal subject, but that I have proved to the whole World, that every thing which I have attributed to it, is possible, and plainly agreeable to Truth. But that these Secrets which I have proved, may be performed by the benefit of the Salt of the Earth, may not be done by other waies, and perhaps nearer, I go not about to deny, but do necessarily affirm, that the mentioned Metallicks, as well as the Mechanicks, may be performed after other manners. Only here it is verified, That the Salt of the Earth is deservedly esteemed a universal subject, which no man will deny, nor will be able to refute by Arguments, supported by truth, how wise soever he may seem to himself. Therefore let its vileness offend no man, for the best of things is oftentimes hidden in things of small price. Wherefore all men erre, who attribute good to outward splendor, in which yet it is not; but is only to be sought, found, and obtained in things vile, and of low esteem. Note this, believe this, otherwise thou wilt never attain to any Good.

But here some Man may object in this manner: If Nitre be a Universal Menstruum according to my praises of it, it will thence necessarily follow, that the stone of Philosophers should be made by it, of which nevertheless I have here made no mention. To obviate this Objection, I do indeed readily confess, that I have not proceeded in this subject, any further than those things which I have now proved; but without doubt it containeth in it self greater things, than are manifested to me and others. I have made a beginning, I have srowed the way, let others follow me, and prosecute the thing further, if God shall grant it to them; as for me I am content with small things, and do not anxiously, or sollicitously aspire after the highest. Yet in the mean time, this I freely confess, if I were not so old as I am, I should not leave this Matter unemploy'd. It is not to be doubted, but many men have sought the Universal stone in Nitre, but what they have found, that themselves know; and of this I am the more assured, because there Matter in the end of the Work taking fire, hath vanished like a Clap of Thunder; hence the ancient Philosophers have performed their work in Winter, lest they should be hurt by Corruptions; it is most

true,

true, and void of all error, that a most noble essence of this sort, obtaining a power of expelling all the Natural Diseases of Mortals, and of transmuting all the imperfect Metals into Gold cannot be prepared from an impure Metal, or Mineral, nor also of Gold itself. Much less of viler and more unlikely things in which Fools are miserably Occupied, prodigally, and unprofitably wasting their Goods; but in my judgment, it should be no other thing than a Concentrated Astral fire, exalted by Art, into the form of a stone, without any other Adventitious matter. For in the nature of things, no purer Essence can be found, than fire, exercising a very great power in all things, especially in Metals: For if we had not fire (I pray consider it) all Arts, and Mechanicks would grow cold, and be involved in the dark silence of Cessation. Arts were invented, and draw their Original from the fire, otherwise how should Metals be got out of their Minerals, and prepared for use? truly they would be of no use at all. Therefore the fire containeth more than can be believed. He that doth not know fire to be a most powerful Element, knoweth nothing, nor without this, can he find out any thing, neither by any just right can he assume the Name of a Philosopher. The fire alone, without the addition of other things, is sufficient to make Metals of stones, and particularly, the best Metals out of the vilest stones, provided we know how to use it; but universally being concentrated into a stony matter; which last although I have not experienced, nevertheless I have observed, if (by the favour of the Almighty) a man could exalt the fire into a Corporal fixed substance, he would certainly have a Tincture for men, and the imperfect Metals. But some man may object, by what way is this Crown to be obtained? Truly by no other than by Divine Revelation. For the Secrets of God of this sort, are not so easily to be found out, nor will they be manifested to Impious men, although the whole World is infected with a foolish madness, who doatingly think by force to extort Gold from things in which it is not, and one that hath understanding of the fire and Metals, cannot sufficiently admire those foolish and doctish Labours, which they who are Captivated by the hunger of Gold, undertake for the making the stone of Philosophers; many being willing to ascend the Ladder, are presently sollicitous about the uppermost Round, when notwithstanding they are as yet far from the lowermost step: But this is a matter of a higher and more diligent search. In the fire, I say, are contained Secrets of great moment, yea, inso-much that some Philosophers (among whom *Plato* is the chief) write that God is most clearly discerned and apprehended in Fire and Salt. Fire, and the immortal God alone can make light of darkness, which is granted to no Mortal to do; without fire is darkness and death: Without fire nothing can live, nothing groweth or encrease.

In sum, Fire is the most Noble, and most Potent Work of God in the whole Universe, he that knoweth how to use it rightly, will have need of no Art. Let the Benevolent Reader also take with him my small judgment concerning the great stone of the

wise; let every man believe what he will, and is able to comprehend. Such a work is purely the gift of God, and cannot be learned by the most acute powers of an humane mind, if it be not assisted by the benign help of a Divine Inspiration. And of this I assure my self, that in those last times, God will raise up some, to whom he will open the Cabinet of Natures Secrets, that they shall be able to do wonderful things in the World, to his glory, the which I indeed heartily wish to Posterity, that they may enjoy, and use to the Praise and Honour of God, Amen.

The EPILOGUE.

I Doubt not but many Men considering the great good that may be effected by the benefit of Nitre, will be desirous of knowing how they may attain it in great quantity, that so they may not be forced to buy it at a dear rate; which certainly would be a great help not to a few who labour in the fire, and I could wish from my Soul, that all honest and pious Chymists might be able to recover some compensation for the Coals they have consumed without fruit. But seeing that I have made mention of the production or preparation of Nitre, in a peculiar Treatise entitled, *The Prosperity of Germany*; it is needless here to repeat it. But this I will say by way of prediction, that Nitre, being thoroughly known by my Writings, true Alchymy, or the Transmutation of the imperfect Metals into better, will in a short time be as common, as it was in *Egypt* long since in the time of the Emperor *Dionysius*, who could not overcome or subdue the *Egyptians*, until he had by many Cruelties extorted their Books from them, which he burnt, and so brought them under the yoke of servitude. NB. That it is no wonder that the Transmutation of Metals should have been so common with the *Egyptians* only, seeing that Nitre is found in all places of the Land of *Egypt*, and the famous River *Nile* is impregnated with Nitre, which only by its overflowing (which it doth twice in a year) so fetteneth the whole Country, that it is made very rich and fruitful in all things without dung; for the *Nile* aboundeth with Nitre, as the Sea doth with common Salt. For at certain times of the overflowing, viz. in the beginning, the inhabitants are wont to dig deep Pits, that they may remain full of the water, which being afterwards dried up by the Sun, Nitre is very Copiously prepared, as common Salt is made in *Spain*, and other hot Regions. This therefore I was willing to discover for the information of the Reader; if he be wise, and God be propitious to him, he will believe that I have said enough; but if not, an Explication ten times clearer will not help him. Therefore let it suffice, that what is here desired, shall be had in those Treatises which are entitled, *The Prosperity of Germany*, whereby a man filled with the Love of God, will be greatly delighted.



THE
CONTINUATION
OF
Miraculum Mundi.

In which Nature is clearly laid open to the Eyes of the whole World; demonstrating, that the chief Medicine of Vegetables, Animals, and Minerals, may be prepared of Salt-petre, and that Salt-petre truly merits the Name of an Universal Menstruum.

The PREFACE, to the READER.

This Treatise, to which I have given the Title of the Continuation of Miraculum Mundi, contains our excellent Arcanums, which I don't not, but will prove very profitable to the publick. The first of these I offer to Country-men, as Husbandmen, Vine-dressers, Gardeners, and all such who are occupied in tilling and manuring the Earth, that they may learn a new Method of fattening and enriching their Fields and Gardens, without the usual and customary way of dunging, and thence yearly acquire a greater profit.

The Second, I give to all Citizens, Merchants and others who have time and leisure, and abounding in riches, know not by what means to augment or improve their Gold and Silver. Which way I will shew them, and how to effect it after a much better and more profitable manner than put-

ting it to Usury, or incommoding or oppressing their Neighbours.

The Third, I present to all Conscientious Physicians that they may learn to prepare Salutiferous and Efficacious Medicines with small charge, little labour, and in a short time; that (as becomes Christians) they may help and succour the Miseries of the sick, and acquire to themselves an honest livelihood.

The Fourth, I dedicate to all persons of great Name and Authority, by the benefit of which, they may preserve their Health entire, and recover it when lost.

The Omnipotent God give us his Divine Grace, that we may make such use of his fatherly bounty, as may tend to the promoting of his Honour, and the Love of our Neighbour. Amen.

Arcanum I.

Being a Gift given to Husbandmen, keepers of Vineyards, Gardeners, &c.

Although I had determined with myself to reserve the Prefs, mentioned in the first part of The Prosperity of Germany, (by which the juice might be pressed out of great Trees, the searching after which hath wearied many Mens Brains) for the third part of the same work; nevertheless, it seems good to me to describe it in this Treatise for the good of the publick. And that chiefly for this reason, because the Omnipotent God hath now revealed to me other manners of extracting Salt-petre, in plenty, out of all Wood, and that without a Prefs; and not only from Wood, but also from all Vegetables, Animals, and

Minerals, so that by an easie business, and in a short time, without a Prefs and putrefaction, Wood, and Salt may be converted into Salt-petre: Yea, in the space of three or four hours, every Vegetable, or Animal, as also Salts of every kind, may be so transmuted, as that they pass into a Fatt, fervid and sulphureous Salt, which afterwards by the benefit of the Air is animated, and converted into Salt-petre. Such a Salt, although it doth not presently conceive flames, and burn like Salt-petre, yet it is now brought to that pass, that in the manuring or dunging of poor and barren ground, it doth the same thing as the dung of any Cattel is wont to effect. Hence by the same Salt every pure Sand destitute of all fatness, is quickly so fattened, that it is rendered fit for the sowing and bringing forth Corn. Few will believe what Salt can perform, when spoiled of its Corrosive force. Therefore Christ saith not in vain to his Disciples,

Te are the Salt of the Earth. That Earth which wanteth Salt is dead; nor can it bring forth Fruit: For this inverted Salt serveth not only for sandy and plainly barren Fields, but also for those which are fruitful, that they may be sowed every year, and bring forth Fruit. Truly it is a great Gift of GOD, of which this ungrateful World is not worthy. It often happens, that a Husbandman, through want of Dung, is forced to let his Fields lie unfown, till he can have an opportunity to sow them; but what a loss is this to those who in the mean time must pay the Magistrates, Taxes, or Duties, for them, and yet make no benefit of them. Were it not better for such to possess only the Third or Fourth part of what they have of such Land as would yield him every year an increase. Certainly by this means, that Land which otherwise is scarce able to maintain one Country-man would be sufficient for the keeping of ten, if it were fattened after this manner by an inverted wood or salt. In like manner also Vineyards [and Hopyards] might be so fattened, that the Labour bestowed upon them might not be in vain, but they might abound in Fruits.

So also Fruit-trees, and Meadows, and Pastures, which bear but little Grafs, may by the same Salt be so amended, as to bring forth better Fruit and richer Crops of Grafs. But let this suffice, concerning those things in this place, more shall follow (God willing) in the Third Part of The Prosperity of Germany. In the mean time the Plenty of Corn and Wine will be in part consumed. But I doubt not but that this excellent Gift of God will be sought into by good Masters of Families, he had in esteem, and even from this time to the World's end, be put to use for the promoting of the Divine Honour, and the well-being of many Thousands of men.

But the manner of expressing of Wood by its proper Fire, and again of coagulating this acid juice, by the benefit of the fixed Salt remaining in the burnt Coals or Ashes, into a Salt fattening of barren ground, or of reducing it into Salt-petre by the benefit of the Air, is indeed an excellent and singular Artifice, which rendereth all unprofitable Wood highly profitable and beneficial; yea, these are Inventions so profitable, as the like hath been yet published by no man. And this Invention is much better than that of reducing Wood into Pot-ashes, in which all the acid juice passing away in smoak, wholly periseth, and is lost, and from a great quantity of Wood a very few ashes remain, and out of them there is found but a little Salt (scarcely the Tenth Part) fit for the fattening of ground, or to be turned into Salt-petre. For it is not the ashes, but the salt contained in them, that serves to both those purposes. Therefore this my method of extracting the juice of wood, and converting it into a good salt, is far to be preferred to the making of Pot-ashes of Wood. Nor doth this prefs serve only for the pressing out the juice of Wood, where Wood is plenty, but it may be also used with great profit in Moorish places where Wood is wanting, and which abound with Turf, which may be used instead of Wood. For the juice of Turf is equally fit with the juice of Wood for enriching of Land; so that no Country hath cause to complain that the Creator of all things hath not plentifully provided it with some part of that *miraculum* Treasure. Countries that lie high abound with Wood, and the low afford abundance of Turf. Therefore, as in Regions of an higher situation, an unpeakeable quantity of Wood periseth by putre-

faction, and growing, and again rotting, serveth for no use or benefit; so also it is in places lower situated, with Turf, in which very often vast Tracts yield not the least profit to any man, although in their inward Penetrals are hidden great Treasures. Seeing that it is so in Moorish and Marthy places, if they are overgrown with Grafs, and Beasts should be sent to feed upon that Grafs, what profit will thence accrue to men? But if they shall be invironed with too much wet or plashiness, (too boggy) so that they are impassible by men, they are of no utility at all.

There are Marthy tracts which are covered over (or swerved only with Moss) which neither afford Turf, or nourishment for Cattel, inasmuch as the growth of Grafs, and Turf fit for burning, is hindered, either by too much Sand, or large Moiss. And yet those very tracts being pressed by Fire, yield a fertile juice, by which the neighbouring Fields (especially the Sandy) may be rendered fruitful. For those Moors or Marshes contain nothing but that fatness which the Rain-water hath collected from the neighbouring, high, and sandy grounds, and washed down with it self into the Valleys, where it concreteth into Moss; whence of right it should be referred to those barren sandy grounds, to fatten them. And by this means it may be brought to pass, that great fruitfulness may be conferred on much desert and waste Land, which brings no profit at all to Mankind. What I say, is agreeable to the Truth it self, and perhaps in Process of time, will be found most true, and come into use in very many places. But at this time, these things seem to Country-men, meer Dreams, and far exceed the Capacity of their mauld Brains. But as every fat Marth is able to fatten the adjacent barren, high, sandy grounds; so the Ocean is the Universal Medicine, and nutriment of all high and barren Regions, through which it passeth, and by the salt contained in it, bestows upon them fruitfulness. [Vid. *Nar. Salinum.*] Whence the incredible Providence of the Divine Goodness manifestly appeareth, for which unceasing Thanks are to be given to the Almighty by all men, for His Fatherly Care, and great benefits never to be forgotten. But how the Sea-salt fatteneth, and maketh fruitful sandy-ground, which is destitute of all fatness, shall afterwards be exactly demonstrated. Here, by the way, in the Description of my Prefs, for the pressing of wood, I was willing to mention this thing. How much better therefore is this my Art and Invention of preserving the juice, and almost the whole *pondus* or weight of the wood (the unprofitable Phlegm only excepted) in that transmutation, than the invention of reducing it to Pot-ashes? For any man of Understanding may easily see, that in that open burning of the wood the noble Sulphur is consumed by the Fire, and can be of no benefit. But if the business may be so ordered, that the wood shall burn, and not consume it self in burning, but be converted into a sulphureous Salt, it will be a thing of great moment. He that knoweth how to perform this, hath indeed attained the scope, and arrived to the desired end. Although a Coal be deprived of its juice, nevertheless it retains almost the same quantity that the wood had, whereof it was made. One pound of such Coals being burnt, scarce yields an ounce and an half of ashes, which ashes afford but a third or fourth part of Salt, fit to be changed into Salt-petre, or to fatten the Earth. Therefore it is no small Art to preserve the Sulphur of the Coals (whose Virtues are great) and to convert it into so noble a Salt.

For the acid juice of wood being pressed out, and reduced to sweetnets, will effect far more in the manuring and fattening of Fields, than any one can easily believe. Hereafter, if I shall see it necessary, I shall publish yet more and greater things; but I shall yet for some time suspend the publication of the Third Part of *The Prosperity of Germany*, till I see how things will prove; being assured that my Writings for time to come will be more grateful, than to this present Age. I will now enter upon the description and use of the Presses so often mentioned, for the expressing and again coagulating the juice of Wood.

Of the Figure, Use, and Utility of the Press, by whose help the Juice is plentifully pressed out of Wood, without great labour, fit for the making of Salt-Petre.

The Form or Figure.

First, Let a round Furnace be built with Bricks of the same form with that in the first Figure, noted with the Letter A. It must be like a Glass-maker's Furnace, large at the bottom, and rising round by degrees to a small point at the top; in the top must be a round hole, opening about a foot broad, by which the Wood may be put into the Furnace. To the hole is to be fitted a Cover or Stopper, made of the same matter, with the Bricks, and burnt as they are, to shut up the hole. On one side of the lower part of the Furnace, is to be a door, by which the Coals may be taken out. On the other side is to be a little hole, to which an earthen Channel or Pipe of about three or four cubits long, is to be fitted, in which the smoak or fume of the wood, forced out by the fire, may be condensed into an acid juice, and may defil into a wooden Vessel or Barrel, which is to be fitted to the Pipe, to receive the defilling acid juice. See the first Figure noted with pag. 13. at the beginning of this Treatise.

- A. is the Furnace or Oven wherein the Wood is char'd.
- B. The Cover of the Furnace.
- C. The Door at which the Coals are taken out.
- D. The Cases or Pipes wherein the sap or juice of the Wood is condensed, and from thence runs into the Receiver.
- E. is the Vessel or Receiver into which the Vinegar of Wood runs.

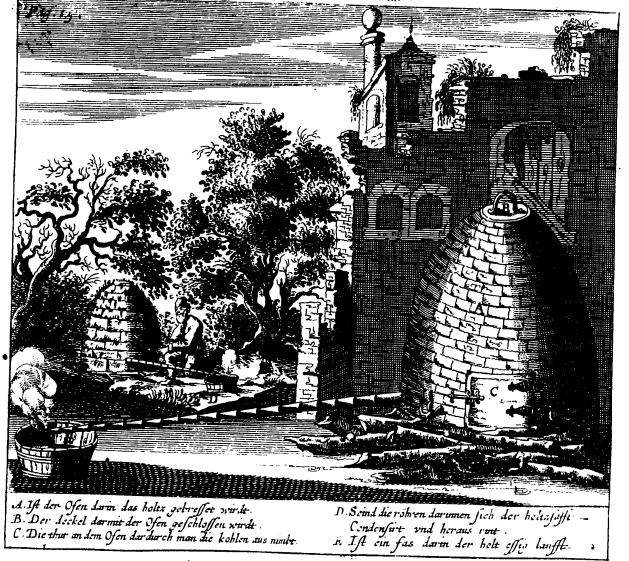
All things being prepared in the manner aforesaid, let the Furnace be filled with wood up to the top, and if the wood be not dry enough, intermix with it, in the putting in from the bottom to the top, some dry Shrubs or Bushes, or small Faggot-sticks, by whose help the wood may be the more easily kindled. After the wood is kindled, and burns well, the hole in the top of the Furnace is to be close shut with its Stopper, that there may be no exit for the smoak, but that it may be forced to descend and seek its passage through the lower hole, by the Channel or Pipe. Therefore when the wood begins to burn, and yet can emit no flame, the heat presseth out all the juice, and forceth it into the pipe, in which, from the smoak, it is changed into an acid Juice or Liquor, which defilleth by the Pipe into the appointed receiving Barrel. All the wood being turned into Coals, and emitting no more fume, the whole Furnace, wherefoever it may admit the air; and also the hole to which the Pipe

is fitted, is to be smeared over with wet ashes, that the Coals in the Furnace being suffocated or choaked, may remain entire. The Coals being taken out, may be put to necessary uses, being equal in goodness to other Charcoal which Colliers make in Woods. NB. I would have this understood, of such wood as is of a pretty good thickness, and suffers its self to be reduced into Coals; for if you cast into the Furnace Bushes or small Brushy wood, to press out the juice, you will obtain only a Powder of Coals, which after the juice is pressed out, is to be left in the Furnace open (not smeared over, as we taught above) till it pass into ashes, which is required for the coagulating the expressed juice; as shall appear by and by, when we come to speak of its coagulation. NB. When you have no occasion for Coals, or cannot sell them, it is necessary, that letting the Furnace be open, you suffer them to burn to ashes. If this operation be instituted in a place where there are Stones fit to make Lime of, it would be worth the while to fill the Furnace with a layer of Wood, and another of Stones, from the bottom to the top, which Chymists call *Stratum Super Stratum*, and after the juice is pressed out to open the Furnace, that the wood may be turned into ashes, by doing of which at the same time the stones will be calcined, and changed into Lime, which being exposed to the air, (yet so that the Rain cannot come to it) will fall to pieces into a fine powder. To this Powder, being mixed with wood-ashes, the acid juice is to be poured, which was pressed out of the wood, that those two contrary natures may mutually work upon each other, and well unite: in which operation the sharp spirit of the wood loseth its Acrimony, and the fixed Salt of the wood and stones is altered, so that from both there proceedeth a contrary middle nature, and a sweeter salt; which being long exposed to the air, draweth from thence a Life, and is transmuted into the best Salt-Petre. NB. This mixture is so to be exposed to the air, that lying under a Covering or Roof, and being open on the sides, it may be defended from the Rain, and nevertheless attract the air. If it shall be dried by the air, it must be moistened again with the Urine of Men or Beasts, that it may never be thoroughly dry. If these things be rightly performed, you shall have plenty of the best Salt-petre, from this matter, in the space of a year and an half, or two years at the most; which being extracted, purified, and boiled up, shooteth into very pure Crystals. The rest of the matter being again laid in its former place, under the covering or shed, and being ordered in the same manner, as before, will in the space of two years produce new Salt-Petre, which may be extracted and boiled up as before; for that mixture still remaineth good, provided it be moistened with Urine when dry, as was said. NB. He that desireth to acquire Salt-petre sooner, after the conjunction of the acid spirit with the ashes, and the precipitation and mortification of both, from that conjoined matter, by the pouring on of water, he may extract and boil up the Salt, and then dissolve the Salt in Urine, and digest it by Circulatory Vessels; by which means he may obtain the best salt-petre in the space of one year. This labour of pressing the juice out of Wood, and at the same time of making Stones into Lime, may be used in all those Cities and Places where wood and stones are plenty. But if this operation were to be instituted in a Wood, there would be no need of a Furnace built with stone, seeing that the Pile of Wood might be covered all over with green Turf, after

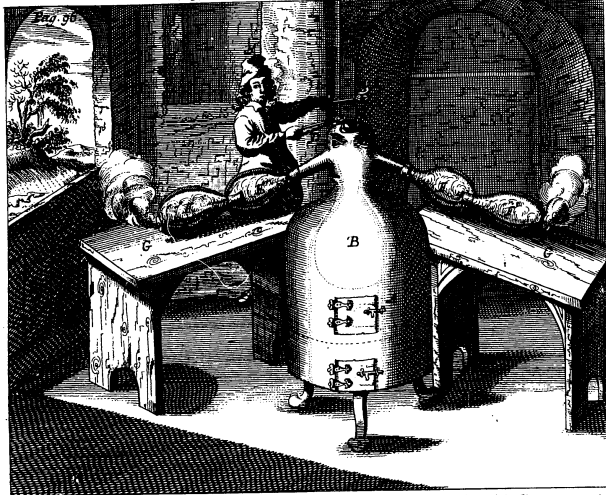
Part I. Tab. 168



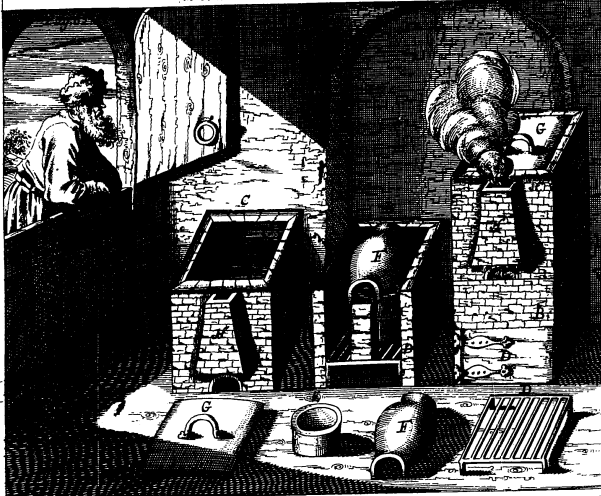
in Continuatione attracti mundi



A. Ist der Ofen darinn das Holz gebrühet wurde.
 B. Der Lichel darinn der Ofen geschlossen wurde.
 C. Die thur an dem Ofen dar durch man die kühlen ans nimbet.
 D. Sind die röhren darinnen sich der holtsafft -
 Condensirt und heraus runt.
 E. Ist ein fass darinn der holtz safft laufft.



A. Ist der Ofen das swänge eingetraget wird. B. Kann sich leicht darmit der feinen eingetraget werden.
 B. Das stählerne gefäß in dem Ofen. D. Die Zange mit deckel darmit das II. Durchgehmen. G. Die hantel dar auf die rechte
 C. Das Loch mit einem feilen dar durch gefäß nach dem eintragen gefäßes werde man lösen. H. der Laborant.



A. Ist der Ofen wie er in der arbeit steht. C. Ist das obertheil des Ofens G. der Deckel dar mit der Ofen oben gedeutet wird
 B. Ist der untertheil des Ofens wie er D. Der ruhm dem Ofen. H. der Herd. vom kohlen darmit feinen vollen arbeit
 E. der Ofen ohne die vorder wand aussuchen. F. der Muffel so auff den herd gehört. H. das rauch fangen an dem Ofen.

the same manner which Colliers use in making their Charcoal, only with this difference, that here must be a hole in the side, to which the duct or pipe is to be adjoined. The juice being pressed out, the pile or stack is to be every where well closed, that the Air may have no passage, if you would preserve the Coals. All being cooled, the Coals may be taken out and fold, or put to necessary uses, so that the expressed juice, which being received in no Vessel, would have vanished in smoke, plainly costs nothing; but if you do not desire Coals, let them be burnt into ashes, that they may serve for the coagulating the spirit into salt, and afterwards by the help of the air, in a certain space of time transmute it into good Salt-petre.

NB. It is here also to be noted, that the expressed juice carries along with it a sharp hot Oyl of a dark reddish colour, which is not to be cast away, but is to be poured upon the Ashes together with the acid Spirit, that putrefying with the Salts, it may with the rest put on the nature of Salt-petre. But he that will may apply the same to other uses; forasmuch as it is profitable for other things. Any Wood exposed to the Rain, or standing in the Water, easily rotting, being anointed with this Oyl, will be preserved, so that it will not so easily rot, seeing that the water cannot adhere to the Wood, but is forced to slide off, or is hindered from penetrating the Wood. Carters, or Waggoners may use the same instead of Grease to their Wheels and Axle-trees, especially when it is a little thickened with Suet or Rosin. But the best use of it that I yet know (if you except Salt-petre) is to dissolve and boil it with a sharp Lixivium made of Lime and Ashes, by which it becometh a very hot and penetrant Soap, procuring fertility; if a poor sandy ground be sprinkled with the same and moistened: For it rendereth it very fruitful; which thing it doth not only in Fields, but also in Trees and Vines, inasmuch, that one Tun of it avails more in the fattening of Fields, than ten Cart Loads of Horse-dung or Cow dung: And a Hoghead, or Tun of this Soap may be carried into Fields and Vineyards, far remote, more easily than ten Loads of Dung, which is carried to Vineyards situate in Rocky places with great labour, and no small charge.

NB. If this Soap be used for the fattening of Vines, too much of it is not to be used at a time, lest the Vines grow too fat and luxuriant; therefore its moderate use is required, which needs not that exactness in the dunging of Arable Land: Although in that an excess brings damage, and indeed it is the excess of good things that doth harm. A Tree, or Vine being made too fat by dunging, grows luxuriant, and putteth forth more fruit than it can bear and bring to Maturity. The Wood it self becomes too fat and soft, so that in the Winter it is easily injured by the cold. Whence in all things a Mediocrity ought to be observed. This Black Soap made of the Oyl of Wood, is truly a very great gift of God, in those places where Sand renders the ground barren. Hence the admirable Wisdom of our Creator appeareth, as it were thus speaking to us: *Ye rude, and unskilful men, wherefore do you leave this place unutilized? Because you cannot sow it with any kind of Grain, I will that it shall produce wood, and afford you a matter, with which, if you will, you may render it fruitful.* For it is sufficiently known, that Animals, and Vegetables rotting, dung the earth, and render it fat; which thing even the Rusticks have now learned, that they do the same without putrefying or rotting, when they cut down,

and burn the Trees and Bulhes, which had grown up in the Fields, during the long time of the War, and spread the Ashes on the ground, by which it is fattened. But that they know not how to save, invert, and use with the Ashes for dunging, the acid Spirit, and hot Oyl, which vanish in the burning, ought to seem strange to none, seeing that no man hath hitherto declared it to them. Nevertheless, I perfwade my self that this way of dunging of Land, will come into use, in process of time, but I believe not quickly [here in Germany] by reason of that great quantity of grain which every place affordeth in this time of Peace. But if hereafter, a new War should happen (which God avert) and the Fields should lie many years untill'd, through the want of Men, Horses, and other necessaries, then I believe, and not before, this necessary Art will be sought after.

But what other things the said juice of Wood is able to effect, we cannot here declare, by reason of our intended brevity: Yet this I will add, that if this acid Spirit be rectified, it may be used in the preparation of good Medicines, in Mechanick Arts, in the making of many fair Colours, from the extraction of Metals, Minerals, and Stones, and for all things for which common Vinegar is used; yea, far more commodiously, because it much exceedeth the common Wine, and Beer Vinegar in sharpness. And even it self alone is a Medicine which cureth many incurable Diseases; being mixed with warm water, and used in a Bath for walking the Body, is far more efficacious than those Baths which issue out of the Earth; especially in all Scabs, in Members relaxed by the French Palfie, *Paralyti Gallica* [I suppose he means the Venereal Lues] in Fitulous and flinking Ulcers in the Legs and other parts of the Body. Also in the Gout, Stone, Cramp, Sciatica, Palfie, Diseases of the Womb, and all sorts of sicknesses otherwise to be cured by the help of Baths, which this Vinegar pressed out of Wood, far exceedeth in Salubrious Vertues.

The same also doth the hot Oyl which is expelled by expression with the Spirit, which exerth wonderful Virtues in curing those Ulcers and external affections. For which certainly, as a great gift, and to be easily found in all places, none of those who are burdened with grievous Diseases, can render sufficient thanks to the Almighty: But especially the Poor, who have not Money to buy Physick.

NB. Here also it ought to be observed, that those who use the Bath tempered with the juice of Wood, should before they enter into it drink some spoonfuls of this Vinegar. For this Vinegar by penetrating the whole Body, casteth out all things superfluous and noxious to nature by sweat, and openeth all Obstructions of the Liver, Spleen, and Lungs: And especially when the Vinegar is elicited from a Wood, or Herb, which is endowed with peculiar Virtues for the eradicating of those Diseases. As for Example: The acid Spirit of the Vine, Beech, Birch, and the like, taketh away the Obstructions of the Internal Bowels. That of the Oak, and other hard Woods, cureth the Corruption of the Blood, and all Diseases proceeding thence, as the Pox, Leprosie, external Ulcers of all sorts, Scabs, Fitula, and all open Sores. Also all Contractures or Cramps; Falling-sickness, Apoplexy, and Palfie. So the Vinegar of Ah, Cherry-tree, Plumb-tree, Sloe, or Bullace-tree, Medlar-tree, Arbut-tree, and the like Trees, which bear Fruits having Stones or Kernels, cure the Gout, and the Stone of the Reins and Bladder. That of Balsamick

Herbs, as St. John's Wort, Sage, Paul's Betony, or Fleuellin, Sanicle, Betony, Lung-wort, Liver-wort, Saxifrage, and other like, taketh away the internal Hurts of the Liver and Lungs, and all inward affects arising from Blows, Falls, &c. So efficacious a Medicine is this Juice of Wood, that the most costly Galenical Compositions are forced to give it place. In making the Bath one Pound of the acid Spirit is to be added to ten pints of water, and this quantity to be augmented, or diminished, according to the condition of the Patient and the Disease.

Before the use of the Bath, some drops of the Oyl may be adjoined to the spoonfulls of Spirit, which fortifieth the Spirit, that it more readily penetrateth the body, more forcibly accosteth the Disease, and the sooner expelleth it. In Gouty Pains, and in the stone of the Kidneys, the same Oyl being rubbed upon the part with the Spirit, gives a relief not to be contemned. In brief, this Juice of Woods and Herbs, if it be duly prepared and used, is able to flame and confound all the Apothecaries Shops of Galenical Medicines, notwithstanding their proud Furniture of Painted and Gilded Glasses and Boxes.

And I do not doubt but in process of time, that Physicians out of a good Conscience, will expode those unprofitable Coctions, and in their room institute better preparations, that God may have his due praise, and the miseries of the sick receive succour.

For although this acid water doth not contain the Virtues of the whole Herb, nevertheless it is to be reputed and used as an efficacious use of Herbs, in Medicine, seeing that that which is used in the Shops hath very little virtue, as daily experience witnesseth: It being nothing but the pure Phlegm of the Herb, the chief Virtues and Essence of the Herb remaining in the supped forces, although the water hath carried along with it something of the Smell and Taste. Look upon any dry Herb, which the heat of the Sun or Air hath deprived of all its Phlegm and Humidity, and see whether it be also deprived of its Smell, Taste, and Efficacy. And although in length of time it will lose all its Taste and Smell, nevertheless its chief Virtues yet lie hid in it. Yea, although its *accuum* be drawn from it by distillation, that an unskilful man would think that there remained no virtue at all in the remaining black Coals of Wood or Herbs, yet the most efficacious Virtues yet lie hid in the best Sulphur and Salt. And that great Virtue doth yet remain in the Coals, is not unknown to Rusticks, who in the Winter burn them to warm themselves, and boil their food, which thing they could never do by the Phlegm separated by distillation. Those black and contemptible Coals are of so great vertue, that they emulate the powers and properties of the most Noble Creature the Sun, for which cause they merit the name of Terrestrial Suns. For whatsoever the Astral and Sydereal Sun effecteth in the superior Firmament, the same doth the Terrestrial Suns, *viz.* Coals, which are its Vicars, also effect. The superior rendereth all things partakers of Life and Growth, the same doth also the inferior Suns. In the Winter time when the Sun is far distant from us, all the Vegetables of the Earth are as it were dead: In the Spring upon his return, all things revive, grow, move, increase, and are nourished.

Insects themselves which have hid themselves in Holes and Caverns of the Earth to fly from Cold, and have lain as dead, do again come forth into the light. All which effects are produced by the superior Sun. The same things also the inferior Sun can

effect. For when Flies, Spiders, and other like Insects in any Parlour or Chamber, to shun the cold, be take themselves to Holes and Chinks, and there lie as it were dead; the first heat they perceive by the making of a fire in that room, recover their former life, and again creep out of their hiding places, as upon the Suns approaching us in the Spring. Yea, if in such a Room made hot, there had been before deposited great Insects, as Frogs, Snakes, Lizards, and the like, as also Herbs killed by the cold, they would revive, recover strength and grow equally as if they had been illustrated by the Rays of the great Elementary Sun. Therefore, if this Contemptible-Coal, which in the judgment of the unskilful is deprived of all its Juice and Virtue, can perform these things; what a Medicine think you may be prepared by the help of Art of such a Coal?

But some Putative Physician may here ask; who can prepare any Medicine from so dry and insipid a Coal? It can neither be dissolved by the strongest Corrosive Liquor, nor by the most intense fire, if no air come to it: of which, if the least Portion shall touch it, it presently conceiveth flame, and is consumed, so that nothing of it remains but a few ashes mixt with a little Salt. And those Virtues which refresh all things living, and revive the dead, all perish by Combustion, and vanish in smoak, which could they be taken and preserved, might doubtless afford a Medicine of great moment. To this I answer: wherefore cannot so great an efficacy be preserved, and used for the making of a good Medicine, before that it vanisheth by burning, and flieth into the air? Whatsoever Philosopher is ignorant of the manner of esteeming this, truly he is a weak Philosopher, who ought to blush in that he setteth himself before others, and condemneth them who exceed himself in Learning and Science. He that knoweth not how to use any palpable and coagulated matter, before it be consumed by burning, and vanisheth away, by what means will he elicit the flame out of its Chaos, and concentrate it? But that the way of freeing this Noble Sulphur from its Bonds and Keepers, is not known to every one, is no wonder. For it will not come at every call. Of all the Philosophers, there is none who more clearly and openly teacheth by what means it may be delivered from its Bonds, than *Sandivogius*, who expressly saith, *That this Sulphur lies hid and is held Captive in an obscure or dark prison, and kept by very strong keepers. But that Salt only in the conflict or fight, gave him a deadly wound.* No Man hath spoken more clearly than this worthy Author. Therefore he that knoweth not how to extricate that Vital virtue from its bonds, and how to use it in Medicine, let him read the above cited *Sandivogius*, who will clearly instruct him. If he cannot learn of him, there is no reason why any one should labour to help him.

I will propose the matter by a similitude; a Man is compounded of three things, *viz.* Body, Soul, and Spirit; The Body is visible, immovable, gross, earthy, and corruptible: The Spirit is invisible, movable, living, and nevertheless mortal; But the Soul of Man, which is his most noble part, is immortal.

In like manner, there is also a certain *Anima* or Vital Principle in Vegetables and Minerals, although there are few who know how to extract it. Therefore as in Man the Soul is the most noble part; to which the Spirit is inferior, and the Body the lowest or vilest; so it is also with Vegetables and Minerals. To acquire the *Anima* or Vital Principle of any Vegetable or Mineral, that fixed and constant *Anima* is to be

be separated by the help of Art, from the gross, unprofitable, and dead body. For as long as the gross body adhereth to this noble Principle, so long it cannot move it self in a due manner, nor demonstrate its nobility, but is held Captive by its gross body, till it be set at liberty, by some body who knows how to dissolve its bonds. Being freed from its bonds, and the gross body laid aside, it can presently exert its power. Therefore let this be the principal care of Physicians, that instead of a body dead, and destitute of Virtue, they labour to attain the fixed and living *Anima* of Vegetables, that using that in the cure of diseases they may perform far greater things than now they do.

I have here inserted this discourse, only for this cause, that I might shew that a whole or intire body is of very little moment, and that that thing whereby any Good is to be effected in Medicine, is to be found only in the most noble part, to wit, the *Anima*.

And even, as in Minerals, besides a fixed and incombuftible Sulphur, there is also found another, combuftible and fugacious: so also there is found a twofold Sulphur in Vegetables in the distilling of which, by a Retort, an Oil is expelled, together with the acid Spirit and Phlegm, which indeed hath its virtues, but can in no wise perform those things which that part remaining in the black Coals is wont to effect. For by how much a Medicine shall be more fixed and constant, by so much the more do they enter and encounter long and fixed diseases; so on the contrary, fugacious medicines are found less efficacious in eradicating the same.

What I have said concerning Vegetables, *viz.* That there is in them a volatile and fugacious spirit, and a constant fixed *Anima*; the same is also to be understood of Minerals, which besides a combuftible Sulphur, possess also a fixed and constant *Anima*.

But whatsoever knoweth how to conjoin the *Anima* of Vegetables with the *Anima* of Minerals, hath obtained a Medicine which is able, after a wonderful manner, to corroborate the Vital Spirit in Man. For the *Anima* of Vegetables and Minerals, are the Rays of the Sun coagulated, which necessarily contain a vivifying or enlivening power, seeing that the sun maketh all things partakers of Life.

And a man, if he only beholds the sun, or its Vicar the fire, the earthly sun, although he be in some very deep and cold place under ground, where he cannot feel its warming and enlivening power; yet he shall perceive his Heart to be recreated and strengthened by the bare aspect of it: But how much greater a recreation and corroboration would he perceive, if he should take the *Anima* of Wine, or of some other Herb conjoined with the *Anima* of Gold, for the curing of his body, with both which it hath a great familiarity; for like rejoiceth in like, and desireth to be joined to it: And therefore it ought to seem strange to no man, that I assert, the *humidum radicale* of the humane body may be augmented by the *Anima* of Vegetables and of Gold: For the *Anima* of Vegetables is nothing else but an essential universal salt, which is found in all things.

Seeing therefore that Philosophers confess, that the redness of gold and whiteness of silver may be increased by its own universal salt, it is reasonable for us to acquiesce in the same opinion, and to maintain it against those that erre. A visible and palpable demonstration is to be credited. Nevertheless I easily persuade my self, that this discourse of mine will not be credited by many, which I cannot help. It contenteth me, that I have written the Truth, and lighted a Candle to my Neighbour.

After one and the same manner, of Wood of little or no worth, I have shewed the making of *Salt-petre*, for *Souldiers*, *Gardeners*, *Vintners*, and *Husbandmen*, fit for the dunging of Orchards, Vineyards, Fields, and Meadows; of commodious Baths, for the Sick; of a good Vinegar for Chymists and Apothecaries, necessary for many extractions. It now remains, that I also offer a Gift to the Owners of Metallick Mines. If they shall humect or moisten the *Calx viva*, or Lime made of stones, in the Press, as we have taught, with the *Acuum* or Vinegar of Wood, they shall obtain a cheap Flux, by which those hard and untractable stones digged out of metallick Veins, may easily be melted; for the acid spirit of Wood is fixed by the Lime, and converted into a salt, causing an easie Flux. Nevertheless, this salt will be of greater profit to Husband-men, for the dunging and fattening their Fields (for whose sake I also describe it) than in the melting of Mineral bodies. Physicians may use the noble and efficacious Juice of Wood, for the happy cure of many incurable diseases, and to their own honour and profit. This Vinegar of Wood being exposted in Hogheads to the cold in Winter, that it may be frozen to Ice, the Phlegm only freezeeth, but the sharp spirit, with the Oil, is not turned into Ice, but remaineth in the middle of the Hoghead so sharp, that it corrodeeth metals like *Aqua-fortis*. If Princes and Great men would be pleased to take care that the Wood in their Dominions (otherwise rotting in the Woods) might be turned into *Salt-petre*, they would do well, and it would not repent them of their labour, seeing there is a time at hand, in which *Salt-petre* will be much wanted.

There is yet another secret, which for the sake of Country-men I ought to discover, which will yield them no small profit; which is this: If Hop-poles be burnt at the ends which are to go into the Earth, and those burnt ends dippt in the Oil of Wood, that they may imbibe or suck in that fatness, and afterwards set into the earth, they admit no humidity or moisture, which otherwise they are wont to do, being every year diminished in that part which standeth in the earth. It also cometh to pass, that they communicate their fatness to the vines and stalks of the Hops to which they are joined, and render them more fat and fruitful, by this means affording a twofold profit, first in preserving the Hop-poles from rotting a longer time than they are wont to last. The other is, That the Roots of the Vines and Hops, drawing fatness and nourishment from the bottoms of the poles grow the faster, and are more fruitful. Moreover, those ends of the poles, in length of time growing rotten, yet there is no loss of the Oil, but still the same profit remaineth, seeing that those rotten ends of the poles being taken up and planted again in the earth with the Roots of Hops, they will afford them nourishment for some years, better than if they had been dunged with dung. In like manner, by the help of this Oil of Wood, strong and durable quick-hedges may be made for the fencing in of Vineyards, Orchards, Gardens, and Hop-yards, by which Beasts and Thieves may be kept out. For this purpose the sharp end of the stakes fit for the Hedges, are to be put into the Fire till they grow black, and then whilst they are hot, be dipped into the Oil, that they may well imbibe the same.

With these, being drove into the ground after the usual manner, an Hedge may be made by planting a young shoot or set of Thorn, Crab-tree, &c. all along between the Stakes. Those sets or springs, which

otherwife, growing but slowly, are many years before they come to a requisite height and thickness, their roots now obtaining fatness and nourishment from this Oil, arrive to maturity in less than half the usual time, and become a thick and strong Quick-hedge before the Stakes are rotten. Moreover, there is no danger of wild Beasts coming into those places where the Hedge stakes are imbrued with this Oil, seeing that wild Beasts shun all strong odours, and dare not approach them. If you shall imbibe Hempen-Cords, or such as are made of the Bark of Trees twisted together with Grains; with the said Oil, and then bind them about Fruit-trees, it will hinder the creeping up of Spiders, Ants, or Pismires, Palmer or Canker-Worms, and other the like Insects, which are wont to damnishe Fruit; inasmuch as those Insects plainly abhor such hot Oils. *By this means also may Rats and Mice be hindered from creeping up Houel-posts, and destroying the Grain.*

There is yet another manner of promoting the dunging of Fields, and the happy growth of Seeds, and not only those Fields which are lean and sandy, to which Cow-dung may be used, but also those which are hard and craggy, in which neither sand nor any dust of Earth is found.

But in making manifest this Artifice to the whole World, my intention is not that the World should thereby be enriched with great profit, as I have endeavoured by describing the manner of Dunging poor Sandy Land, by the acid juice of Wood. My Scope and end is only this, That every man may see and consider how many wonderful things may be effected with wood and shrubs, which are every where found in great quantity, and nevertheless are of no use or profit.

Who would credit any man, affirming, that it might be effected, that not only Grain, but all sorts of Trees, and excellent Vines should grow in any hard and naked Rock, without the addition of any Earth or Dung? Truly, I believe that there is no man in the World, to whom this will seem likely. This will more amaze Farmers, with his whole Crew, than my *Miraculum Mundi* did. Yet because the thing may be done, I cannot forbear to divulge the Artifice, only to this end, that I may subject the Divine Wonders to the eyes of the blinded World. But yet it cannot be, but that it will be profitable in many places, in those especially which lie near Rivers, and afford Wine; such are those which lie upon the *Alpens, Meisels, Neckers, Rhine, Danube,* and other the like Rivers, where great and craggy Mountains frequently occur; in which having the heat of the Sun all the day, Vines might be commodiously planted, if Earth and Dung could be carried thither. Certainly Vines grow no where better than in Rocks and Craggs, into whose clefts and cracks they infiltrate their roots, that they may thence attract to themselves nourishment, which few other Plants are wont to do: And because for the most part much Wood grows about such Rocks, it would be worth while to press out its juice, by which the hard Rocks might be reduced into a soft Dust, fit for the Reception of Vines, which might be performed by this operation; which nevertheless would not be necessary to undertake, but for the manifesting of the wonders of God to the unskilful, and shewing that such things may be done. If any desireth to plant in a place of this sort, in which Vines or Trees growing freely in rocky and stony places, as Cherry-trees,

Plumb-trees, Service-trees, and others, bearing Fruits which have Stones; at the beginning, a little hole is to be cut in the Rock by the help of Masons Tools, which is to be filled with the Vinegar of Wood; which being done, the hole is to be covered to keep off the Rain. After some daies, let him see whether the Vinegar hath infiltrated it self into the Rock, and again fill up the hole with fresh Vinegar, and cover it with a Stone, as be ore. And this Labour is to be repeated in the Summer time so often, till the Rock hath drunk up much Vinegar, and be thereby so softened for the space of an Ell in length, breadth, and depth, that it may be easily dug up with a sharp Instrument, and become a great hole; the matter digged out is again to be cast into the hole, and to be again filled with the Vinegar of Wood, and covered with stones, and so left till all the matter grows so soft, that it may be crumbled to pieces with the fingers. And in the *Autumn*, when Trees have lost their Leaves, or in the *Spring*, before the Leaves come forth, *viz.* in the Month of *March*, Vines or Trees are to be planted in the matter contained in the hole, and the matter to be trampled close down about their Roots, then all to be wetted by the pouring on of Water, and the event to be committed to God. So the Vines or Trees grow as well as if they had been planted in other manured ground.

The reason is this; Because the Rocks consisting not of Sand, but of stones, fit for the making of Lime, do contain much *Salt-Petre*, as also the acid juice of Wood, partaketh of the same nature, this, by corroding the Rock, dissolveth the *Salt-Petre* in the stone, and setteth it free, and at the same time loseth its own corrosive Acrimony, so that it cannot hurt the Roots of Vegetables, but is like to Cow-dung or rather better; for it fatteneth and nourisheth the Roots better. Therefore a Tree or Vine planted after this manner in a Rock, if it shall once put forth, afterwards dieth not, but the Roots infiltrating themselves into the Clefts of the Rock, seek their own nourishment. Nevertheless every Winter when the Leaves are fallen off, some of that acid juice is to be poured to the Trunk of the Tree or Vine, that during the Winter, it may again soften some Portion of the stone, which will afford new matter of nourishment to the Roots. And by thus affusing of fresh juice every year, there will be no need of Earth or Dung, seeing that the Stone is changed into earth and dung by the juice of the wood.

Although this *Artem* will seem a thing impossible to many, yet it is most true, of which, if any will make trial, he may easily do it in this manner: Let him get a stone which doth not consist of sand, but of such of which Lime is made, which being exposed to the Sun, let him pour upon it the acid Liquor of Wood; which when the stone shall have well imbibed or drank in, let him pour on more, and repeat this labour so often, till the stone be rendered so soft, as it may be rubbed to powder between the fingers. In this matter, rubbed or ground small, let him sow any Seed, which will sprout forth thence, as if it had been sowed in any good earth: The reason we have already declared, *viz.* because the stone is converted into earth, having its own *Salt-Petre*, or proper Dung in it self, and moreover, changing the juice of wood into *Salt-Petre*. He who rightly understandeth and followeth my Doctrine, will and shall set about the Work with diligence, will

without doubt attain his end. But if he tries with a Sandy stone, he will effect nothing. For stones of this sort want a nourishing Salt, and they wholly refuse solution by the Liquor of Wood, so far are they from imbibing, coagulating, and changing it into a Dungy Salt. But after the following manner any one may prove, that natural *Salt-Petre* may be made of the stones of which Lime is made, and the juice of Wood. Let him take some pieces of this sort of Lime-stone, not yet burnt (for when burnt, it is much more facile, as I have taught) and immerge or dip them all over in the Vinegar of Wood, and dry them in the heat of the Sun, or some other warm place, and let him repeat this labour so often until they be so soft that they may be rubbed or ground to pieces like Earth. From this ground matter extract the Salt with Rain-water, which will be plainly like to *Salt-Petre*. So of the Stone is made Earth; of the Salt of that Stone, and the Vinegar of Wood, *Salt-Petre*; or a salt equally serving with the Dung of Cows or Sheep, for the dunging of all Vegetables.

Nevertheless we have not written these things to that end, as if it were necessary to plant Rocks with Vines, by the help of the Vinegar of Wood. Our purpose is only to set forth how the great efficacy of the juice of Wood may be known, and how by its help, fertility may be procured even to the hardest Rocks, which being hitherto unknown and unheard of, my diligent search and enquiry hath now brought to light. Let it not seem absurd to any, that I ascribe so great power to the Vinegar of Wood; for common Vinegar doth the same thing in softening of hard Rocks: Why then should not this acid juice of Wood do it, which far exceeds the common in strength and sharpness? It is said, that *Hambal* made a passage through the *Alps*, for himself and his Army, softening the Rocks by the benefit of Vinegar; what Vinegar that was, Histories do not mention. Perhaps it was the Vinegar of Wine; but if he had had the Vinegar of Wood, he might sooner have attained his desire.

This *Artem*, without doubt, will give occasion of finding out many other profitable things, by the help of this Vinegar. I have opened the way, let another come, who by searching further may enlarge it, that thereby some perfection may the sooner be acquired. There are many things lie hidden in Nature, which through our sloth and negligence not being sought after, yield no profit to Mankind. But I doubt not but time will produce sedulous men, who will make a further progress in this Vinegar, so that much profit may redound from it.

There is found another kind of stones, which for the most part is used for the building of Houses, which being soft, is easily cut, so that steps or stairs, and Window-frames are made of it. It is to be reduced by the help of Fire into a Calx of a white, alby, and reddish colour; it also refuseth to be melted; nor is it like to Sandy stones, but is Partaker of both natures, and contains much *Salt-Petre*. But neither by its reduction into a Calx, nor by the pouring on of water, can it be extorted from them, except it be first prepared after a singular manner, for then it yields to water; concerning which thing I have written a peculiar Treatise, which God willing shall shortly come forth. There are whole Mountains of this sort of stone, containing a great Treasure of *Salt-Petre*, which hath hitherto been known to none.

These few things I was willing to offer to Country-men, concerning the pressing of wood, and the

utility thereof. The Circulatory Vessels in which the juice of the wood, and all the salts of the Air are animated by an incessant motion, and converted into *Salt-Petre*, I will not divulge at this time, but reserve them for my self and my Friends. [*These are described in the Third Part of The Prosperity of Germany.*]

In the mean time this excellent Art will not sleep, but will be exercised in many places. Now whosoever shall need the same, he will know what is to be done. For I have determined to bestow the fame for the good of my Neighbour, lest it should be buried with me in oblivion.

I have also an Artificial Invention (which is taught in *The Prosperity of Germany*) of turning common salt in the space of a few hours, so that it shall be plainly like *Salt-Petre*, for the enriching of poor, lean fields; and yet an hundred weight of it will scarce cost a *Dalder* (which is about 4 s. 6 d.) Which is indeed a singular Gift of God in these last times, which will be highly profitable both to the Rich and Poor, in all places of the World. For if the Culture of Wine and Corn shall every where become better, and more profitable, by the help of this Art, it cannot be, but that all men will receive profit, and obtain a more commodious way of living.

For by this Art, not only all Fields, whether they have lately brought forth Fruit, or whether they have lain fallow, and for some time brought forth nothing, are brought to that condition, that they may bear Fruit every year: but also barren places, which would never bring forth any Fruit, are rendered fertile; and fit to bear Fruit; so that no place can be found in the world, how barren soever it be, which by this *medicum* may not be rendered fertile. Moreover, this Art is to be greatly esteemed, because by it ground may be fattened in those places where no Cattel are found, and therefore afford no dung; seeing that hitherto no other than the ordinary way of dunging hath been known.

So also in places far remote from the Dwellings of men, to which Dung cannot be carried, this Art may be exercised with great profit; especially when Dung is difficult to be procured, or costs dear, and is not carried to those remote places without great charge, for which reason they cannot be tilled, but are forced to lie uncultivated.

Seeing that one Hoghead of my fattening Salt can effect more than some Cart-loads of common Dung. Nevertheless this is to be noted, That when any Field dunged with the said salt, is to be sowed with Corn, the seed is first to be macerated or steeped for one night in water, in which that salt is dissolved. For being so prepared, it will grow faster than if it had been committed to the Earth, without any foregoing maceration.

Consider, when the Soldiers have taken away the Horses and Carts, carried away the Oxen, devoured the Cows and Sheep, and wasted the whole Country, by what means shall the wasted Fields be dunged and restored to the Husband-man, that returning to their former fruitfulness, he may reap from them the expected Fruit.

Indeed, in time of Peace, when Horses and Oxen abound both for the ploughing of the ground, and making of Dung, Dung is always of worth, there never being too much of it, and therefore this my Invention may bring not a little profit. Whence it may be of a far greater advantage in those places

ces, where (by the Divine permission) those Locusts have eaten up all things. Ought we not then to receive so excellent a Gift of God with all Thankfulness?

The Omnipotent GOD give to us all His Grace, that we may shut all temporal and carnal Security, as the deceitful snare of the Devil, and seek after that which is eternal, constant, and perpetual. Amen.

Arcanum II.

Being a Gift preferred to rich Merchants, &c. that they may improve their Money and Estates without Usury.

Although I had determined to treat of this *Arcanum*, with other excellent uses of *Salt-Petre* in the emendation of Metals, in the Third Part of *The Prosperity of Germany*; yet for certain reasons I have deferred the publishing of that Book for some time; but considering my profitable Inventions of making *Salt-Petre*, and not doubting but that there will be found men who will put *Salt-Petre* to better uses than that of making Gun-powder, I could not forbear here to describe one good and profitable use of the said salt in the emendation of Metals, which is free for any boldly to experience, seeing that I have written the very Truth. He that shall follow the fence of my words, and hath some skill in metallick Labours, will not lose his pains: but will thence reap no contemptible profit. But if any man would perwade himself that such a work is to be done without labour and trouble, and great Masses of Gold to be obtained with idleness, he will be greatly deceived, not considering that this requires his putting his hand to the plough, and using great diligence.

I have described the following Operation openly and clearly; affirming, that it will succeed to the Operator, according to my description. If any shall erre in the performance, let him blame himself and his own ignorance, and not me. For in this process all things are plain, and to be understood according to the Letter, and may also be performed by an easie imitation.

The manner of the Operation.

R. of Copper one part, of Gold or Silver two parts, and of *Regulus Martis* three parts, all which melt together in a good and well-covered Crucible, taking great heed that no Coals fall into the Crucible and corrupt the Work. All being melted, and the cover taken off, yet warily that no Coals fall into the Crucible, cast in as much *Salt-Petre*, well dried and powdered, as there is of Copper and *Regulus* in the Crucible, to the melted matter, and again cover the Crucible, with the same caution about the Coals, which so put about the Crucible, that they may not lie upon its Cover, but it may be at liberty, to be commodiously lifted up with the Tongs for the inspecting the Mass in the Crucible. For if the Fire should be too great, the *Salt-Petre* would boil over the Crucible, and infer loss. And this may easily happen, seeing that the *Salt-Petre* entering and working upon the *Regulus* and Copper, sweltheth and riseth up. Where-

fore it is necessary, that this Work should be done in such a Furnace, as I have described in the Fourth Part of my Furnaces, having its doors, by which the Fire may be governed, and rendered stronger or weaker.

After that the *Salt-Petre* hath imbibed the *Regulus* and Copper, and turned them into a reddish *Scoria*, which is wont to be done in the space of a quarter or half an hour, the lower door being opened, the upper one must be shut, that the Fire becoming stronger, may melt the *Scoria*, till they flow like water; which when you see, by lifting up the Cover a little, remove the Coals about the upper part of the Crucible, and take off the Cover, and having taken good hold of the Crucible with your Tongs, lift it out of the Furnace, and pour out the melted matter into a melting Cup or Cone, [Such a one is described by its Figure in the Fourth Part of Furnaces.] being first heat, and well lined within with Wax; in the bottom of which, when cold, there will be a *Regulus* of pure Gold, which being freed from the *Scoria*, will be so much encreased in weight, as it hath attracted from the Copper and *Regulus Martis*, which will be the fiftieth part of the weight of the Gold.

The red *Scoria*, which have a fiery taste upon the Tongue, contain the *Salt-Petre*, Copper, and *Regulus* reduced into a *Scoria*; which if you would separate from the *Salt-Petre*, as soon as you have parted it from the *Regulus*, put it again into the Crucible in the Furnace, put a Coal to it in the Crucible, which being well covered, let it again flow well for a quarter of an hour. In this Operation, the Coal or Coals put to the Metals, viz. the Copper and *Regulus* of Antimony, will separate them by precipitation from the *Salt-Petre*, so that they will become a *Regulus* together, and the fixed *Salt-Petre* will be separated, and rest upon the *Regulus*, from which being cooled, it may be removed by knocking it off. If the operation be rightly performed, you will recover almost all the *Regulus* and Copper: but little also of the *Salt-Petre* is lost, which hath now put on another nature, becomes fixt, and answereth in virtue to the salt of Tartar. NB. Because those *Scoria* cannot be so perfectly removed from the *Salt-Petre* by the Coals, but it still retaineth somewhat of the Copper and *Regulus*, which the Coals could not precipitate; they may be kept in some warm place, lest they be dissolved by the air, till you have a quantity of them; which being reduced by burning Coals, may yield their Metal. Of which more shall be said anon.

This Labour, although it squares not with the capacity of the rude and unskilful, nevertheless it is easie to be done by those who have any knowledge in the melting of Metals. But all the manners of operating cannot be so accurately delivered, that every unskilful man should presently be rendered capable of understanding them; I write the Truth openly, and he that well understandeth me, may rejoice with profit. I write not to unskilful *Tyras*, but only to those who know how to handle Metals in the Fire. It may be here asked, Whether this augmentation of the Gold, ariseth from the Copper, or from the *Regulus* of Antimony? I answer, from both, but more from the Copper than from the *Regulus*. For there is no Copper or Antimony found, from which Gold is not elicited after the aforesaid manner, seeing that there is in both an invisable and spiritual Gold, nevertheless one containeth more than another; and being

being melted with Gold, give it forth to the same, which also attracteth it. Therefore as often as Copper, and *Regulus* of Antimony, and *Salt-petre* shall be melted together with Gold, so often will the Gold receive an encrease; so that this Labour being repeated eight or ten times every day, there will be an augmentation of the Gold not to be contemned, for besides all the Cost, it will afford the daily Gain of one Floren out of an hundred. (*A Floren is 2 s. in Germany, about two and twenty pence value in our Money.*) This is certainly a profit to those who will put their Money to Usury, much more honourable and safe than their trusting it in the hands of others.

But seeing that this Labour is to be performed in Crucibles, (and that too in large ones, if the gain aforesaid be expected) it doth not want its trouble and difficulties; for if a man will use great Crucibles, he can hardly perform the Operation above three or four times in a day; and if he use small ones, although it be ten or eleven times repeated in a day, yet the profit will be very small. I will therefore here appoint a way to do it without Crucibles, upon Hearths instead of Crucibles, which neither let out the melted matter by running over, or by their cracking or breaking, as Crucibles are wont to do, but always remaining in the Oven or Furnace, save the trouble of putting in and taking out of the Fire. For Crucibles, how good soever they be, being exposed to the cold Air, by taking out, and thence being suddenly again put into a great heat, are very easily broken. From whence it is manifest, that great danger of losing some of the Gold attends the use of great Crucibles; so that their use is to be abstained from, altho' the Work it self be of great profit. But good strong Hearths may be used for this Labour, without all danger; for as long as they are left in the Furnace, so long they are good, and the melted Mass doth not flow out. If I had not found out this way of working with Hearths, I should not have divulged this operation, which is as followeth.

The manner of preparing the Hearths or Tests.

AN Iron Ring or Hoop is to be made, either square or round, of the thickness of one finger, and four fingers high (or deep) one side being a little narrower or lesser in compass than the other; being well smoothed or polished on its inside, having two ears or handles, whose magnitude and space will be known by the quantity of the matter which is to be daily handled. To prepare the Focus or Hearth, place your Ring or Hoop upon some smooth stone, and then put into it, so standing, your Earth, being first rightly prepared, (*for this purpose our Staffordshire Clay is excellent, as also for making of Crucibles to abide the Fire*) so that it may a little exceed the upper superficies of your Hoop, force it down strongly with a broad Iron Hammer, by beating or knocking it in, and what riseth above the top of the Hoop, cut off with a Knife, that it may be even with the Ring; then remove it with the Ring, and strew upon the stone some fine sand, or rather the fine powder of broken Crucibles, upon which set the Ring, with the bottom upwards, that the other side, which before lay upon the stone, may be wrought in with the Hammer, as the first, so that the Ring or Mould may be exactly filled with the Earth. The Focus or Hearth being prepared in this manner, the larger side thereof is to be so excavated or hollowed away by a

bowed or crooked Knife, having two handles, so that the rotundity declining from the Superfices of the Ring, even to its middle, where inclining it self, it may keep the thickness almost of a finger at the top or superficies of the Ring, and so it will become like a Vessel or Pan, having a round or spherical Cavity, such Hearths or Tests are wont to be prepared of Ashes, for the bringing of Gold and Silver to a purity in Metallick Mines, Mints, &c. at length that hollowed roundness is every where to be smoothed with a smooth and round Hammer or Mallet, and after the smoothing, the whole Test being inverted with the Hoop, is to be set upon a Board, without stirring it; if the inside of the Hoop or Ring were before besmeared well with Oil, it will the easier come off of the Test, which being exposed to the Air, and dried a little, is then to be set in the heat of the Sun or warm Furnace, that all the humidity being taken away, it may obtain its requisite dryness, before it be put into the Furnace to endure the Fire; for except it be very well dried, it will crack or chape in the Furnace, and be wholly unprofitable for this Work.

The Test being taken out of the Ring, and set by, the inside of the Ring is again to be anointed with Oil or Grease, for the making of another Test, of which so many are to be made as need requires, or the quantity of the prepared Earth will allow. The earth that was left in the hollowing of the Test being mixed with the rest, whilst it is yet moist, serveth again, so that there is no waste or loss of the Earth. The same earth also serves for the making of the Covers or arched Roofs with which the Tests are to be covered, to keep the Coals from falling into the melted matter. NB. There is no need of having two Hammers, seeing that one sufficeth, having one end of a hands breadth, and smooth, and the other end round.

The way of making the Covers of the Tests, which are called Muffles.

First, a Type or Mold is to be made of Wood, answering to the bigness of the Test, but not with one Handle, as those are made for the purifying of silver, but with two oblong Necks, and without Claps or Chinks, which otherwise are wont to happen, that so the Cover may remain entire. Then to this wooden Mould the Earth is to be applied, and the Cover to be wrought in the usual manner.

Of the Figure of the Furnace.

THE Furnace is so to be built, that it may have within-side the space of an hands breadth all round the Test from its Walls, for Coals, the Test standing in the middle; so that the magnitude of the Furnace is to be proportionable to that of the Test, and may be either round or square, provided it be built with good Bricks, or fit Stones, and Lute, or Earth rightly prepared. There ought to be at least a span between the bottom and the grate, which also ought not to be fastened to the Furnace, but standing upon four Feet, that it may be taken in and out by the fore-side of the Furnace (when need requires) being always open. Let the Furnace rise above the Grate the height of a span, being every way close, having no door. Upon this height of a span a hole is to be left of an hands breadth and height: by

which the Telt may be inspected, and the mixed Metals put in and taken out, and the Fire may have its passage. NB. But if the Telt should be above a span over, which would also cause the Furnace to be the greater; then that hole being too little, would not allow a sufficient passage for the Fire; therefore the hole is to bear a due proportion to them. From this hole, nourishing the Fire by its ventilation, the Furnace is yet to be carried up the height of two spans, to its upper hole or top, where the Coals are to be put in. Moreover, an Iron Cover is to be made with hollow Superficies, with Iron-Buttons, or little Knobs infixed, by which the Lute being put on, may stick fast; the Convex or upper part of the Cover must have a Handle, by which it may be lifted up when the Coals are to be put in, and afterwards put down again to shut the Furnace. See the Figure of this Furnace, in all its parts, at the beginning of this Continuation of Miraculum Mundi, noted at the top with Fig. 62.

- A, The Furnace, as it is working.
- B, The lower part of the Furnace open.
- C, The upper part of the Furnace.
- D, The Grate.
- E, The Hearth or Telt.
- F, The Muffle that belongs to the Hearth.
- G, The Cover of the Furnace, with which it is to be covered when the Coals are in and at work.
- H, The Vent for the Smoak.

When you will work with the Furnace, first put in the Grate, and upon it the foot or prop made of firm Lute, and upon it the prepared Telt, and upon the Telt its Cover or Muffle, the foremost neck of which ought to come close to the hole on the fore side of the Furnace, and the hindmost neck to touch the back of the same. The foot also which supports the Telt, ought to touch the fore-part of the Furnace, that the space between the Telt and the Wall of the Furnace, may be well flopt or clofed. Also, if the neck of the Cover or Muffle doth not fit close enough to the foremost Wall, the joints are to be well clofed with Lute mixed with Hair, that the Fire may have no passage by them, but may pass through the hindmost neck of the said Cover, and under the Cover it self into the Telt, and thence out of the foremost neck. If the Fire shall have any other passage by the foremost neck, the heat will not be sufficient to melt the Metal. Therefore the chief Artifice concerning this thing, is the building of the Furnace in due form and proportion. An Iron door is to be fitted to the Furnace under the Grate, for the governing the Fire, by which it may be encreased or diminished, as need shall require. And the other hole in the superior and fore-part of the Furnace, by which the Metals are put in and taken out of the Telt, is also to have a door, that necessity requiring, the fire may be governed, and if too great, it may be restrained. To this also a little Chimney or Funnel is to be fitted, which may receive and carry away the noxious fumes of the Metals and Coals, that they may not hurt the Operator. All these things being rightly prepared, the Furnace being well dried, is to be filled with Coals, and to be covered with its Cover, a lighted Coal or two being put next the Grate, the doors are to be shut, that the Fire may kindle by degrees, by which the danger of breaking the Telt, and its Cover, the Muffle, by a sudden heat may be avoided. The Furnace, Telt, and

Muffle, being all red hot, the Metals (*viz.* the Gold which is to be augmented, and the Copper and *Regulus* of Antimony, from which the augmentation is expected) are to be put upon the Telt with an Iron Ladle, the great door below, and the little one above, are to be opened, that the Fire growing more powerful, may forthwith melt the Metals on the Telt, which being rightly melted, a little dry Salt-petre in powder is to be cast in upon them with an Iron Ladle, which will presently change a portion of the melted matter into a Scoria: When it flows no longer, but ceaseth from operating on the Metals, lying upon them like Dross, a little more Salt-petre is to be cast upon the melted Metals, which will again change part of them into Scoria. This Injection of Salt-petre is to be continued so long, until the Scoria shall be no longer hard, but remain liquid like Water, which is a sign that the Salt-petre hath abstracted the Copper and *Regulus* of Antimony from the Gold, and its operation to be finished. And so much *Regulus* of Antimony and Copper is not to be put upon the Telt, [I believe the word *not* is an error of the Printer, in the Copy, and ought to be left out] that it, when a due portion of Salt-petre shall be added, may be full to the brim, and the Coals not be burnt out in vain, in the empty Telt, which is well to be noted. The fluid Scoria of the Salt-petre, Copper, and *Regulus* of Antimony, are so long to be kept in Flux upon the Gold, as you think the Telt can suffer it; for by how much the longer the Gold shall remain in its Flux, under these Scoria, so much the more of spiritual Gold it will attract from them, and render it corporeal; and the Gain will be so much the greater. Nevertheless, for the greater certainty sake, after the Scoria have lain ten or twelve hours in Flux upon the Gold, they may be taken out of the Telt, to see whether the Telt be yet strong enough to sustain them longer in flux, because in a continual flux they are wont to attenuate and perforate the Telt with holes, especially if they were not prepared of good Earth, which is able to endure the Fire. Therefore, if you find the telt yet strong and thick, and not perforated with holes, you may again add the Scoria to the Gold lying in the telt, and keep them so long in flux, as you think the telt will hold good. When the Scoria condense themselves, and flow with difficulty, a little fresh Salt-petre is to be added, by which being reduced to a thinner flux, they may give nourishment and encrease to the Gold, which in this operation hath the place of a feed, as the Copper and *Regulus* of Antimony supply the place of the earth, by affording aliment and augmentation to the Gold; the Salt-petre is in the stead of Rain, which moisteneth the Earth, and rendereth it fruitful; therefore by how much the longer the Gold lieth and groweth in this Earth, so much the more encrease it obtaineth. After the telt is no longer fit to bear the fire, or you would leave working, open the lower door of the Furnace, and take off the Cover from the top, that the heat of the fire may be diverted from the telt, and the Scoria grow thick, and the Gold under them hard, draw out the Scoria by degrees with an Iron Hook, from the Gold, that it may remain in the telt intire, and in one compact Mass, and not be mixed with the Scoria, like Grains, and occasion loss. All the Scoria being taken out, the Gold is to be freed from the telt with a thin sharp-pointed Iron, then taken out with the tongs, and weighed, to see what encrease it hath got.

NB. That

NB. That as long as the Telt keeps firm and good, it were better not to take out the mass, but to be left upon the Gold in continual flux. This is a Labour not to be despised, seeing that the first Coals being burnt out, more are to be added only; so that this operation may be continued for some daies, without intermission, provided the Telts be well made, which also ought to be done if you expect any profit; of which you need in no wise doubt, if the operation be rightly instituted; especially if the Antimony and Iron, of which the *Regulus* is made, be good: For the more Gold the Antimony, Iron, and Copper shall contain, the more volatile Gold the fixed Gold which is melted under them, will attract to it self. But if you want such Metals as are rich in Gold, and are forced to be content with the common, the Gold will nevertheless get an encrease in the Operation. NB. When Metals containing Gold are to be had, there is no need to keep the first Scoria in so long a flux upon the Gold, seeing that presently after the Copper and *Regulus* of Antimony shall be turned into Scoria by the Salt-petre, they may be removed from the Gold with an Iron Hook, and new Metals forthwith added, and again reduced into Scoria by the Salt-petre. This labour of removing the Scoria, and adding fresh Metals, being long continued, will add the greater encrease to the Gold, because Copper, Iron, and Antimony contain much corporeal Gold, which in their reduction into Scoria, associateth it self with the Gold. Therefore when those Scoria are withdrawn, and new Metals added, it cannot be, but the encrease of the Gold must be greater than proceedeth from the first Scoria, in which only the spiritual Gold is rendered corporeal. The addition of fresh Metals, and the abstraction of the Scoria repeated 10, 15, yea 20 times a day, must necessarily give a great encrease to the Gold, if the Metals contain both corporeal and spiritual Gold. The abstracted Scoria may be reduced in a Telt of the same Furnace (of which Telts there ought to be many in readines) and the Copper and *Regulus* precipitated from them, and put to other uses, of which my other Writings every where make mention. And they are precipitated by the Powder of Coals, or Antimony. The way of precipitation is this; the Salt-petre hath absorbed the Sulphurous Metals, *viz.* the Copper and *Regulus Martis*, and changed them into Scoria. Now, if to these Scoria some other Sulphur be injected, which the Salt-petre coveteth more than the Copper and *Regulus* of Antimony, it layeth hold on that, by which those Metals which it had first absorbed, are dissolved, and fall to the bottom. But the *Regulus* and Copper cannot be so separated by precipitation, but that somewhat of them will yet adhere to the Salt-petre. These may be fixed together, that they may render Gold again in fusion, or the fixe Nitre may be extracted from the Scoria, with Rain-water, to be used for other Labours; as shall be taught hereafter. The residue of the Scoria will be yet of use to Potters, to glaze their Earthen Vessels. But if the Scoria and Salt-petre be not separated, but left together, they may be used with greater profit for the making of Salt-petre, or for the dunging of Land (of which we shall presently speak) than if they be separated. The manner of doing these things shall be described in their order. But first it seems good to me to exhibit a proof, by which every one may know the certainty of this matter, *viz.* that this work doth not

only afford a profit to the Operator, not to be contented, but also that the Gold doth obtain a true and certain encrease from the Copper and *Regulus* of Antimony, whereby the Work may be undertaken with the greater boldness and confidence; which I thus demonstrate. Take a small piece of silver, freed from its gold by *Aqua fortis*, that you may be sure there is no Gold in it: to which, in fusion, adjoin so much Copper and Antimonial *Regulus*, as being reduced into Scoria by Salt-petre, and again separated from the silver, may leave it malleable and ductile. This being dissolved in *Aqua fortis*, will leave at the bottom undissolved a reddish powder of gold, and *Regulus* of Antimony. Now, so much as there shall be of this Gold, so much and no more corporeal Gold did the Copper and *Regulus* contain, which the Silver hath absorbed. The Scoria possess no more corporeal Gold, but yet abound with spiritual, which you may find by the following Experiment. Cover those Scoria put into a new Crucible with Powder of Coals, and set the Crucible into a small Wind-Furnace, that they may melt. In this melting, the Nitre will rather enter the Sulphur of the Coals, than that of the Metals; and associating it self to that, dissolveth the Copper and *Regulus*. Which being done, pour out the melted Mass into a Cone, and when it is cold, separate the *Regulus* separated to the bottom, which will be the same Copper and *Regulus* of Antimony which the silver hath deprived of their corporeal gold; which is demonstrated as followeth: Take a bit of Silver, cleared from its Gold, which join with the said *Regulus* by melting, and reduce the melted mass by Salt-petre into Scoria, as before, pour the mass into a Cone, and being cold, separate the Silver. This being dissolved in *Aqua fortis*, leaves at the bottom no reddish powder, as the first silver did. By which it clearly appears, that the Copper and *Regulus* of Antimony had yielded all their corporeal Gold to the Silver in fusion, which nevertheless can afford no gain, except the Labour be many times repeated with fresh Copper and *Regulus*. But because this repetition is wont to require no small quantity of Copper, *Regulus* of Antimony, and Salt-petre, to bring the silver to a golden nature; and moreover, every one knoweth not how to make profit of the Copper and *Regulus* deprived of their Gold, or to put them to other uses, and that Salt-petre is not seldom sold at a great price, no great profit can accrue by this Labour to such. Nevertheless, they will obtain no small gain, who after the extraction of the gold, know how to use the Copper, Antimonial *Regulus*, and Salt-petre, which I have shewed in many places of my Writings. But those Metals being melted with Gold, and turned into Scoria by salt-petre, bring far greater profit than when wrought with silver. For somewhat of the silver is consumed, as well as somewhat acquired by it; but nothing of the gold is lost, if the Crucible be firm, that nothing run out. NB. If any gain be expected from silver, such Iron, Antimony, and Copper are to be used, as are pregnant with Gold, and to be often abstracted from the silver, and the metals themselves afterwards to be put to other uses, bringing profit, to say nothing of the Salt-petre, which may be made at a far cheaper rate (that it can be bought) by those who seek profit from Silver. I have intimated these Experiments, to demonstrate that every Cop-

Ecc
pct

per, and every *Regulus Martis* contain somewhat of corporeal Gold, and being reduced into Scoria, do yield it to the adjoined Gold or Silver; and that nothing more can be extorted from them, except being reduced into Scoria by Nitre, they be for some time kept in Flux upon the silver, or Gold which is better, that their spiritual Gold may insinuate it self into the corporeal, and augment it, which the following Experiment sheweth.

Take of Copper, and Regulus of Antimony, deprived of all corporeal gold, by the addition of other gold, what quantity you will, melt them with gold, and convert the Copper and Regulus into Scoria, after the usual manner, with *Salt-Petre*, which keep in Flux upon the Gold for 6, 8, or 10 hours, and then pour all out into a Cone; the gold being separated from the scoria, and weighed, will shew what it hath gained in this operation. This encrease from the twofold matter added, viz. the Copper and *Regulus Martis*, is profit; which notwithstanding proceeds more from the one than the other, as this Experiment will prove. Take one part of silver, which holds no gold, and one part of *Regulus Martis*, being melted in a Crucible, reduce them, as hath been often said, by salt-petre, into scoria, and being well melted, pour them out into a small Ingot; which when cold, separate the scoria from the silver with a Hammer; the silver will be pure white, and of very easy fusion, but will contain nothing of gold. NB. If to the silver and Regulus of Antimony, you shall also add Copper, and then turn all into scoria by the help of salt-petre, and when well melted, pour them into an Ingot, so that the scoria flow upon the silver. This silver being separated from the scoria with a Hammer, or by lying a while in water, you shall find that part which was covered by the melted scoria, to be all over so gilt, that you can scarce rub it off with your fingers, which Gold hath adjoined it self to the Silver, chiefly from the Copper. For if more Gold had proceeded from the Regulus, the melted Silver would also necessarily have been gilded by that, which yet without the addition of Copper is not wont to be. Nevertheless, let no man persuade himself that the Regulus of Antimony being omitted, the same augmentation would happen, because the greatest part of the Gold proceeds from the Copper. For without the Regulus, the Copper would not suffer it self to be reduced into Scoria by the Salt-petre; so that necessity requireth, that all those matters should be conjoined in the said manner, to acquire any profit.

Here thou hast, benevolent Reader, Specimens sufficient for the trying the truth and certainty of this thing: It's free for every man to enter upon the prescribed way with greater and longer Operations, that he may attain the desired profit.

What I have many times said, I say again, That this Operation is true, and brings great profit, provided it be instituted in a due manner. The Salt-Petre is the chief thing required in this Operation, which he that knows how to prepare with small cost, and understands what I have written, may boldly undertake the Work; but he that must buy it at a dear rate, I will not advise to meddle with it. He that cannot understand what I write, 'tis better for him to spare his labour and charge, and employ himself in those things which do not exceed his capacity.

It behoveth me now to shew the use and benefit which the scoria which are left in this Operation: are

of, that there may be no waste or loss. But the quantity of scoria in this Operation will be more or less, according as it shall be exercised. If good Antimony, Copper, and Iron, which contain corporeal Gold, may be had in plenty, and Salt-petre also cheap, the loss will not be great, if the scoria should not be altogether put to the best advantage. For if there be enough of the Copper, *Regulus Martis*, and Salt-petre to be had, they are to be reduced into scoria, flowing upon the Gold, that with it they may leave the Gold contained in them. But here no regard is had to the spiritual or fugacious Gold which they contain, which is laid aside with the scoria, and new Copper and Regulus is put to the Gold, and the scoria again laid aside for other uses, so that in one and the same day, this labour of adding new matter, and as oft separating the scoria, may be repeated ten or twelve times. Whence it comes to pass, that the Gold is every time enriched, and attracteth more corporeal Gold from those matters in one day, than it could be in fourteen daies, if they contained only spiritual Gold. But on the contrary, a great quantity of Copper, Regulus, and Salt-petre are required for this labour, which if they cannot be had cheap, the charge will be the greater, seeing that those Metals which are pregnant with corporeal Gold, will abundantly compensate the charge, especially if benefit be made of the scoria, which we will presently shew. But if a quantity of the said matters be wanting, and vulgar Antimony and Copper be used for the extracting the spiritual Gold only, there will not be made so many Scoria; but it sufficeth, that the first scoria be left so long in flux upon the gold or silver, until they have yielded some augmentation to the same. And in the mean time, the addition of no other thing is required; but Salt-petre, of which a little is to be injected to the hardened scoria, to render them more fusile, and to cover the Gold the better with their flux. This way will not cost so much, besides a good quantity of Coals: Nor will the Work it self be so troublesome, seeing that it need be inspected only once in two or three hours, and any Boy may govern the fire. Or if the Furnace be so built, that (like a dull Henry) the Coals constantly sliding down, the fire may feed it self, the Operation may be continued night and day without any looking after. In the working the other way with Metals containing corporeal Gold, there is more labour and care, seeing that every hour the scoria ought to be removed, and new metals to be added. Therefore every man may chuse that which is most convenient for him.

Moreover, where neither Antimony, Copper, or Iron abounding with corporeal Gold, are to be had, the Operation may be instituted in another manner, and applied to the making of salt-petre in abundance, and with small costs. For after the Regulus and Copper, in flux upon the gold, are reduced to scoria, they are not to be removed, as otherwise they are wont, but the Copper with the Regulus must be precipitated from the Nitre, by the Powder of Coals, in which precipitation the gold taken to it self the metal reduced into scoria, so that the fixt Nitre only is to be removed, which is afterwards to be put to other uses: And the Copper and Regulus, by the addition of new salt-petre, are again to be reduced to scoria, and to be precipitated from the Nitre by the Powder of Coals, and the Nitre again removed: So the Copper and Regulus will always

remain in flux upon the gold in the Test, and nothing but the added Nitre will be every time separated.

NB. This Labour doth not indeed draw forth so much gold as that which hath new metals added every time to the gold; but yet it excelleth that in which the Metals are kept in a continual flux upon the gold, without the addition of new; for as often as the Copper, with the Regulus, are burnt by the Nitre, so often the Nitre burneth and consumeth somewhat of their superfluous sulphur, and by how much the more the combustible sulphur is burnt and consumed, by so much the more the spiritual gold in it is dissolved, and adjoineth it self to the corporeal gold, to get it self a body.

And this is the difference of those Operations, of which a man may chuse which he pleaseth, or rather that which fits the matters, he hath at hand. Whichsoever he shall undertake, it will afford a profit not to be slighted, especially if he pay not too dear for his Nitre, or can make it himself at a cheap rate.

How Profit may be made of the Scoria which remain after this Operation.

IT behoveth the studious of Art to know, that there is a difference in the scoria removed from the gold by the forementioned Operations. Those which are removed from the gold only remaining in the test, and in which the Nitre, Antimony, and Copper remain mixt, are metallick, from which the Copper and Regulus may be precipitated and separated, by the casting in of crude Antimony or Powder of Coals. The scoria from which the Metals are already precipitated in the test, are nothing but fixt Nitre. The scoria also differ, in which the Metals are precipitated by Antimony, from those which are precipitated by Coals; those partake more of sulphur, these less; for the sulphur of coals differs in its nature from the sulphur of antimony, and requireth that a difference be observed, and that either scoria being put to its due use, it may bring the desired profit. And this is the difference: When the Copper, with the *Regulus Martis*, is precipitated by coals, that the Copper, with the Regulus of Antimony, is precipitated, but the Iron which was in the Regulus admitteth not of precipitation, but remaineth in the scoria; whence it comes to pass, that the Regulus, after precipitation, is found to be lighter than when it was put into the Crucible. Therefore what the precipitated Regulus hath lost, necessarily remaineth in the scoria; for which cause those scoria are of more hard and difficult fusion than those which remain after the precipitation with Antimony: For when the metals are precipitated by the calling in of Antimony, to one pound of scoria, an ounce, and sometimes more, of Antimony, is cast in, which precipitateth all the Copper and the Regulus attracted by the Nitre, and giveth a more ready fusion to the scoria. But nothing more plainly sheweth the difference, than the pouring of water upon the scoria, to make a *lixivium*. The scoria upon which the coals were cast, yield a clearer and sharper *lixivium* than those on which Antimony was cast. On the contrary, the Antimonial scoria, by reason of the Antimonial combustible sulphur, are of a drier nature and property.

The best thing in both the scoria, is the fixt Nitre, which is to be drawn out of them by Water, and may be put to various uses, with no small profit.

In the first place, from those scoria a good Medicinal Tincture may be drawn by the affusion of spirit of Wine, of which mention is made in divers places of my Writings. Those scoria far exceed all Dung, and also common salt-petre it self, in promoting of vegetation. Nevertheless, they are first to be made more temperate, because they are too fiery to be used alone. They also effectually promote the augmentation of Gold, and also the health of the humane body, by their most pure Essence extracted by the spirit of Wine.

They may without injury be called *The Philosophick Dung*, because they augment the growing power in Vegetables, Animals, and Minerals, neither in Operations of this kind is there any Equal in the world.

Their smell is like that of humane Excrements; nor are they unlike to them in Aspect, but most efficacious in their use. There are many things of great moment yet lie hid in them, all which it is not for me to describe. Those things which I have hitherto written, I have often done with my own hands, and proved by many Experiments. What I deliver is not from hear-say, or the reading of others Books, being resolved to publish those things only, which an infallible Experience hath taught me, so that every man may boldly, and without any doubting, give credit to them.

Moreover, this fixt Nitre is endowed with the same virtue with other strong *lixivium*: Nevertheless, it is more efficacious than that of any common Wood, inasmuch as Nitre exceedeth the fixed salt of Wood in its maturity. The residue of the scoria from which the *lixivium* is extracted, serveth for the glazing of earthen Vessels.

He that desireth to know more of fixed Nitre, may find it in my *Furnaces*, as also in my *Pharmacopoeia*, and especially in *The Explication of Miraculum Mundi*; where he will meet with many things worthy of admiration. For the Philosophick Dung, see the 35 Article of *The Explication of Miraculum Mundi*, my Apology against *Farmer*, and the Description of my Preis for Wood, in this Treatise; in which places he may find those things which will abundantly satisfy him. Concerning this Universal (tho' contemptible) subject Nitre, we will treat more; God willing, in the following second part of *Miraculum Mundi*.

Here we have shewed the well-minded Reader, how by this one only Operation, he may encrease or augment his Gold, enrich his Fields with a fruitful soil, and preserve his health; so that there will be none who may not receive profit from it.

I cannot but here commemorate what some time happened to me in this Operation. When the Copper and *Regulus Martis* were mixed by melting together, and reduced into scoria by Nitre, the matter thence proceeding was wonderful, appearing in variety of fair Colours, emulating a Peacocks Tail. Therefore when I saw such various colours, I presently thought with my self, whether that matter might not be fit for making a Tincture, which might change the imperfect Metals into Gold; seeing that I had read in some Philosophers, that there is more Tincture in Iron and Copper than in Gold, which gave me an occasion of considering whether

this conjunction of *Mars* and *Venus*, might not be the Adultery spoken of by the Poets, or rather the Vitriol of the Philosophers; for this matter retaineth a very fair greeness, not only in the fire, but also out of it, as well wet as dry. Whence I began to perfwade my self, that Iron was the Gold of Philosophers, Copper their *Luna*, and Antimony their *Argent-vive*, and Nitre to perform the Office of a *Solvent* or Bath, in which they are dissolved and digested. Being moved with all these things, that I might make a trial, according to my simplicity, I put all the said matters into a Glafs, and committed it to the *Vulcan*, (or the Fire) which being administr'd by degrees, all the matter pass'd together into a black colour; to which a very fair greeness, with variegated colours resembling the Tail of a Peacock, succeeded, which continued in the Fire for some weeks. But seeing that it would not at all be changed, I being wearied with the tediousness, took the fair matter out of the glafs, and put it into a Crucible, which I set in a Glafs-makers Furnace, that I might perform this Operation with the less Labour: And after three daies I again took it out, and I found all the matter changed into a glafs of a bloody colour, but not transparent. The Crucible being broken, I found in the bottom a little Regulus of an Iron-like colour; which being telled with Lead, yielded white Silver, which being dissolved in *Aqua-fortis*, left no Gold at the bottom. Being strook with admiration, I began to think whence that Silver should proceed, feeling that I did not expect Silver, but Gold; at length being satisfied in that, I was of opinion, that from this subject by one and the same labour, might be made both a red and a white Tincture; but I have not hitherto had time and opportunity to try the truth of the matter experimentally. Whatsoever I have here written, is only that I might afford matter to others who are desirous of seeking, by whose diligent searches some good may be obtained. This Admonition I also think necessary, That they who endeavour to bring any subject to a constancy in the Fire, by fixing, as the Chymists call it, that they lute and close well their Vessels, lest the Air (which is a great impediment to the Operation) should hinder the Work.

For Example. A Wood-coal, for the greatest part, consisteth of a fugacious and immature Sulphur, mixt with a few faces, being put into an open Crucible, and set in a small Fire, it is presently burnt, and being all consumed, leaveth nothing in the Crucible, but a few Salt-ashes; but being put into a Crucible well closed and defended from the Air, and committed to a great Fire, and therein kept for many years, yet would lose nothing of its weight, colour and body, but would remain a black Coal, without any alteration. But on the contrary, if any Mercurial salt be added to the Coal in a due weight, and be enclosed with it in a crucible but one day, and kept in the fire, the coal will be changed into a red, fiery, heavy stone, more Metallick than Vegetable, whose admirable Virtues the Tongue cannot declare. Seeing therefore that from any fugacious and volatile Vegetable in so short a time a constant fixed thing may be made by Art, Why should not the same be made much better of some Mineral or Metal, which is much nearer to Fixity? And although these coals black the hand, nevertheless they contain much good, which he that knows how to come at, will by the

same easily make his hands white again, and draw that from it which is more conducive to the health of Man's Body, than from all the costly and fading things in the whole World. *A Word is enough to the Wife*. Although I have here shewed, that sulphurated Nitre is a true Medicine for Animals, Vegetables, and Minerals, yet I would not be understood as if I affirmed there was no other, which is not my intention, seeing that if this Medicine were to be generally used for Vegetables, it would be too costly, [and there are other things described in this Book for that purpose, which are far cheaper] and I have shewed it only to the end that the wonderful Works of GOD might be manifest to those who are willing to try. For if any one will macerate the seed of any Vegetable in the Tincture drawn from sulphurated Nitre, by the Spirit of Wine, in a warm Bath, he may from that macerated seed produce a growing Herb, in a few hours space.

A Tincture of this sort will effect more in curing of Diseases, than a whole Apothecary's Shop. But he that knoweth how to join some spiritual Gold with this Tincture, that the Gold may thence attract to it self nourishment and encrease, as a Vegetable doth from the Earth, will easily obtain a Universal Medicine. But if any think that I mean such a Medicine as changeth the imperfect Metals into Gold, in flux, he is mistaken, for that is to be attributed to the Stone of Philosophers only. But I call it Universal, as it is the chief Medicine of Animals, Vegetables, and Metals, which I intend always to keep by me, ready prepared, that I may render others partakers thereof. I intend also this Winter to prepare a great quantity of the Universal Medicine for Vegetables, by the benefit whereof Grain may be made to grow in meer Sand, that so this Invention may become profitable to many men, provided they will but undertake the work: Not that I intend to prepare this of Nitre, which is too costly for the Dugging of Fields. For common Salt, which is abundantly cheaper, in a few hours, may be so changed, that losing its corrosive Nature and Property, it becomes plainly like Nitre in taste, figure, and virtue, but not inflamable, and excellethe the Dung of Cattel for dugging of Land. Neither let any man fear that this Preparation of common Salt requireth much labour or trouble, or is difficult to be done; for he that shall see the Operation but once, will easily be able to understand and imitate the same.

Hence, seeing that in all places there are many barren Fields to be found, it cannot be, but that great profit may be acquired by it.

Arcanum III.

A Gift offered to all diligent Physicians.

The profitable use of Salt-Petree, in the Concentration of Metals, and Preparation of Excellent Medicines.

Although in the First Part of *Miraculum Mundi* I have described divers concentrations and emendations of Metals; nevertheless in those there is nothing common with that *Arcanum*, which I intend

tend here to describe. For those *Arcana* concern only the emendation of the imperfect Metals; but this also treateth of the Preparation of many excellent Medicines.

The manner of concentrating and amending of Metals by Nitre.

First, a Man is to be made of Iron, having two noses on his head, and on his crown a mouth, which may be opened, and again close shut. This, if it be to be used for the concentration of Metals, is to be so inserted into another man, made of Iron or Stone, that the inward head only may come forth of the outward man, but the rest of his body or belly may remain hidden in the belly of the exterior man. And to each nose of the head, glafs receivers are to be applied, to receive the vapours ascending from the hot stomach. When you use this man, you must render him bloody with fire, to make him hungry and greedy of food. When he grows extremely hungry, he is to be fed with a white Swan: When that Food shall be given to this Iron man, an admirable Water will ascend from his fiery stomach into his head, and thence by his two noses flow into the appointed Receivers; a Water, I say, which will be a true and efficacious *Aqua-vita*; for the Iron man consumeth the whole swan by digesting it, and changeth it into a most excellent and profitable Food for the King and Queen, by which they are corroborated, augmented, and grow. But before the Swan yieldeth up her spirit, the singeth her Swan-like song, which being ended, her breath expieth with a strong wind, and leaveth her roasted body for meat for the King, but her *anima* or spirit the consecratheth to the gods, that thence may be made a *Salvander*, a wholesome Medicament for men and metals.

This manner of operating, by which metals are wont to be concentrated, I was willing to describe in this Enigma: that it may be known to be no Fable, but that the same manner hath been described by other Philosophers before me. This appears from the sixth Key of *Basil*, where he delivers the like manner. *Basilus* writeth concerning *Salt-Petree* speaking of it self; *When my End is threatned, &c.* From which words it is manifest, that he used the same way for the particular and universal emendation of Metals, as also for the preparing of excellent Medicines. But because this Enigma is a little too obscure for the unskilful, I think good to interpret it word by word.

The Iron man is the destilling Vessel, which I have described in the Second Part of my Furnaces. This is put into another Iron or Stone Furnace, and the fire under it. To the noses or pipes of the upper parts, some Receivers are to be so applied, that at least three Glafs-Receiver may be applied to one nose, the first of which is to be firmly luted to the nose; the second must enter the perforated belly of the first Glafs, by a Pipe; and in like manner the third must be inserted into the belly of the second; the Pipe of the second Glafs, which entereth the belly of the first, is to be well luted; the third is not to be luted to the belly of the second, but to remain open, that the expiring gas may go out of the second into the third. To the other nose also three or four Receivers are to be applied after the same manner, but so that the last may re-

main unluted. The white Swan is the *Amalgama* of Tin and *Argent-vive*, to which Nitre is added; and it is done as presently you shall hear. [See the Figure of this Furnace, before the beginning of this Treatise, noted with pag. 96.]

A is the Furnace.

B, The Vessel in the Furnace.

C, The Hole with an hollow Verge, through which the Swan is conveyed into the Vessel.

D, The Tong holding the Corner with which the Vessel is to be covered as soon as the Swan is put in.

E, An Iron Ladle, wherewith the Swan is put into the Vessel.

F, The Receiver.

G, The Bench that supports the Receiver.

H, The Laborator.

R. one part of Tin, melt it in a Crucible, when it is melted, take the Crucible out of the Fire, and pour out the melted Tin into another earthen Vessel, and mix therewith one part of *Argent-vive*, which will presently be absorbed by the Tin, but the Tin will become so brittle and friable, that it may be ground upon a stone to fine powder. With this fine powder mix two parts of good and pure *Salt-Petree*, by grinding them well together, till the *Amalgama* cannot be known from the *Salt-Petree*, but one white powder be made of both. This powder is *The Swan of Basilus*, of which he prepareth Meat for the King; but I call it *The Fulmen of Jove*, by which all Metals are destroyed and reduced into nothing. And from this nothing, Metals much better and more noble are generated *de novo*. Concerning this destruction and regeneration of Metals, consult *Paracelsus's* Book of *The Fixation of Alchymists*, and the Third Part of my *Mineral Work*, and you shall find, that *Paracelsus* hath involved this Operation in obscure words, as also *Basilus*, who delivereth the same in his sixth Key, with the same obscurity, which here, without any covering, I have openly and clearly made manifest.

NB. I would have the studious of this Noble Science know, that *Jupiter* alone, or Tin mixt with Glafs only, in this artificial destillation by the fiery man, yields that medicinal spirit, without the addition of *Argent-vive*, and leaveth the meat or augment of O and S in the bottom. But that our Ancestors have adjoined *Mercury* or *Argent-vive*, I also by experience have found it profitable. But it is chiefly done for this end, that the Tin being rendered friable and fit for grinding, may the better be mixed with the Nitre; for it would be laborious and troublesome to file the Tin to mix and destil with the Nitre, as *Baptista Porta* teacheth in his *Natural Magick*. This reduction into Powder by Mercury, is performed in a very short time, and wonderfully promoteth the Labour, whilst the Mercury acting upon the porous Jupiter, penetrateth him, and rendereth him compact. On the contrary, *The Fulmen of Jove* burneth the wings of Mercury, and maketh him remain stable; so Jupiter is an help to Mercury, and Mercury to Jupiter, and both become more noble by the power and efficacy of *Salt-petree*; for Jupiter possesseth much combustible sulphur, which nevertheless burneth not *per se*, without some help; in the effecting of which *Salt-Petree* is a Master, having neither superiour nor equal. Well doth *Basil* say, that sulphur only is

Nitre's best Friend, and also its worst Enemy, which we have found to be most true, in this operation.

When the Tin and Nitre grow hot together, they take Flame like Gun-powder; the purer part, like some subtle spirit, vanisheth into the Air, and the more fixed, stable, and better remaineth at the bottom; for the noxious and superfluous Sulphur of the Tin is burnt by the Salt-Petre, which being separated, the rest of the Tin acquirith a more compact and better body. The Mercury also adjoined in this operation, yieldeth whatsoever good he hath, offering his Spirit for Medicine, and his Body for the encrease of Gold or Silver; so that more profit accrues by the addition of Mercury, than if Jupiter were fulminated by Nitre alone. Very few will believe how noble a Sulphur there is hid in Jupiter, which can be made manifest by Nitre only. Truly Mercury can by no way be better deceived and overcome, than by the Fulmen of *Jove*, which casts a terrour upon all the gods. Therefore they are very wary, lest they be touched with that Thunder, and slain with sudden death. If Jupiter were destitute of his most efficacious Thunder, neither his father $\bar{\nu}$, nor Θ , nor Δ , with the rest of the gods, would be subject to him. Mars, Venus, and Mercury would only sport themselves with him. Mars would shew him his Sword, ϱ would intangle him with her amorous Net, and ϑ , the deluder of all dreaming Alchymists, would fly away, and laugh at him. *Vulens nolens* they all fear Jupiter, and must allow him the Empire; the conversation of *Jove* is perilous to all the Metals, even as it often brings subjects into no small danger, to converse with their Prince. Hence the vulgar Proverb, *Procul a jove, procul a fulmine*; He that keeps from the fire, is not in danger of being burnt.

But leaving those things, we will now address our selves to the operation it self, and plainly shew how it is to be performed. And first, let the studious know that this Work requires a diligent and skilful Operator; but he who knows not how with skill to handle the Fire, I advise him to abstain from this Work. The Art is true and excellent, so that he that understands but a little, may see the whole Work to stand upon a firm foundation drawn from Nature. He that knows the nature of Metals and Minerals, knows that the goodness and perfection of Gold and Silver, the best of Metals, consists in a stable, fixed, and incombustible matter, and on the contrary, that the imperfection of the imperfect Metals, proceedeth from a combustible and stinking Sulphur only; which superfluous Sulphur, if it shall be any way separated from them, that which remaineth, ought necessarily to be purer, more subtle, and constant in the fire. There are many waies by which that superfluous and combustible Sulphur is separated from Metals; of which mention is made in the Mineral Work, and the fourth part of Furnaces. In this operation, the manner of separating it by combustion, is performed by Nitre. In this Treatise also other waies are indicated, yet Nitre is to be used in them all.

But the studious of Art ought to know that in this Operation, not only the superfluous Sulphur of Jupiter and ϱ may be separated and consumed by burning and each Metal concentrated and amended, but also to both, or to $\var�$ alone other Metals may be added, and by the help of Salt-petre may be fulminated and concentrated; for the Fulmen of *Jove* doth not only concenter and amend his own proper body, but

also other Metals adjoined to him. Nor do I know a nearer way of destroying Gold and Silver quickly, than the Fulmen of *Jove*, which so destroyeth all the Metals, that afterwards without the addition of other things, they cannot by any force of fire be reduced to their former fusile bodies, inasmuch as in melting *per se*, they alwaies pass into Glass, every one being tinged with that colour which is proper to the metal. Gold is changed into a very elegant glass, like to a Ruby; the glass of Silver hath the colour of a *Chrysolite*; the glass of Copper hath a green and red colour like a Jasper; the glass of Mars differs not much from it; the glasses of Tin and Lead remain white. These Glasses being (by an artificial reduction) reduced into their bodies, are much better and nobler than they were before. This fudgen fire also clippeth the wings of Mercury, so that part of him is constrained with the $\var�$ to abide the fire. That swift fluxing powder which is compounded of Nitre, Tartar, and Sulphur, mentioned in the second part of my Furnaces, is also not to be contemned; for when that mass is mixed with $\var�$, and kindled by a live Coal, the ϑ is altered, as when it is to suffer the fire, it maketh a cracking noise, till it breaks through the fire, but being apprehended by the Fulmen of *Jove*, it hath no time allowed it to cry out; for when it beginneth to feel the heat, it singeth a Swan-like song, but before it can break out from the Fulmen it is killed. *Basilus* calleth this *The Song of the Swan*, alluding to what the Ancients have delivered concerning that Bird, *viz.* That when she is old, and ready to die, she sings a song, which being ended, she presently dieth. This Saying the vulgar believe of that Bird, which yet is false, seeing that I never yet heard any man say that he had heard the Song of a dying Swan. The ancient Philosphers hereby meant our Metallick Swan. But let any one enquire, whether the *Amalgama* of $\var�$ and ϱ may be compared with a Swan; because it may every way be broken, within and without, it is like to the Feathers of the said Bird, and therefore the Philosphers have not unfitly called it a Swan. As for its singing, it is thus; When the *Amalgama* is mixt with Salt-Petre, and wrapt up in Papers, and one after another of them cast into the Iron man, the $\var�$ with the $\var�$ beginneth to sing a Song like the fine Note of some Bird, which endureth no longer than the crowing of a Cock, seeing that the flame presently followeth, which maketh the separation.

But that any one may be more certain of this matter, I will openly and clearly expound the Operation word by word.

R. of Tin and ϱ each lb j. make an *Amalgama*, as I have taught above; grind this with lb ij. of pure Salt-Petre, freed from all its feces, reducing the whole mass into a minute powder, till the *Amalgama* can be no more felt by the fingers. This fine powder distribute into sixty equal parts, more or less, and put each part into a Paper, so that every Paper may contain about two lothones, or an ounce, wrap them up: This quantity is not to be exceeded, especially if the Iron man and the Receivers be not large; for the lesser Vessels require the less of the matter: For the matter being cast into the red-hot Vessel in Papers, when it taketh flame, giveth a crack or puff like Gun-powder, which is kindled with a Coal. The Labour is easie, which may be called *The Work of Women, or Play of Boys*. For as soon as one Paper is enkindled, the vapours ascending with smook and

wind, pass into the Receivers, which being quietly settled, another Paper is presently to be cast in; that it may sing its Swan-like Song, and pass into the Receivers in a fume. This casting in of the Papers is so long to be continued till they are all spent. You can scarcely put in above ten Papers, or fifteen at the most, in an hour; for if one Paper be cast in too soon after another, the ascending Spirits of the $\var�$ and ϱ would not all settle, but some would fly out at the hole of the last Receiver, and be lost. By this means the Iron man is nourished by degrees with his food, *viz.* the white Swan, even as Infants are successively fed by their Mothers.

After all the Papers are in, the fire is to be let go out of its own accord; and when all the Spirits are condensed in the Receivers, the Receivers are to be removed one after another, in which is the *Animas* of Tin and Mercury, and of that metal which was added, of a white or alby colour, if Tin and Mercury only were used. But if Gold was added, it will be of a purple colour; if Silver, of a yellow; if Copper, the colour will be reddish. And this is not only to be understood of the matter which passeth into the Receiver, but also of that which remains in the bottom of the Iron man. The *Animas* hideth it self in the corporeal flowers which ascend into the Receivers, by which it is the more easly acquired, and which otherwise, perhaps, by reason of its great subtilty, would be very difficult to obtain. If you can put your hand into the Receivers, you may take out the flowers with a bent spoon, which hide the *Animas*; but if not, with an Iron Wier fitted for the scraping them off, or by walling them out with Water, which are to be handled further, as you shall presently hear.

The mass remaining in the stomach of the Iron man, being taken out when it is cold, hath a fiery nature and a white colour, if it were only of Tin and Nitre, but if any other metal was added, the colour will be varied, as above. This mass cannot be reduced to its former body by Fire alone, how vehement soever it be, seeing that when it is melted, it runneth into glass, and that too very difficultly. Nevertheless, by the following operation it may be reduced to its pristine Body: Put it into a very strong Crucible, which cover, and set in a Wind-Furnace that will give a very strong Fire (such as is my Fourth Furnace) the Fire being raised by degrees, let it be made white-hot, and when it is so, the Cover being a little removed, throw into the fiery mass a little Sulphur, Antimony, or Coals in fine powder, put on the Cover again, and lastly, cover the Crucible over with Coals, that all the matter may flow well. In this operation the combustible Sulphur will enter the fixt Nitre, and separate it from the fixed Metal, and with the same, whatsoever of Sulphur, Antimony, or Coals was added, will be turned into black Scoria. The Tin, with the Mercury, and the Metal, if any were added, separateth it self from the Scoria, and returneth into a metallick body, which after it is poured out and cold, is to be separated from the Scoria. Jupiter hath the aspect of his former body, but is amended, as the proof will shew him that pleaseth to make it; the remaining Scoria are to be kept, because an excellent universal Medicine may be made of them. The *Regulus* being melted again, is again to be amalgamated with its own weight of Mercury, which *Amalgama* is to be mixed with its equal weight

of Nitre, and put up into Papers, and again cast into the Iron man, as we have shewed before, that the Flowers and *Animas* may be collected and added to the former. The remaining mass is to be precipitated with sulphur, as before, and the Scoria being separated from the *Regulus*, to be added to the former, and the *Regulus* to be again brought with Mercury to an *Amalgama*, that with Nitre the Flowers and *Animas* may be again elicited. This Labour is to be so often repeated, until half the *Regulus* be converted into scoria: That part which remains being examined by the Cupel, will shew how much gold and silver is generated by this Labour. Which profit will serve to buy other Coals and Metals to carry on the Work. The *Animas* which passed into the Receivers yieldeth a most excellent medicine; so do also the scoria which were reserved at divers times, afford one little inferior to that; and how they are to be handled, we will teach in order. Therefore by this only operation a universal medicine for humane and metallick bodies is acquired particularly, and from the remaining part, an amended metal paying the necessary costs which are required for the continuing the great Work.

How therefore particularly of Tin and Copper often fulminated, one may get a profit not to be contemned, I will clearly shew; forasmuch as I have not performed that labour only once, but many times, in like manner I will deliver the way and mode whereby an excellent medicine may be prepared for the curing of all curable Diseases, which also I have often done. But how a Universal medicine may be prepared of the *Animas* of metals, for humane and metallick bodies, I cannot teach; for I have not hitherto had time and opportunity of perfecting so great a Work. Nevertheless, I do not at all doubt, but that the Philosphick Stone may be made of this *Animas*: But by what means I think this may be effected, (saying to every man his own judgment) I will not conceal from the studious of the Divine Wonders. What I have done with my hands, I can render others the more certain of; those things which I have not done, I leave as they are. The beginning of the Labour I have clearly enough proposed; from which, if any man cannot learn more, 'tis best for him to abstain from this kind of Labour.

All the Philosphers cry out with one voice, *Fixe the volatile, and volatilize the fixt*, and you shall have the true universal medicine. From which scope he will not erre, who shall take good subjects for his work. Therefore, because in this our operation, Gold (besides the rest of the metals) being endowed with a most pure body, is rendered volatile and fugacious, and stript of its *Animas*, verily it will be credible, that of the *Animas* of Gold, if the *Animas* of Mercury shall be joined with it and digested to fixation, may be made the *Salamander* constant in the Fire. The purple *Animas* of Gold and Mercury which hath passed into the Receivers, I free from the Flowers of Tin, by walling it out with the sweet universal Water, known to every one, filtering it through Paper, coagulate it, and then fix it into a tinging Stone. And I doubt not, but some good thing will thence proceed.

From the scoria remaining after the reduction, you may easily extract a medicine. Nevertheless, those scoria are divers, and have a diverse nature; for those which remain after the operation with Tin

and Argent-vive, are of another nature and property than those which proceed from the working with other Metals adjoined to those two, as Gold, Silver, Copper, or Iron. Every Metal hath its own proper powers and virtues, which in the extraction of the Scoria go forth together, and render that Extract more noble, or else diminish its virtues. Gold and Silver have a different nature and properties from Copper and Iron. Nevertheless Copper and Iron are not malignant or hurtful in the Scoria, but also possess great virtues. Nevertheless the greatest virtues which are elicited from the Scoria, are to be taken for a Tincture of Sulphur; for the Metals being destroyed by fulmination, and again reduced into a body, leave but a very small part in the Scoria, seeing that their greatest part returneth into a metallick body. Therefore the Scoria principally consist of fixt Nitre, and that Sulphur by which the destroyed Metals are again reduced into a metallick body from the Nitre. The Scoria of the Metals destroyed and precipitated by Coals, or common Sulphur, have one and the same nature, virtues, and properties. The Scoria of that reduction made by Antimony, partake of another nature, to wit, of a groffer and stronger than those which are made by common Sulphur or Coals, for they sometimes cause vomiting, which the other do not.

And this I would note, that because Antimony as yet containeth many Arsenical qualities, common Sulphur containeth but few, and Coals none at all; that therefore also the Scoria made by these, are safer than the other; nevertheless, I confess that those are somewhat cruder, and more immature than those made with Antimony; but being extracted with Spirit of Wine, yield an excellent Tincture, which is a kind of a Universal Medicine; for it is sufficiently known, that no subjects (Gold and Silver excepted) are found fitter for Medicine, than Antimony and common Sulphur. And because Wood-Coals exactly answer to this common Sulphur in their nature, properties, powers, and virtue, therefore I commend the Scoria's made by them, and prefer them to those prepared by Mineral Sulphur and Antimony; not that there is a greater efficacy in Coals than in Antimony and common Sulphur, but because those of Coals dissolved by fixt Nitre, are rendered more apt and easie to render their virtues to spirit of Wine, are of a more easie extraction, and are somewhat more familiar to the animal nature, than common Sulphur and Antimony. But the Medicine prepared of either of those scoria, is efficacious, and differeth but little in its external species and colour. All the difference in those Tinctures, is, That that which is extracted from the Antimonial scoria, if it be taken in a little the larger dose, before fixation, causeth vomiting, and operateth more forcibly than the other two. All three after the manner of sulphurs, gild silver, help the growth of Vegetables, by dunging, and nourish and augment Gold being made spiritual, and closed up in the moist way.

And although I do not yet know what it can perform in the transmutation of Metals, yet I am persuaded, that if it were fixed and rendered constant in the Fire, and made to have ingreſs into metals, that it would effect something in transmutation. It sufficeth me at this time to have indicated the way by which a universal Remedy against all curable Diseases, is to be prepared of the remaining scoria.

He that desires to know more, let him set to his hand, and search farther; the way is opened to him: But if he desires somewhat better, let him set upon the Spirit of Mercury and Gold, which is forced into the Receivers, and search for it in that. As for the remaining parts, viz. the metallick flowers, and the running Argent-vive, which passed together into the Receivers, the running Argent-vive may be separated from the Flowers, and used again for the like labour, by amalgamating it with Jupiter. The Flowers are again to be reduced with the fulminated metals, that nothing of the Gold and Silver may be lost; for this labour being continued, will give a perpetual encrease of Gold and Silver, besides the tinging *Anima*, and the Expenses will be only for the Salt-Petre, which will be little to those who know how to make Salt-Petre themselves, for the making of which, I have shewed the way; for that without any great labour, trouble, and cost, not only an honest livelihood may be gotten, but also a good medicine, for the relief and comfort of the forsaken Sick.

But before I conclude this my concentration of metals by Salt-petre, I think fit here to adjoin some admonitions for the benefit of the studious of these Labours. When in the reduction of the metals destroyed by the Fulmen of *Jove*, the scoria are left too long upon the gold, and not poured off in due time, they (after a certain magnetick manner) attract the remaining *Anima* which the Fulmen hath left in the Gold, and leave the whole pale. If Argent-vive be amalgamated afresh with this pale Gold, and this Labour sometimes repeated, the Gold will be wholly spoiled of its *Anima*, being partly driven into the Receivers, and that which is left attracted by the scoria, then the gold loseth all its colour, and the scoria put on a bloody colour. From this red scoria the Tincture is to be extracted, by a certain singular Artifice, and to be used in the known manner. The pale Gold recovereth its yellow colour by Iron, Copper or Antimony.

Moreover, this is also to be observed, When by the Fulmen of *Jove* the *anima* of \odot and \sphericalangle is propelled into the Receivers, the Receivers being taken off, the Flowers which hide the *Anima*, are to be taken out, and kept in Glasses close stoppt. For the said *Anima* of \odot and \sphericalangle is so spiritual, volatile, and fugacious, that like a Bird it presently flies away, and leaves an empty Nest; the truth of which thing I have experienced. *He that will not believe what I say, let him try, and he will find it to be true.*

But that I may shew the studious of the Hermetic Medicine how he may experience this matter, I will declare by what chance I myself came to know it. At a certain time, when I had taken the *anima* of Gold and Mercury, made by the Fulmen of *Jove*, out of the Receivers, not clearing one Receiver so well, but that somewhat of the *anima* remained therein; I put in some ounces of Water, that I might thereby the better wash out the remaining Flowers: In the mean time, some more urgent business called me away, I set the Receiver with the Water in it, upon a Table in my Laboratory, before or near a Window, and forgetting it, left it there for some daies; the Cold being then very sharp, in that time had frozen all into Ice; I coming into my Laboratory, to see if some Glasses, in which were Water, were not broken by the Ice, as is usual, I found

I found some wholly filled with Ice, and seeing this Receiver to lie there, I presently believed that Receiver to be broken by the Frost; but taking it up in my hand, I found that the Water in it was not frozen, but remained clear, therefore I rejoiced that the Glass remained unhurt, and wondered much whence it should proceed; but I could impute it to no other thing, but to the hot spirit of Gold and Mercury, of which notwithstanding there could not above three or four grains remain in the Glass, which although so very little, preserved some ounces of Water from freezing. From that time weighing the matter more diligently, I found an incredible heat in that *Anima*. Let others enquire and search what may be performed by such a heat; this I know, that hereafter there will be sedulous Artificers, who will thank me for this my faithful Institution.

For it is very likely, that this subtile and fiery Spirit of Gold and Mercury, such as it yet is before fixation, may be presently used with great profit, in the taking away many occult Diseases of the Body. Moreover, it is to be observed, That if Metals, whether Gold, Silver, or Copper be to be conjoined by amalgamation with Tin and Argent-vive, they ought first to be reduced into pure and shining Calces, that they may be the more readily received by the Mercury: But only a fourth or sixth part of the Calc is to be added in the Amalgamation, lest the Tin (by too great a quantity of the Calc) be hindered in fulminating, for the whole operation consisteth in a right fulmination. But lest any should erre in working, he may first make trial, whether all things be well mixed and prepared, by putting half a dram of the mixture into a small Crucible, and upon that a live Coal, and beholding the Fulmen with an intent eye, that he may see what colour it gives: If it riseth so white and clear, that it dazzleth the eyes, as the looking upon the Sun is wont to do, all things are rightly and orderly mixt; the smook is tinged with the colour of the adjoined Metal, as Purple from Gold, Blue from Silver, Green from Copper, but Tin and Argent-vive only give White. Also from the Maf remaining in the Crucible, it may be seen whether the Fulmen be rightly performed, viz. if the *Caput Mort.* or residuing Maf be porous, and fiery upon the Tongue, being touched therewith. The Colours also of that Maf are various, according to the added Metal; Tin and Argent-vive alone leave a fiery white matter.

Neither is this to be passed by, being of no small moment, viz. If you seek not a Medicine, but only the enunciation of Metals, it is not necessary to add

Mercury with the Metals, but the Gold, Silver, or Copper may be melted with Tin, for so they become a brittle Maf, which may be powdered in a Mortar, and mixed with an equal weight, or a little more, of Salt petre, and put into a strong Crucible, and covered, then put into a circular fire, so that the fire may approach it by degrees, till the Crucible and Matter be hot, and at length taking flame, may be enkindled and dispersed. In which operation many Flowers fly away, and a fiery Maf remaineth in the bottom, which is again to be reduced into a metallick body in a strong Crucible, in a Wind-Furnace, by the addition of some combustible sulphur, and after the reduction, to be reduced again into powder, and mixed with fresh Nitre, and again treated in the same manner, by sometimes repeating the former Labour. At length that Maf being reduced in a Crucible, the Gold, Silver, or Copper will be found augmented by the Tin.

N.B. Because in this operation, not a little of the Metals flies away in flame, the Crucible may be set in some Wall, and on the Wall over it some Vessels or subliming Pots capacious enough may be fastened over it, that the Metals being kindled by the Fulmen, the elevated Flowers may be preserved and advanced to a purer Metal than they were before. This Labour doth not differ much from the Operation of *Basilis*, in which Salt-petre saith, *My Lover is a cheerful or pleasant Woman*, &c.

There are only two feminine Metals, viz. *Luna* and *Venus*, either of which serveth to this Labour, yet this is more profitable than that, yea, and the same Labour giveth an augment to Sol, Mars, and Saturn, which are not feminine. When Tin is melted with \sphericalangle or \sphericalangle , these pleasant females are elevated with joy, they sing, dance, and suffer themselves to be handled in what manner soever it shall please one to treat them, therefore they are called *brisk or pleasant Women*. This is an Operation not to be contemned, forasmuch as it well compensateth the Labour, and requireth but small costs besides the Salt-Petre, and also may be wrought in a great quantity, but our former with Mercury is better. There is yet more lies in this operation, but I think it not necessary here to recount all things. Let the Reader kindly accept of this, and shortly (God willing) more and better shall follow.

Whatsoever I have here written, is the very truth, and confirmed by many Experiments, in which every one may safely confide, and if he operates aright, will find the truth; for all things here delivered, are to be understood according to the Letter, and so to be observed in all the Labours.