made into Troches. It is obſervable that 'tis difficult to preſerve or keep thoſe Troches whole, becauſe they fall into Powder like Lime. Oyſter-Shells calcin'd make very good Lime, which is the Reaſon why the *Dutch* uſe nothing elſe. Some Authors, as *Etmuller*, a *German* Phyſician, ſays in a Treatiſe of his of Animals, that the Oyſter-Shells burnt are very proper to cure peſtilential Bubo's, being apply'd upon them: He obſerves likewiſe, that they ſerve inſtead of Pearl. Beſides theſe Shells there are Abundance of others which I have not mention'd for three Reaſons; the *First*, becauſe they are not uſed; *Secondly*, becauſe I have little or no Knowledge of 'em; and in the *third* Place, becauſe Mr. *Tournefort*, who has the compleateſt Knowledge of theſe Curioſities, deſigns in a little Time to give the Publick an exact Account of them, which he might do with a great deal of Eaſe, as well from his great Underſtanding, as the large Number he has by him, whereof I have ſeen above three Thouſand different Sorts; ſo that from ſuch a vaſt Variety, we cannot but admire the *Luſus Naturæ*, the Paſtime, or Sporting of Nature.

Solen, Dactylus, vel Digitus, or the *Finger Shell*, becauſe of its Reſemblance to a Finger, is a ſmall Shell, ſomething longer than one's Finger, and an Inch thick, made up of two Pieces like the Muſcle, but joyn'd together at the End, and hollow like a Pipe: This contains in it a little Fiſh of the ſame Shape, which when it wou'd feed, puts the Head out at the End of the Shell that is not joyn'd together, and draws it in again like the Tortoiſe; this Fiſh is good Meat, when well waſh'd from the Sand, whereof it is full; the Fleſh is a little viſcous, and it ſometimes caſts a Light like the *Phoſphorus*: The Shell is *alcaline*, reſolutive, drying, opening, *&c.* being taken inwardly. The Doſe is from half a Scruple to two Scruples; they uſe it externally in ſome Cerats and Oyntments, in the Place of the *Dentalium* which is ſcarce. *Lemery.*

BOOK the Second, of the Second Volume.

Of METALS.

PREFACE.

Of FOSSILS in General.

I *Underſtand, by the Word* Foſſil, *every Thing that is found in the Bowels of the Earth; as* Metals, *half* Metals, Minerals, Bitumens, Stones *and* Earths. *Now, as my Deſign is to begin with* Metals, *I ſhall explain myſelf, that by the Word* Metal, *I mean a Body that is hard, of a Subſtance alike in all its Parts, that may be melted by the Fire, is ductile, and may be extended by the Hammer, and is*

different from Minerals, Bitumens, Earths *and* Stones, *as shall be shown hereafter. There is a great Dispute concerning the Number of Metals, some will have them to be Nine, others Eight, others Seven, and others Six, because they would have* Quicksilver, Pewter, Glass, *and* Founders Metal, *to pass for* Metals; *but as this Opinion is not well grounded, because* Glass *and* Founders Metal *are Things made, I shall therefore agree with them, who have concluded that the Number is Seven, which answers to the Seven Planets, and the Seven Days of the Week; that is to say,* Gold *to the* Sun *and to* Sunday; Silver *to the* Moon *and to* Monday; Iron *to* Mars *and* Tuesday; Quicksilver *to* Mercury *and* Wednesday; Tin *to* Jupiter *and* Thursday; Copper *to* Venus *and* Fryday; *and lastly,* Lead *to* Saturn *and* Saturday. *Some Persons will have it, that* Mercury *is but a half Metal; but as I think it not proper to discuss that Matter here, I shall refer the* Reader *to the* Chapter *of* Mercury *or* Quicksilver, *and begin here with* Gold, *which is the Chief of all other Metals.*

1. *Of* Gold.

GOLD is a Metal yellow, soft and malleable, the most noble, pure, precious and weighty of all other Metals. *Gold* is brought from many Parts of the World, but it comes in largest Quantities from the Mines of *Caravana* in *Peru*, and of *Valdivia* in *Chili*, where it is so common, that 'tis used for the same Uses as we do Pewter, Brass, or Iron; and tho' it is the richest Country for *Gold* of any that has come to our Knowledge, yet the Inhabitants are very poor, by Reason of the Dearness of all Provisions. There are several other Places where *Gold* is found, but the greatest Quantity comes from *Peru*, because there it is most commonly found, and is refin'd with the least Trouble and Expence.

Africa, *Asia*, and *Eurorpe*, produce *Gold* of four different Sorts. The *First* is in Bits of different Sizes, which is so fine and soft, that you may make an Impression upon it with a Seal, as if it were upon Wax. This *Natural Gold* is call'd *Virgin Gold*.

The *Second* is in Grains, the *Third* in Oar, the *Fourth* in Sand. These three last Sorts are generally found after great Rains, in those Places through which the Torrents of Water have past; and even in the Bottom of Rivers, especially such as have run through some Mines of *Gold*; as those of *Datzin* and *Diguvira*, in *Africk*, where there are Negroes who make it their whole Employment to search for it in the Bottom of the Rivers. The greatest Part of the *Gold* we have in *France* comes from *Peru*, whence it is brought in Wedges, or Ingots, to *Cadiz*, by the *Spanish* Galleons. The Company in *France* bring from *Senega* a *Gold* which they call *En Aurillet*; this is in different Works wrought by the Savages, which they fetch from the Kingdom of *Galan*, which is near that of *Tombut*. The *Dutch* likewise bring *Gold* from *Sumatra*, and other Places of the *East Indies*, together with their Peppers, and other Commodities of those Counteries. There is yet another Sort of *Gold*, which is that of the *Alchymists*, of which I shall say nothing, because I have no Knowledge of it, leaving it to those who have Time enough to amuse themselves, and seek the Ruin of their Families in an Operation that does not seem to have much Possibility in it: But this may be said of them, that as *Gold* is the best of all Metals, so they call it by the Name of the *King* of *Metals*; and that, by the Means of their Chymistry, they extract from it many Things that are useful for Human Life. The *first* Preparation that is made of *Gold* is the Refining of it, which is done after four Manners, to wit, by Antimony, which is the best: The *Second* by the *Coppel*; the *Third* by *Aqua Regia*; the *Fourth* by the *Cement*. They call *Gold* by the *Coppel*, that which is refin'd by Lead, and Ashes depriv'd of their Salts, or Bones burnt, which is that the Gold-beaters use to make Leaf-Gold of. That which is refin'd by *Aqua Regia*, is call'd *Gold* by *Departure* or Precipitation. *Lastly*, That which is call'd *Gold* by *Cement*, is that which is refin'd by the Means of a Paste, compos'd of Brick, common Salt, Sal Armoniac, Sal Gem and Urine. There is a *Fifth* Refinement of *Gold* by

by Mercury, but as these Matters are too long to be here decided, I shall refer the Reader to the several Books of Chymistry which treat thereof.

Regulus of Gold.

The *Regulus* of *Gold* is Gold refin'd by Antimony, and afterwards thrown into a Brass Mortar, warm'd and greas'd in the same Manner as that into which is thrown the Regulus of Antimony. This Operation is seldom us'd because of the Charge, and is seldom done but by such as have the Curiosity of having Gold that is extreamly fine.

Leaf Gold.

We call *Leaf Gold* that which is refin'd by the Cupell, and then by the Help of a certain Kind of Skins, or Beasts Bladders (which the *French* Workmen call *Baudruche*) is by Hammering reduc'd to Leaves extreamly light and thin.

It is a surprizing Thing to think that a *Gold-Beater* can reduce an Ounce of Gold into 1600 Leaves, each of which shall contain seven and thirty Lines square. And Monsieur *Furetiere* says, that they can reduce Gold into one hundred and fifty nine Thousand ninety two Times its superficial Size; and the *Wire-Drawers* into six hundred and fifty one Thousand six hundred and ninety Times. There are five Sorts of *Leaf Gold* amongst the Gold-Beaters of *Paris*; the finest and most durable is that which is sold to the Sword-Cutlers, wherewith they work their finely gilt and flowered Blades: The *Second* is that which they sell to Smiths and Armorers to gild their Iron and Weapons. The *Third* is that which is us'd in Gilding of Books. The *Fourth* is us'd by Gilders of Wood, and Painters. The *Fifth* is that us'd in Physick, which the Apothecaries put into several of their Powders and Confections, as well for the Virtue of it, as for Ornament.

They grind these Leaves of Gold, or the Clippings of them, which they call Bractreole with Virgin Honey, and then put them into Muscle-Shells, and this they call Gold in Powder, or in the Shell; this Gold, so prepar'd, is us'd for Painting in Miniature.

Aurum Fulminans, *or* Crocus *of* Gold.

The *Aurum Fulminans*, or *Crocus Auri*, is Gold in File-dust dissolv'd in *Aqua Regia*, and precipitated into a brown Powder, by Oil of Tartar *per Deliquium*, pour'd upon the Dissolution. This Powder dry'd has much more Force, and takes Fire sooner than Gun-Powder. This Preparation of Gold is a sudorifick very proper in the small Pox, being given from two Grains to six: It is likewise good to stop Vomiting, and suppress the too vigorous Operation of mercurial Medicines.

Amalgamation of Gold, *or* Gold Powder.

The Powder, or Ground Gold, is made by Calcining Gold with Mercury and Sal Armoniack, and this Calcination is call'd *Gold in Powder*, or amalgamated, and is us'd by the Gilders, because it spreads easily: There are some who omit Sal Armoniack in their reducing Gold to Powder, and only make use of Mercury. There are several other Preparations of *Gold*; as Tinctures, Extracts, and the pretended *Aurum Potabile*. But since those are not receiv'd by all the World, I shall only say that which all agree in, that the greatest Property of Gold is to give all Sort of Conveniencies to him that is Master of it.

Gold, in *Latin*, *Aurum*, *Sol*, *Rex Metallorum*, is the most solid, weighty, compact, and precious of all Metals: It is generated in many Mines in different Parts of the World, but the greatest Quantity is brought in Bars or Ingots, from *Peru* to *Cadiz*, by the Galleons of *Spain*. There is *Gold* likewise found in *Asia*, *Africa* and *Europe*, sometimes in a Mass, which is call'd *Virgins Gold*, sometimes in Grains, sometimes in Oar, sometimes in Dust or Spangles. *Lemery.*

The *First* is call'd *Virgin Gold*, because it comes pure out of the Mine, without any further Need of Preparation, and is so soft as to receive the Impression of a Seal, and is found in greater and lesser Pieces. The *Second* is in Grains, but not so fine as the First.

The *Third* is a Gold mixt with other Metals, and the Marcasite or mineral Stone,

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-148394-p0139-1 DFG

which are form'd together as a Stone, call'd *Gold Oar*. The *Fourth* is a Gold in Duſt, or Spangles mixt with Sand.

The three laſt Sorts of Gold are genetally found at the Bottom of Rivers after great Rains and Torrents of Water, and the Negroes either dive for it, or waſh it out of the Sands.

Gold is refin'd ſeveral Ways by the Cupell, by Departure, by Cementation, and by Antimony.

The Refining of *Gold* by the Cupell and Departure, is done after the ſame Manner as that of Silver, of which hereafter.

Gold is refin'd by Cementation in the following Manner: They make a hard Paſte with Sal Gem, and Sal Armoniack, Chalk and Urine; this Paſte is laid with Gold, *ſtratum ſuper ſtratum*, in a Crucible, which is plac'd in a Furnace, and a large Fire being made about it, the Matter is left to calcine for ten or twelve Hours, that ſo the Salts may penetrate the Foulneſs of the Gold, and throw it off in Scoria; and ſo the Crucible being taken off from the Fire, the Gold will be found ſeparated from the Scoria.

Gold is refin'd by Antimony after this Manner following: They weigh the Quantity of Gold they would refine, and make it red-hot in a Crucible, by a ſtrong Fire, and then throw in four Times the like Quantity of Antimony in Powder, ſoon after which the Gold will melt, for Antimony is full of a ſaline Sulphur, which not only very much augments the Heat, but piercing into the Metal divides the Parts very ſpeedily; then the impure or groſs Matters that were in the Gold are ſwallowed up by the Antimony, to which they readily joyn themſelves, and ſo ſeparate into Scoria, of which the more volatile Parts are diſſipated into Smoke: They leave this Matter in the Midſt of a great Fire 'till it ſends forth Sparkles, and then they pour it into an Iron Mortar warm'd and greas'd, beating it about 'till the Regulus fall to the Bottom: When all is cold they empty the Mortar, and with a Hammer ſeparate the Regulus from the Scoria. They weigh this Regulus and put it into a Crucible over a ſtrong Fire to be melted a ſecond Time, then by little and little they throw in three Times as much Saltpeter to purify the Gold from any of the Antimony that may happen to remain: They continue a very violent Fire about the Crucible 'till the Fumes are gone off, and the Gold remains in Fuſion clear and neat, then they turn it into a Mortar as before; and when it is cold they ſeparate the Scoria that are found underneath it, then they waſh it and wipe it with a Cloth. This *Regulus* of *Gold* is as fine as it poſſibly can be, and this Way of Refining is preferable to all others, when they would cleanſe Gold exactly from other Metals.

The Cupell will cleanſe Gold very well from Marcaſites, and even from ſuch Metals as are call'd imperfect, but not from Silver; this Metal is ſo bound up and joyn'd with Gold, that Recourſe muſt be had to the Departure before 'tis poſſible to ſeparate them.

The Departure ſeparates Gold from Silver, but when the Gold is precipitated it generally carries with it ſome Portion of Silver.

The Cementation often leaves the Gold undiſcharg'd of ſome Particles of other Metals, and the Salts entring into the Gold diſſolve a little of it. But Antimony is a Devourer which ſpares no other Metal but Gold; yea, it will oftentimes gnaw off ſome light Portion of it, and by that Means create ſome Diſpleaſure to the Refiner.

The Degrees of the Fineneſs of Gold are call'd Carats; a Carat of Gold is of the Weight of a Scruple, or twenty four Grains, and by Conſequence twenty-four Carats make an Ounce.

Gold that is entirely fine is call'd *Gold* of twenty-four *Carats*; becauſe if you put an Ounce of ſuch Gold to the Proof, it will not be diminiſh'd; but if an Ounce of Gold waſt a Scruple in the Proof, it is Gold of twenty-three Carats; if it waſt two Scruples it is Gold of twenty-two Carats, and ſo of the reſt. But many Refiners believe that there is no Gold of twenty-four Carats; for let them refine it never ſo well, there will ſtill remain ſome light Portion of Silver. Gold eaſily mixes and unites with Quickſilver, and this is what is call'd *Amalgama* of *Gold*: To make it, they put Gold cut into very minute Pieces into a Crucible, leaving it to be red-hot; to this they put eight Times as much Quickſilver, ſtiring it with a ſmall Iron Rod, and when they find it incorporated, they caſt it into an Earthen Veſ-

ſel

ſel full of Water, where it cools and remains ſoft as Dough; they waſh it ſeveral Times to take away the Blackneſs, and they ſeparate the ſuperfluous Mercury, that is not well united to it, by putting it into a Cloth, and preſſing it gently with the Fingers. They throw a great deal of Quickſilver upon Gold, that it may charge itſelf with it as much as poſſible; for the more Mercury enters into the Amalgama, the ſofter it will be, and the more pliable; but Gold can receive no more than a certain Quantity, becauſe when its Pores are full, the reſt is uſeleſs.

The Amalgama of Gold is us'd by the Gilders, becauſe it is moſt eaſily ſpread over the Work prepar'd for it.

Gold, when refin'd, will be extended by the Hammer more than any other Metal; the Gold-Beaters reduce it into very thin Leaves, which they put into little Books: Theſe Leaves of Gold are us'd for Gilding; they are us'd likewiſe in Compounding of Medicines, and are preferable to all other Preparations of this Metal; not only becauſe they are eaſily mix'd, but becauſe they appear like Spangles, which beautify and ſet off the Compoſition.

As *Gold* is the moſt weighty, the moſt compact, firm and beautiful of all Metals, ſo it has likewiſe been eſteem'd the moſt perfect; and a numerous Sect of Philoſophers, call'd Alchymiſts, have thought that the Production of Gold was the principal Deſign of Nature in all Mines; and that it had been obſtructed from its due Courſe by ſome Accident, when it produc'd other Metals. But this Opinion is not approv'd by all; for one may very reaſonably believe that Iron, Lead, Copper, and other Metals that are call'd imperfect, have that Perfection which they ought to have, according to their own Nature, as well as Gold. This Sentiment of the Alchymiſts has led them into another Chain of Reaſonings, which are not more juſt than the former: They believe that they can perfect the imperfect Metals, by ſupplying the Failure of Nature, and conſequently that they can make Gold. It is this Operation which they call the Great Work, or the Search of the Philoſophical Stone: To arrive at which, ſome of them make a Mixture of theſe Metals with ſome Matters proper to refine 'em, and calcine them a long Time in a ſtrong Fire, to arrive at their Perfection, as if Nature had wanted Heat to produce them.

Others put Metals into a Digeſtion upon the Fire, in ſaline and piercing Liquors, ſo to draw out the Mercury, which they ſay is a Matter diſpos'd to be reduced into Gold.

Others ſeek for a Seed of Gold in Gold itſelf, and believe they ſhall find it there, as they do the Seed of a Vegetable in a Vegetable, and that of an Animal in an Animal: To accompliſh this, they endeavour to open Gold by Diſſolvents; and they put it to digeſt by the Fire of a Lamp, or the Heat of the Sun, or that of Smoke or Fume, or ſome other Degree of Heat always equal, which approaches neareſt to that which Nature makes uſe of.

Others look for the Seed of Gold in the Minerals, as in Antimony, where they pretend there is a Sulphur and a Mercury, like to that of Gold; others hope to find it in Vegetables, as in Honey, Manna, Roſa ſolis, and Roſemary; and others in Animals, as in the Spittle, the Blood, the Brain, the Heart, and the Excrements.

Others imagine they can catch the Seed of Gold by fixing the Rays of the Sun after a certain Manner; for they, as ſeveral Aſtrologers, look upon it as a Thing unconteſtable, that the Sun is Gold melted in the Center of the World, and that it is cupell'd by the Fire of the Stars that ſurround it; and that the Rays which it caſts, and that ſhine on all Sides of it, are the Sparkles which riſe from it after the ſame Manner, that they do in Refining Gold by the Cupell.

I ſhould enlarge too much if I wou'd here repeat all the Fancies of the Alchymiſts, and the Manners of Working, which they have invented to arrive at the Perfection of their Deſigns: They have ſpar'd neither Time, Pains, Watching, Care, nor Money; and a great many of them having ſpent the better Part of their Life in this Labour, have ſo exhauſted their Spirits, their Healths, and their Pockets; that they have fallen into a deep Melancholy, next to Madneſs, into incurable Diſeaſes, and a moſt miſerable Poverty.

But the ill Succeſs of theſe Alchymiſts has not hinder'd other Perſons from entring the ſame

ſame Liſts, the Hopes with which they flatter themſelves, that they ſhall find the Means of making Gold does ſo far prepoſſeſs their Minds, that they become incapable of Thinking ſeriouſly of any other Thing, than what may contribute to the grand Work: They think no Body reaſons ſo well as the Alchymiſts; they treat all People that don't come up to their Sentiments as Atheiſts, and they aſſume to themſelves, excluſive to all others, the Name of the True Philoſophers, or The Philoſophers by Way of Excellence: If they ſpeak, 'tis by Monoſyllables; if they explain themſelves, it is in ſuch obſcure Terms, and heightned Expreſſions, that very often they don't underſtand themſelves: If they write, it is that it may not be comprehended; if they work, 'tis with Myſtery, giving ſublime Names to all the Ingredients they make uſe of. Gold is by them call'd the Sun; Silver the Moon; Tin Jupiter; Lead Saturn; Sal Armoniack, the Solar Salt, or the Mercurial Salt of the Philoſophers; Nitre is Cerberus, or the infernal Salt; the Spirit of Nitre, the Blood of the Salamander; Antimony the Wolf, or the Root of Metals or Proteus, and ſo of the reſt. Their Preparations are all Philoſophical; and even the Bricks of which they build their Furnaces participate of that Quality. Beſides, theſe Gentlemen look upon themſelves to be far above all other Perſons; they think they are the Depoſitaries of the richeſt Secrets of Nature; they explain every Thing to their own Advantage; and according to their own Prejudices they call themſelves the Holy Nation, and the Elect People. King *Solomon*, according to their Opinion, was of the Sect of Alchymiſts, becauſe Gold was ſo common in his Days. The Spirit of God which ſwam upon the Water, and is ſpoken of in *Geneſis*, was the univerſal Spirit of which Gold is made. I could relate a great many more of their Opinions as extravagant as thoſe, but I am afraid of growing tedious to the Reader.

That which the Chymiſts aſpire to by their great Labours, is, as I ſaid before, to find out the Seed of Gold; ſeveral of them pretend that they have attain'd to it, and are in full Poſſeſſion of it, and it is this which they call the Powder of Projection; they attribute to it the Virtue of Turning any Metal whatſoever into Gold, but we ſee no Experiments of this pretended Fact: Thoſe that have been made upon ſeveral Occaſions, have been only Tricks or Slight of Hand; ſome of which I have deſcrib'd in another Place, by which they throw Duſt in Peoples Eyes, and engage to blow the Bellows, and bear Part of the Charges with them.

It is eaſy to apprehend that the Seed of Metals is not to be found in them, becauſe their Production does not arrive by Vegetation, as in Plants, but proceeds from a Congelation that is made by Waters, loaded with Salts of different Natures, and ſulphurous Earth, as they have acknowledg'd, who have wrought in them.

The Alchymiſts ſay that their Seed of Gold is a Mercury which they have drawn from Metals: But beſides that it is ſtill a Queſtion, whether they can draw a Mercury from Metals, it is not probable, that if they can draw it, it ſhould be the Seed of Gold.

They affirm likewiſe, that the Seed of Gold is in every Thing, and that it abounds in the Spirit of the Univerſe, and that Dew, Manna and Honey, having the Impreſſions of this Spirit, the Seed of Gold may therefore be drawn out of them. We agree with them, that the univerſal Spirit ſerves to the Production of Gold, as it ſerves to that of other Mixtures; but it is by an Acid that it contains, and not by a Seed, at leaſt the Name of Seed is not given to this Acid; and then there is no more Reaſon to think that the univerſal Spirit abounds in the Seed of Gold, any more than in the Seed of the groſſeſt Mineral, the moſt uſeleſs Plant, or the moſt deſpicable of Animals.

Although all the ancient Authors have eſteem'd and preſcrib'd Gold as the greateſt Cordial, when taken inwardly, yet we do not find this Virtue to be in it; for Experience ſhows us, that it paſſes by Stool in the ſame Weight and the ſame Condition in which it was taken, becauſe it is too hard to be penetrated and digeſted by the weak Acids of the Body: But it is proper, and very convenient for them who have taken too much Mercury, for it amalgamates with it in the Body, and fixes it in ſuch a Manner, that it hinders it from Acting as it did before; this Mix-

Mixture is afterwards thrown out by the Stool or Urine. It is likewise good for Colick Pains of the Glaziers and Plummers, which are caus'd by the Vapours of their Lead.

Mercury clings so easily to Gold, that if a Person salivated with Mercury has any Pieces of Gold in his Pocket, they will commonly grow white in a little Time without touching them. But this Mercury is expell'd by putting the Gold in the Fire, and afterwards rubbing it with a little Oil of Tartar.

The Aurum Potabile of the Chymists is nothing but a Chimæra; they pretend that they can resolve Gold into its first Principles, and separate the Salt and Sulphur of it, so that they cannot be reviv'd into Gold any more than the Oil and Salt, that are drawn from a Vegetable, can be put into the same Plant again. They call these pretended Salts and Sulphurs of Gold, Potable Gold, because they can be dissolved in all Sort of Liquors, and be taken as a Potion: They attribute to it the Virtue of being a Preservative against all Sorts of Illness, that it cures all Diseases, prolongs Life, and in a Word, is the Universal Medicine.

The noble Qualities of the Aurum Potabile, are grounded upon many other Chimeras. The Alchymists and Astrologers affirm, that there is a great Correspondence, and a peculiar Intercourse between the Sun and Gold, by the Influences which they communicate one to the other; and that Gold is therefore consequently impreſt with the Influences of the Sun: That the Sun is the Heart of this great World, and having that Quality it ought, by the Means of Gold its substitute, displays its Virtue over the Heart of the little World, which is that of Man: That the Quality of the Sun is to warm, revive, rejoyce, and cleanse the Body from all ill Humours, and to render Life happy, long, and free from Distempers: That all their Principles being certain, there is no Room to doubt that Gold has these excellent Virtues; but that as this is a Body very hard and solid, its Qualities are so enclos'd and concentred, that they cannot be well perceiv'd without reducing them to their first Principles, which are the Sulphur and the Salt that they call *Aurum Potabile.*

It is not difficult to confute all these Arguments, they are so weak, and have so little Foundation, that they fall of themselves. *First*, The Alchymists take it for granted, without proving it, that Gold can be resolv'd into its first Principles, so that Salt and Sulphur may be drawn out of it; for this Metal is so solid, and so conjoyn'd in its insensible Parts, that they could never find a Means to dissolve it radically, nor to separate any of its Principles, notwithstanding all their Pains and Application; they extend, they divide, they attenuate, they rarify it into insensible Parts, by Means of their Dissolvents, but hitherto they have done nothing but disguise it; for it still remains entire Gold, and is ready to be reduced to its primitive State by Fusion. The other Preparations of Gold, which some Persons would put upon us for the Salt and Sulphur of this Metal, are found, when strictly examin'd, to be nothing else but Gold extreamly rarify'd, dissolv'd, and disguis'd by some armoniacal Salt; but this Gold is revived again by freeing it from this Salt, and making it pass through the Fire.

But though in Process of Time they should come to be able to dissolve Gold radically, so as to extract the Salt and Sulphur; yet it would still remain a Question, what would be the Virtue of these Principles? Which could only be known by the Experiments that should be made with them; but there is Room to believe, that the Effects would be different from what they would perswade us. The Intercourse of Gold with the Sun, and the peculiar Influences that they would have it receive from thence are Fancies, which carry no Probability with them: We see the Sun displays its Warmth and Rays upon all Bodies, without any Appearance of its making a Distinction.

Although there is no Aurum Potabile in the World, and that it is uncertain what Effect it would have, could we find it, yet the very Name of *Potable Gold* imposes upon a great many People, and gives an Opportunity to Mountebanks to cheat 'em with Impunity, for they draw Tinctures from some Ingredients, whose Colours come near to that of Gold, and sell it at a very great Rate, under the Title of *Aurum Potabile.* This Sort of Cheat is what generally succeeds

ceeds best; for Patients are prepossess'd in Favour of such Medicines as carry great Names, and have a specious Appearance: Men are likewise apt to cry up that which is dear, so the Name and the Price gains an Estimation. It likewise often happens, that these Tinctures which go by the Name of *Aurum Potabile*, produce some good Effect, because they can take Care to draw it off from such spirituous Menstruums, as comfort the Heart, and expell ill Humours by Perspiration; then it is cried up for a Miracle, and the Effect is attributed to the Gold which has no Share in it, as having never entred into the Liquor.

Others who are less Cheats than those I have spoke of, dissolve Gold in some spirituous Liquors after the common Manner; and as the Dissolution of Gold is always yellow, they make it pass for the True *Aurum Potabile*, altho' it is only Gold divided, and may be reduced to the same State that it was in before.

Besides, I cannot see that the Perfection of Gold must necessarily give it the Preference in Physick to other Metals; on the contrary, this Perfection, in an exact Contexture of the Parts, and a very great Solidity, is the Cause why this Metal is so much the less dispos'd to be digested and distributed into the Vessels of the Body. Iron, Mercury, and the other Metals, which are call'd Imperfect, are much more tractable, for we put them into a Way of penetrating through the whole Body, and producing considerable Effects: What is Perfection with the Workman, is often an Imperfection with the Physician, and we make better Use of the mixt Bodies, whose Principles are naturally rarified and dissolvable, than of those which through too much Firmness are rendred as it were incorruptible.

2. *Of* Marcasites.

Pomet. UNder the Name of *Marcasite*, according to Monsieur *Morin*, Doctor of Physick of *Montpellier*, is to be understood a metallick Mineral, which is loaded with Sulphur and Earth; this swallows up the metallick Matter which gets loose, and the Sulphur carries up with it those Parts which being more subtil, mercurial, and less fix'd, are evaporated, so that there remains nothing but a Body, which is vitrified and useless, that they call *Letier*, or *Lytharge*.

Altho' from this imperfect Mineral, no Metal can be drawn by Fusion, whatever else be mixed with it to promote the Separation, yet it is much search'd into by all true Chymists, and prefer'd to that from which Metals may be extracted, which some improperly call *Marcasite*; and it is with just Reason, for the Principles not being yet well united, it is the less difficult to separate them, and consequently to determine and multiply them by their Operations.

It is for this Reason, that they who work in Mines throw them by, and separate them from the Oar, which is so much the better, by how much less Earth and Sulphur there is in it.

It is easie to conceive, by what I have said, that each Metal has its proper Marcasite, which is, as it were, its Seed or Bud; and the more it ferments, and the nearer it approaches to a metallick Perfection, the farther it goes from the Nature of a *Marcasite*.

It must, nevertheless, be considered, that we sell commonly but three Sorts of *Marcasites*, which are those of Gold, of Silver, and of Copper. That of Gold is usually a little round Ball, very weighty, and difficult to break; that of Silver is almost of the same Make, but is not of so clear a Colour; that of Copper is either round or long, and oftentimes irregular, and of the Largeness of a Tennis Ball: This *Marcasite* is very hard, but if you leave it in a moist Place, the Moisture will penetrate it and turn it all to Vitriol, and so come to nothing. When you break in Pieces these *Marcasites* of Copper, they are of a yellow Gold Colour, and radiated like a Sort of Sun. These are the Descriptions of the common *Marcasites*; but for those of Iron, Tin, and Lead, I cannot, to this Day, learn positively what they are. There are some who affirm positively that the Load-Stone is the *Marcasite* of Iron; the Bismuth, or natural Tin-glass, that of Tin; and the mineral Zink or Spelter, that of Lead: And there are others who say that Tin and Lead are the same Thing, and differ

fer only in Colour, grounding themſelves upon this that the Ancients call'd Tin, white Lead, and Lead, black Lead, ſo that there cannot belong to them two Sorts of *Marcaſites*; and my Sentiments muſt concur with theirs, ſeeing it has not been poſſible for me to find the natural Glaſs of Tin, as I ſhall ſhow hereafter.

It is remarkable, that tho' I ſay that we ſell but three Sorts of *Marcaſites*, yet there are very few large Druggiſts Shops, where there are not found ſeveral other Sorts, as the Square, the Flat, the Grey, the Black, the Yellow, and the like; and this happens, becauſe they give the Name of *Marcaſite* to every Thing they don't know, and take to be a Mineral; and the Buyer not knowing what it is any more than he that ſells it, it happens that they who work it are deceiv'd, and loſe their Labour.

I have by me a white *Marcaſite* full of Veins of Gold, which was brought from the *Iſles*, and was affirm'd to me to be the true Gold Oar.

Lemery. The *Marcaſite*, *Magneſia*, *Biſmuth*, *Zinck*, *Spelter*, or *Tin-glaſs*, is a metallick Mineral, of which there are ſeveral Kinds, for all Stones which contain more or leſs of a Metal, are call'd by this Name; but three Sorts are more principally intended by the Word *Marcaſite*, that of Gold, that of Silver, and that of Copper.

The two Firſt are in little Balls of the Bigneſs of a Nut, almoſt round, weighty, browniſh without, but of different Colours within; for one has the Colour of Gold, the other of Silver, but both bright and ſhining.

The *Marcaſite* of Copper is as large as a little Apple, round or oblong, brown without, yellow and criſtalline within, bright, ſparkling, and eaſie to be broken.

The *Marcaſites* are taken out of the Mines; they contain a great deal of Sulphur and vitriolick Salt, eſpecially that of Copper.

They are reſolutive, and are applied outwardly: The pure white Magiſtery of Tin-glaſs, made with pure Spirit of Nitre, being mixt with Pomatum, is an excellent Coſmetick to whiten the Hands and Face, and is likewiſe good for Tetters, Ringworms, &c.

3. *Of* Silver.

Pomet. *Silver*, which the *Spaniards* of *Peru* call *Platta*, is the beſt and moſt perfect Metal, next to Gold; it is white, hard, extenſible, and very agreeable to the Sight. The moſt famous Mines for *Silver* are thoſe of *Rio de la Plata*, that is, the *River* of *Silver*, and of *Potocchi* in *Peru*, which were diſcovered in the Year 1545: The Encloſure, which bounds the Extent of 'em, is call'd *Potoſi*, which is a Mountain ſituated in a flat Campain, riſing in the Form of a Sugar-Loaf, above a League in Circuit below, and a Quarter of a League on the Top. The *Silver* coming out of the Mine is refin'd with Mercury or Quickſilver, and there have been ſome Years in which they have taken out of theſe Mines three thouſand hundred Weight of *Silver*, pure and neat; and for the Refining it, have made uſe of ſix or ſeven thouſand hundred Weight of Quickſilver; for the more they refine it with Quickſilver the better it is. There are ſeveral other Silver Mines in the *Indies*, in *Europe*, and even in *France*.

As *Silver* is of itſelf a very pure Metal, and eſpecially when it has been well refin'd, the Chymiſts perform ſeveral Operations upon it, the firſt of which is its Purification.

Purification of Silver *by the* Cupell.

Silver purified by the *Cupell*, is Silver which is put into melted Lead, and by Means of the Fire, and a ſecret Quality of the Lead, it works upon the Silver as the White of an Egg does upon Sugar when it is well refin'd; they granulate it after the Manner that we ſee it, which if it be Proof ought to be well refin'd, white, and very ſhining: This Sort of Silver is made uſe of in ſeveral of the following Chymical Operations.

Of the Cryſtals *of* Silver, *or the* Vitriol *of* Luna.

They extract the *Cryſtals* of *Silver* from cupell'd Silver diſſolv'd in Spirit of Nitre, and when the Moiſture is almoſt evaporated they

they take away the Cryſtals, which being applied to the Fleſh, make an Eſcar as the *Lapis Infernalis*.

Of the Lapis Infernalis, *or the* Silver Cauſtick.

The *Infernal Stone* is ſo call'd, becauſe of its burning Quality, and its black Colour; it is made of cupell'd Silver diſſolv'd in Spirit of Nitre, afterwards perfected by the Fire and pour'd into a Mould, warm'd and greas'd on the Inſide, where growing cold it coagulates, and becomes a Stone of the ſame Shape that the Mould has given it.

This Stone ought to be made Choice of in little Pieces of a Finger's Length, dry and ſolid, of a brown Colour, approaching to that of Iron, which will neither burn the Fingers nor Paper, unleſs they are moiſtned, and does not melt when expos'd to the Air without Difficulty, but will immediately burn any Place that is moiſtned as ſoon as it is laid upon it, which are the true Marks of the *Infernal Stone* when rightly prepar'd with the cupell'd Siver: You ought to reject that which is green, and turns the Paper it is wrapt in of that Colour, that grows wet, and is eaſily diſſolv'd in the Air, becauſe it is made with Copper. Some uſe the common Plate Silver, or the Burnings of old Silver Lace, but the Stone they make is not ſo good as the other. This Stone is much us'd by Surgeons to burn and conſume dead and ſuperfluous Fleſh, but ſpecial Care muſt be taken not to touch the ſound Fleſh, becauſe the Stone will not fail to burn it, and cauſe an Extremity of Pain, eſpecially if the Place be wet.

The *Lapis Infernalis* has the Property of Staining Marble and Entring into it, ſo that upon Sawing the Marble the ſame Figure ſhall appear within that was on the Outſide, and will never wear out; you work with it as if it were a Crayon, and the Colour it makes is Black.

Of the Tincture *of* Silver.

The *Tincture of Silver* is a Diſſolution of Silver in the Spirit of Nitre, which they precipitate by Means of a Solution of Salt; then they put this Silver Calx into Spirit of Wine acuated with volatile Salt of Tartar, and volatile Salt of Urine, and thence draw a beautiful, celeſtial, blue Tincture, very much recommended againſt the Epilepſy, the Palſy, Apoplexy, and the other Diſeaſes of the Brain: The Doſe is from ſix to fifteen or ſixteen Drops.

Silver, in *Latin*, *Argentum*, or *Luna*, is a Metal very compact, weighty, hard, white, ſmooth and ſhining, very extenſible by the Hammer, and reſiſting the Cupell: It is taken from ſeveral Mines in *Europe*, but the greateſt Quantity comes from *America*, and eſpecially from *Le Rio de la Plata* in *Peru*, where it is often found intermixt with ſmall white Cryſtalline Stones, and with Gold, Copper or Lead; being taken out of the Mine, it is refin'd with Quickſilver, and then tranſported. They who would render it as fine as poſſible, refine it by the Cupell and by Departure in the following Manner. *Lemery.*

They make the Cupell red hot in the Fire, and they put four or five Times as much Lead as Silver to cupell it: They let the Lead melt and extend itſelf, ſo that one Part of it, in a little Time, enters into, and fills the Pores of the Cupell. They caſt the Silver into the midſt of the Cupell, where it is not long before it melts; they blow the Fire 'till it is ſo ſtrong, that the Flame encompaſſes the whole Matter; then all the Impurities unite with the Lead, becauſe that Metal being ſulphureous it cleaves to and embraces the groſs Bodies better than the Silver. The Fire drives the impure Mixture to the Circumference in the ſame Manner as Scum or Scoria, and the Silver remains fine and clean in the Middle. They know that the Refinement is perfected when no more Fume ariſes; then they pour the Silver into a Mould, to let it cool, and this they call Silver of the Cupell. The Scoria of Silver mixt with Lead make the Litharge, of which I ſhall treat hereafter. Theſe Scoria conſiſt of the Parts of ſome other Metals, or the Marcaſites, which were mix'd with the Silver when it was taken out of the Mine.

It is to be noted, that Silver being thrown into melted Lead runs ſooner into a Fuſion, than if it were put alone to melt in a Crucible,

cible, becauſe the ſulphureous Parts of Lead contribute to the ſpeedy Fuſion of Metals.

This Purification of Silver clears it from all other Metals but Gold, which likewiſe reſiſts the Cupell ſo that one cannot be altogether aſſured, that this Silver of the Cupell is entirely Silver; therefore if one would ſeparate it from any little Quantity of Gold that may be in it, Recourſe muſt be had to another Operation, call'd the *Departure*, and this is the Manner of the Proceeding.

They melt together in a Crucible by a ſtrong Fire, three Parts of Silver, and one Part of Gold; they throw this Mixture, when melted, by little and little into cold Water, where it coagulates into Grains; they throw away the Water, and dry theſe Grains, and then put them to diſſolve in two or three Times as much *Aqua fortis*; the Silver is diſſolv'd, and the Gold is precipitated to the Bottom of the Veſſels, becauſe it cannot be penetrated by this Diſſolvent.

It is to be remark'd, that in this Operation they mix Gold with the Silver, that if the Silver ſhould contain any ſmall Quantity of Gold, it might be drawn and precipitated along with that which was added: This precipitated Gold is call'd *Gold* by *Departure*, and they can eaſily turn it into an Ingot, by melting it in a Crucible over the Fire, with a little Borax, and pouring it into a Mould.

This Diſſolution of the Silver is thrown into an earthen Veſſel, in which there is a great deal of Water, and a Plate of Copper, where it is left for five or ſix Hours, or 'till all the Silver is precipitated, and ſticks to the Copper Plate, and then they gather it together and dry it; and it is this they call the Precipitate of Silver, and ſometimes the Calx, or Chalk of Silver. The Water in which this Precipitation was made becomes Blue, becauſe of ſome Portion of Copper diſſolv'd in it, and is call'd the *Second Water*; it is us'd to deterge, and to eat proud Fleſh, being applied outwardly.

Silver alſo may be precipitated, by mixing Salt Water in the Diſſolution; for the Sea Salt will produce the ſame Effect as the Parts of the Copper, that is to ſay, by puſhing rudely againſt the Points of the *Aqua fortis*, which hold up the Particles of the Silver, it will break 'em, and make 'em let go their Hold, ſo that the Silver having nothing to ſupport it, will, by its own Weight, fall to the Bottom.

The Silver ſo precipitated is caſt into an Ingot, by melting it in a Crucible, with a little Salt-Peter, and afterwards pouring it into a Mould. This Silver is the fineſt of all, and of twelve Penny Weight, if it has ſo much; but there is always ſome little Allay of Copper to be found in Silver, let it be never ſo well refin'd.

That which is call'd a *Carat* in Gold, is a Penny Weight in Silver; ſo an Ounce of very fine Silver is of twenty Penny Weight, or twenty-four Scruples, which make twenty four Times twenty Grains: This Ounce of Silver ſhould not be diminiſhed by the Proofs; but if it loſe a Scruple by the Cupell, the Silver is but of nineteen Penny Weight ſixteen Grains; if it loſes two Scruples, it is ſeventeen Penny Weight twelve Grains; but they don't expreſs themſelves by twenty Penny Weight in Silver, as they do by twenty-four Carats in Gold, for they double two Pence in Silver, and ſay Silver of twelve Penny Weight, to expreſs Silver of the utmoſt Purity; Silver of eleven Penny Weight and an half, Silver of eleven Penny Weight, to denote the Degrees of its Fineneſs, and ſo of the reſt.

Plate Silver contains one Part Copper, to twenty-four Parts Silver; and Silver of the Cupell has but one quarter Part Copper, to twenty-four Parts of Silver.

They beat the pureſt Silver, and reduce it into very fine and thin Leaves, which we make uſe of in Medicine; one may likewiſe uſe the Precipitate of Silver inſtead of theſe Leaves.

Silver is proper for thoſe who have uſed too great a Quantity of Quickſilver, either by Frictions, or taken inwardly, for it binds or amalgamates itſelf with it in the Body, and depriving it of its Weight, takes away its Virtue: It may be taken from four Grains to a Scruple, and a larger Doſe may be given without Fear of any Danger. It is pretended by ſeveral Authors to be an infallible Medicine for Diſeaſes of the Head and Brain; but Experience ſhows us, that it is of no Uſe in ſuch Caſes.

The Aſtrologers and the Alchymiſts call it *Luna*, becauſe they imagine this Metal to be of the ſame Matter as the Moon, and that

it receives continual Influences from her for its Nourishment.

4. Of Iron or Mars.

Pomet. IRon which the Chymists call *Mars*, because of the Influences they pretend it receives from that Planet, is a Metal the hardest, driest, and most difficult to melt of all others: It is compos'd of an Earth, a Salt, and a Sulphur, ill digested, and ill united, which makes it subject to be rusty. There are Mines of *Iron* in *Spain*, *Germany*, *Sweden* and *England*: The best in *France* are those of *Champagne*, *Lorrain*, and *Normandy*; there are some in *Burgundy*, *Berry*, and other Places. An *Iron* Mine is sometimes found within an Inch of the Surface, sometimes one, two, three, four, five, or six Foot deep. The Oar is found in different Manners, sometimes in Pieces, and sometimes in Sand. I shall not discourse here of finding out Mines by the magical Rod, which is of Hazel, because *Monsieur*, the Abbot *de Vallemont*, has lately written a very exact Treatise about it.

The Manner of taking Iron *from the* Oar, *and making it into cast Iron, commonly call'd* Sow Metal.

After the *Oar* is taken from the Mine they wash it in a running Water to separate the Earth from it, and then carry it into large Furnaces, where covering it with Coals, Flint-Stones, and Potters Clay or Earth, by the Means of two large Pair of Bellows wrought by a Water-Mill, it melts like Lead; and after scuming from it a Dross, which when cold becomes like Glass, they stay the Bellows, and with an Iron Bar open a Hole which is in the Bottom of the Furnace, and immediately comes out as it were a Stream of Fire, which runs into Holes, made in the Nature of Moulds, of six, seven, to ten Foot long, and a Foot broad. The *Iron* thus thrown into these Moulds is what the Smiths call *Sow Metal*. 'Tis to be remark'd, that when they would make Cannon-Bullets, Mortars, Weights, Backs of Chimneys, or other Works of this *Sow Metal*, or rather cast *Iron*, they take up the running Metal in great Iron Ladles, to put it into Moulds made in deep Sand, or else of the same Matter, that is to say, of *Cast Iron*.

It is also to be observ'd, that the finer the Work is to be, the longer is the Metal to remain in Fusion; for the Matter continues but twelve Hours for the coarser Works, and fifteen or eighteen Hours for the other. The *Cast Iron* of *France* cannot be touch'd by the File, as that of *Germany* and other Places, but must be polish'd with Masons Dust or Emery.

Of Iron *in* Bars *and other Kinds.*

When they would reduce this Metal into true *Iron*, they take one of these Lumps of *Sow Metal* and carry it to a Sort of Forge, which has Turf of Earth in the Middle, where is a Hole into which the Matter flows as it melts. They melt the Metal by the Means of Charcoal, and two great Pair of Bellows which are mov'd by Water. As this Matter melts, the Refiner stirs it with an Iron Bar, and the more vigorously the Matter is stir'd, the more kindly will the Iron be, and the better qualified. After it is well stir'd, they carry the Matter, which is hardned, with large Tongs to an Anvil, where, with a great Hammer, they beat it to force the Grease out of it, or rather the Earth or other forreign Matter that might have remain'd in it, and then the Iron is made and need not be refin'd again, but will endure the Filing. When they would reduce it to Bars, or any other Fashion, they take this Mass, which the Workmen call the *Piece*, and carry it to another Forge, and by the Help of Charcoal, and two Pair of Bellows wrought by two Men, they make it red hot, and then carry it to the Anvil, and with a wooden Hammer, with Iron at the End of it, they make it as long and as thin as the Hammerer pleases. There is one Thing remarkable that is of no small Consequence, which is, that seeing the Hammerer can reduce but half this Piece into Bar, because he must hold it fast by the other Part, he therefore, to cool it the sooner that he may go to work upon the other, throws it into Water, and this is the Cause that the *French Iron* is brittle; but this might be easily remedied, by letting it cool of it-

itself: It may be objected, that it is not always the Quenching it in Water that makes it so churlish and brittle, but it proceeds oftentimes from the Mineral, or from its not being well stir'd: I don't disagree to this, but there is a *Proverb* which says, *Ill to Ill can never be good*; therefore what can easily be remedied ought not to be made worse: And this is the Manner of making *Iron* into *Bars*.

Of Iron *in the* Gad, *and of* Iron Wire.

Iron in the *Gad* or *Rod* of *Iron*, is made from Iron in the Bar, which has been heated in a Kind of Furnace, and by Steel Mills cut into the Shape and Figure we see it in. The *Iron Wire* is made of these Rods drawn through little Holes, after the Manner that they make Wax-Candles: They begin with the largest Hole, and finish by the little one, still diminishing the Size of it.

Of Iron Plates, *and of* Black *and* White Iron.

The *Iron Plates* are made of Bars heated and made thin with Hammering. There are two Sorts of Plates, the great and small. They make the *Black Iron* by Beating the Plate with smaller Hammers: But besides this, in *Germany* they make a white Iron, of which they make several Utensils: This is a soft Iron reduc'd into thin Plates, and afterwards cover'd with Tin, in which Operation it is said they use *Aqua fortis*. There is white Iron made at *Nevers*, but that of *Germany* is most esteem'd because it is more white and brighter, and will not rust as the other.

Of Steel.

Steel is an Iron that has been melted several Times, and quench'd in common Water, or in a Water compos'd of several Druggs, as shall be shown hereafter.

The best *Steel* is that which comes from *Germany*, and is call'd *Steel* of *Carma*, from a Village in *Germany*, call'd *Kernent*, where the best *Steel* is made. This Sort is call'd *Steel* of a *double Mark*, and is us'd in Making such Instruments as are extreamly fine; as Lancets, Razors, Graving Tools, *&c.* The second Sort is that they call *Rose Steel*, because when 'tis broken there appears something in it like a little Rose of the Colour of the Eye of a Partridge; and besides, the Casks that they come in are mark'd with a Rose. This *Steel* is in little Bars from one Foot to two Foot long, and half an Inch thick. There are likewise several softer Sorts of *Steel* which are but the Refuse of the *Rose Steel*, which some call *Steel* of the *single Mark*. We have likewise *Steel* from *Hungary*, *Italy*, and *Piedmont*. There are likewise several Sorts made in *France*, as those of *Vienne*, of *Rive* in *Dauphine*, of *Clamecy* in *Auvergn*, of St. *Disier* in *Champagne*, and it is made likewise at *Nevers*, and at *La Charite*, and this they call *Common Steel*.

But of all the Sorts of *Steel* in *Europe* there are none that comes near to that of *Kernent* for Goodness, because amongst the hundred and fifty Iron Mines that the *Germans* are possest of, there are no People but those of *Kernent*, that know the just Quantity of Arsenick, Tar, Orpiment, Sublimate, Antimonie, white Coperas, and other Druggs, of which they compose their Water to dip it in; and this, in few Words, is the Reason why no good *Steel* is made but in *Germany*, and that many Persons ruin themselves by endeavouring to counterfeit it: But as to the Tempering of common Steel, they make use of nothing but common Water.

There was formerly a *Steel* which came from *Damascus*, and was very good; and if we will believe Mr. *Furetiere*, the Temper of it was made by the Impressions of the Air, when a Horseman Riding full Speed held it in his Hand and brandish'd it in the Air. He also says, that they temper it by Whetting it upon a moist Goats-Skin.

Good *Steel* ought to be brittle, of a fine Grain, and as white as it can be made. The Chymists make several Operations with it, of which hereafter. As for the Filings of *Steel*, they are of some small Use in Physick, and the best and most natural is that of Needles; its Proof is by putting it upon a lighted Candle, that which burns by halves, and puts out the Candle, is mix'd with the Filings of Iron.

Of the Saffron *of* Mars, *or the* Crocus Martis.

The *Crocus Martis*, which is call'd aperitive, is a Preparation of Iron or Steel, which is

is made after three Manners. *First*, by exposing Plates of Iron to the Dew. The *Second* is by Sprinkling the Filings of Iron with Rain Water, or Water mixt with Honey; and after some Time you shall have thence a Rust of a brown Colour. These Preparations of *Iron* or *Mars* are very long, but very good for the Diseases hereafter mention'd. But as these two Sorts, as I have said, require much Trouble, and have but a bad Colour: They chuse rather a *Third* Way, which is to take a Piece of Steel, and take a white or Flame Heat of it in a Smith's Forge, and then applying to it a Roll of Sulphur, melt it down, and so melted, put it into a Crucible together with Sulphur, and reduce it into Powder of a beautiful red Colour; others use the Filings of Iron instead of Steel.

The aperitive *Saffron* of *Mars* is commonly call'd *Crocus Martis aperitivus*, or *aperiens*, and is an excellent Remedy for the Dropsy, and to cure the Green Sickness. The Dose is from ten Grains to forty in some Opiat, Conserve or Lozenge, or as Mr. *Lemery* says, with some Purgatives.

Of the astringent Saffron *of* Mars.

The astringent *Saffron* of *Mars*, otherwise *Crocus Martis astringens*, is one of the former Preparations of *Mars* wash'd several Times with Vinegar, and afterwards put into a Crucible, and by a forceable Calcination for five or six Hours, is reduc'd to a reddish Powder, but not so beautiful as that above.

The Use of this *Crocus* is to stop Blood when voided, either above or below: It is taken in a like Dose as the former, in Medicines proper for the Malady. The Ancients have given both of these the Name of *Crocus* or *Saffron* from their reddish Colours.

Of the Salt *or* Vitriol *of* Mars.

There are two Sorts of *Salt* of *Mars* or *Iron*, but the best is that which is made by putting the Oil of *Vitriol* and Spirit of Wine in an Iron Pan, and when it has staid there three Weeks or a Month, you will find at the Bottom a greyish Salt, which you must dry, and then preserve it carefully. The other *Salt* of *Mars* is made by putting the Filings of Steel into distill'd Vinegar, proceeding in the same Manner as you would make Salt of Saturn, as shall be shown hereafter. The first *Salt* of *Mars* is an excellent Remedy against Obstructions: The Dose is from four to twelve Grains in any Liquor proper for the Distemper. As for the Choice of it, the whitest and driest is the best.

Of the Oil *of* Mars.

They call improperly the *Oil* of *Mars* or *Iron*, a Salt of Iron resolv'd into Liquor in a Cellar. Some People use this Oil as the Salt with this Difference, that they do it in a larger Dose.

Of the Chrystals *of* Mars.

They extract the *Chrystals* of *Mars* by putting the Filings of Steel into Water, and putting upon it a good Spirit of Vitriol, and by putting it in a Cellar, they draw thence *Chrystals* of a greenish Colour, which being dried may be made use of to the same Purposes as the Salt or the Oil, but they must be given in lesser Quantities, because of their great Acrimony. Some Persons pretend, that by a Retort they can draw a Spirit of Vitriol from these *Chrystals*; but as this Spirit must be very weak, I should not advise any Body to trouble themselves about it.

Of the Tincture *or* Syrup *of* Mars *with* Tartar.

They draw from the Rust or Filings of Iron, by the Help of *Tartar* and boiling Water, a blackish *Tincture*; which after having been evaporated and reduc'd to the Consistence of a *Syrup*, is what they call *Tincture*, or *Syrup* of *Mars*; others cause almost all the Moisture to evaporate, and so make that which we call the thick *Tincture* or the Extract of *Mars*.

They attribute to these Tinctures the Property of being very good Aperitives; their Doses are different, for the thicker the Tinctures are the less of 'em must be taken; so the ordinary Dose may be from a Dram to half an Ounce.

Of

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-148394-p0150-7 DFG

Of the Tincture *or astringent* Syrup *of* Mars.

They likewise draw from the Rust of Iron, with the Lees of Wine, or the Juice of Quinces, or any other astringent Juices, a *Tincture*, *Syrup*, or *Extract*, to which they attribute a binding Quality. The Dose is likewise according to their Thickness, but the common one is from ten Grains to half a Dram in some astringent Liquors.

Of Mars Diaphoretick.

The *Mars Diaphoretick* is made of the Rust of Iron mix'd with an equal Quantity of Sal Armoniack, and by a subliming Vessel, they draw thence Flowers which they dissolve in Water, and then precipitate them by pouring upon the Dissolution the Oil of *Tartar per deliquium*. They dry this Powder, which being dried is what they call *Mars Diaphoretick*, altho' the diaphoretick Virtue, which it may have got from the Sal Armoniack is not very great, because it is almost all carried away by the Water.

Iron in *Latin* call'd *Ferrum* or *Lemery*. *Mars*, because the Astrologers pretend that this Metal receives Influences from the Planet of that Name, is a Metal very hard, dry, and the most difficult to melt of all others. It is naturally compos'd of a vitriolick Salt, of Sulphur and Earth, very ill digested, and bound together, which makes it rust so easily. There are several Mines of it in *Europe*, and especially in *France*, in *Champagne*, *Lorrain*, *Normandy*, *Burgundy* and *Berry*. They take it up sometimes in a Marcasite, that is of the Bigness of Pig-Nuts, and of the same Colour, streak'd with shining Metallicks, sometimes in Sand. They wash this Marcasite to get the Dirt from it, then they put it into great Furnaces made on Purpose; they cover it with Charcoal, Flints and Potters Clay, and by Means of a very violent Fire, blown by huge Bellows, they put it into a Fusion; they scum thence a Matter that is as it were vitrified, resembling Enamel; then they let it run into Moulds, for great Wedges, about ten Foot long, and a Foot thick; this is call'd by the *French*, *Gueuse*, commonly Sow Metal. The Rust of Iron is Iron penetrated and ratified by the Moisture of the Air, which the *Latins* call *Ferrugo*; it is aperitive for the Urine, and astringent for the Belly, proper for all Illness caus'd by Obstructions, and to stop Looseness.

Iron made red hot in the Fire, and several Times quenched in Water, renders the Water astringent and proper for Diseases of the Belly. The Waters of a Smith's Forge retaining some saline and vitriolick Particles of the Iron, are astringent for the Belly, and aperitive for the Urine.

Steel is Iron render'd more hard, more compact, more fine and polish'd, by Calcination and Dipping it in Water: To do this, they lay Iron, and the Hoofs of Animals, *Stratum super Stratum*, in a Furnace made on Purpose, near the Mines; they put Fire to it, and when the Metal is softned and almost melted, they dip it in cold Water, that so the Pores which were open'd by the Force of the Fire may immediately be shut up; and they oftentimes repeat the Calcination and the Dipping.

The Hoofs of Animals burnt in the Fire produce two Effects; the First is, That they dissipate the most volatile, the most saline, and the most rarified Particles of the Metal. The Second is, That a Portion of the volatile Salts which these Hoofs do natural-ly contain, is introduc'd into the Pores of the Metal. Now this Salt being rendred an Alcali by the Calcination, it absorbs and destroys the Points of the vitriolick Salt, and the Acid which remain'd in the Iron; so that the Motion of this Salt being relax'd, the Metal does no longer rarify itself so much, which may contribute to give a good Quality to the Steel; but the principal one that it gains comes from the Water it is dipt in, which is made on Purpose. They make Steel in many Places of *France*, *Italy*, *Piemont* and *Hungary*, but the best is made in *Germany*, at a Town call'd *Kernene*. Steel ought to be brittle, of a fine Grain, and white. They that would be at large instructed, as to the different Sorts of Steel, may read what Mr. *Pomet* has written in his Book of Druggs.

The Filings of Steel are proper to remove Obstructions, for the Jaundice, and for the Diseases of the Spleen; the Dose is from a Scruple to a Dram.

The

The Water in which red-hot Steel has been quench'd call'd chalibeate Water, is an Astringent, and is good against a Looseness.

It is remarkable, that in Iron there shou'd be two such very differing and opposite Qualities, as of Drying and Moistning, Opening and Obstructing, Astringing and Relaxing; these Qualities are thought to reside in the mixt Part of the Body, the Relaxing Quality in the saline and more volatile Part, the Astringent in the Earthy, and that which is more fixt.

The Salt of Iron is made in the following Manner. Take Oil of Vitriol, or of Sulphur *per Campanam*, two Pounds; Water two Gallons; mix them well in a well glaz'd earthen Jar, by dropping the Oil into the Water, and stirring it well with a wooden Rod; put into this Mixture, of Filings of Iron, two Pounds or more, stiring it for half an Hour, then let it settle; decant off the clear Water, filter and put it into a frying Pan, which over a Charcoal Fire evaporate to Drineſs, and so there will remain a pure white Salt at the Bottom. This Salt cures and opens the worst Obstructions in the Womb or Bowels; It sometimes purges, and may be given to half a Scruple in a Glass of Wine alone, or sweetned with Syrup of Violets.

After the Filings of Iron are turn'd into Rust, and a Tincture extracted from thence, the *Fæces* are a Kind of *Crocus* made without Fire, which are drying and binding, good against Fluxes, Bloody Flux, Gonorrheas, Whites in Women, &c. They dry up Ulcers and Wounds, stop all Fluxes of Blood, the Flux of the Terms and Hemorrhoids; they strengthen the Liver, dry up Water in Dropsies and running Ulcers, in the Legs. It is given from a Scruple to half a Dram, in a proper Vehicle, every Night going to Bed.

The Copperas, or Vitriol of Iron, is made in great Quantities by a Cementatory Calcination, then perfected by Dissolution, Evaporation and Christallization.

Not only the Salt of Iron, but the Tinctures are said to open Obstructions of the Reins, cure Ulcers in the Reins and Bladder, help the Cholick, Weakness of Stomach, or Want of Appetite; give Ease in the Gout, and other Pains of the Joynts, both by inward Taking, and outward Application.

The Rust or Vitriol of Iron mixt with Vinegar and applied, is good against Tetters, Ringworms, Scabs, and running Sores, or Breakings out, though of many Years Continuance, especially if a little Roch Alum be mixt with it, taking away the St. *Anthony*'s Fire, or any other lesser Heats and Inflammations.

5. *Of* Quicksilver.

THat which we call *Quicksilver*, crude and running Mercury, Hydrargyrie, liquid Silver, or the Water of Silver, the Proteus of Nature, the fugitive Salt, or the mineral Spirit, is according to Mr. *Charas*, a metallick, or mineral Liquor, of a volatile Nature, found in the Mines, and compos'd as is believ'd of a white sulphureous Earth, and of its own proper internal Mercury, which the Philosophers think to be one of their Principles, in like Manner, as their Salt and their Sulphur. Some Authors, and Mr. *Charas* amongst the rest say, that Mercury is not placed in the Rank of Metals, but that they have given it the Name of a Half Metal, because that neither being hard nor malleable as the true Metals are, yet it easily unites itself to any other Metal, especially to Gold, to which it often serves as an Intermediate to join it to other Metals. Its Colour of Silver, and the Disposition it has to Motion, is the Reason why they call it *Quicksilver*; from the same Colour, and its Fluidity it is nam'd *Hydrargyrum*, that is to say watery Silver, or the Water of Silver: They call it *Mercury* from the Analogy which it bears to the Planet of the same Name, or because of the Variety of the Shapes it can take suitable to what the Heathens represented of that Deity. 'Tis likewise for the same Reason and the Diversity of Colours that may be given it, that 'tis nam'd Proteus, and from its Fluidity and Volatility, it is call'd the *Fugitive Salt*.

Quicksilver is found in the Mines after different Manners, sometimes enclos'd in its own Mineral, and sometimes as fluid and of as changeable a Figure as we see it, and because it is found natural some have given it the

the Name of *Virgin Mercury*; they find it ſometimes amongſt Earth and Stones, and very often embodied in a natural Cinnabar, as we ſhall ſee hereafter. They who take Quickſilver from its Mine, or to ſpeak more properly from the Places it lies in, make uſe of great Iron Retorts to ſeparate it from its Mineral, or the other hard Bodies with which it is joyn'd, and by the Means of Fire and freſh Water, into which it falls, they render it fluid, ſo as we commonly have it. The Oar of the Mercury is ſo like the Antimony of *Poitou*, that if it were not for the Rays or Streaks which are ſomewhat whiter, there is no Body that could find the Difference; and when it is found running or liquid in the Ground, the Slaves who take it up have nothing to do but make it run through *Chamois* Leather to cleanſe it from its Impurities. There are but two Places in *Europe* from whence they take Quickſilver, which are *Hungary* and *Spain*; that of *Hungary* is carried to *Vienna* in *Auſtria*, and from thence to *Holland*, from whence we have it; that of *Spain* is tranſported to *Peru* to ſerve to purify their Gold and Silver, as I have obſerv'd before. The *Spaniſh* Quickſilver was common enough in *France*; but becauſe this Quickſilver, being put upon Silver a little heated, had the Property of Gilding the Superficies, and of giving the Silver a very fine Vermillion Colour, this rich Quality, according to ſome Alchymiſts, which in Reality is nothing, and the Difficulty there is of having it at preſent, becauſe the King of *Spain* has expreſly prohibited the Tranſportation of it into other Countries, has made it ſo ſcarce as it is at preſent, as well as the natural Cinnabar. Some modern Authors have ſaid, that there is Quickſilver found in the *Indies*, *Poland*, *Germany*, and even in *France*, which perhaps may be true: But notwithſtanding all the Pains I have taken, I could never diſcover the Truth of the Matter; this is true indeed, that a Mine of Cinnabar was lately found in *Normandy*, between St. *Lo* and *Charentan*, near a Place call'd *Le Foſſe Rouge*; but the great Charges of it oblig'd them to ſtop it up again. Mr. *Lemery* ſays, that *Quickſilver* is uſually found at the Top of Mountains cover'd with white Stones, which are as brittle as Chalk; the Plants which grow upon theſe Mountains ſeem greener and larger than elſewhere, but the Trees which are near the Quickſilver Mine rarely produce Fruits or Flowers, and their Leaves come out later than in other Places.

One of the Signs that diſcover a Mine of *Quickſilver*, is when in the Month of *April* or *May* there come thick Miſts or Vapours out of one particular Place, which cannot riſe far in the Air becauſe of their Weight: It is to ſuch a Place that they go to look for this Metal, and eſpecially if by Chance it is ſituated oppoſitely to the *North* Wind, for then they think the Mine will prove beſt: They likewiſe find a great deal of Water about theſe Mines, which it is neceſſary to draw off at the Foot of the Mountain before you can come to work them.

They who would know more concerning Gold, Silver, and Mercury, may read *Acoſta*, of the *Indian Mercury*, who treats of it very largely. You ſhould chuſe ſuch Quickſilver as is white, running, clean, of a lively and beautiful Water, and reject that, which being put into any Copper Veſſels, ſuch as Scales of a Ballance, or others, appears like Lead, that is to ſay, when its Colour is brown, and it leaves Tails or Trains behind it, as if it were roapy, or ſticks to the Hands when you handle it, and is form'd into little round Balls, which is of no ſmall Conſequence, becauſe the greateſt Part of the Quickſilver that is conſum'd, is made uſe of by Look-inglaſs-Makers, Goldſmiths, Burniſhers, Gilders, and others; and if by Miſchance, or Roguery, in ſuch a Parcel of Quickſilver as is us'd at one Boiling, there ſhould be one Pound of Lead, it would ſpoil their Works.

Beſides theſe Qualities before-mention'd, which ought to be in Quickſilver, one may prove it by putting a little of it in a Silver Spoon, and letting it evaporate over the Fire; and if there remains a yellow Spot, it is a Mark that it is natural; or if it leaves a black one, it is a Sign that it is mixt with Lead or Tin. *Quickſilver* is a Matter ſo very weighty, that Mr. *De Furetiere* ſays, that a ſolid Foot of Mercury weighs nine hundred forty ſeven Pound, and that a cubical Foot of the *Seine* Water weighs but ſeventy Pounds; that is to ſay, a Veſſel which will hold thirty five Pints of the Water of the River *Seine*, according to the *Paris* Meaſure, will contain nine hundred forty ſeven Pounds

of Quickſilver. As *Quickſilver* is ſo extreamly weighty, ſo it is no leſs ſtrong; ſince a fifty Pound Weight of Iron, being put upon a Bouillon of Quickſilver, which as it comes from *Holland* generally weighs a hundred and threeſcore or fourſcore Pounds, it ſhall no more ſink in it than if it were an Ounce, which I could never have believ'd unleſs I myſelf had ſeen it. As to the Properties of Quickſilver they are ſo great that they exceed Imagination; and ſome Perſons pretend, that a Dram Weight of Quickſilver has the ſame Effect as any greater Quantity whatever; and that if they preſcribe it in a large Doſe, as they do ſometimes, eſpecially in the *Miſerere* or Twiſting of the Guts, it is only that it may paſs the faſter, and diſintangle the Bowels. It is likewiſe a ſurprizing Thing, that into whatſoever Shape you metamorphoſe Mercury, you may make it return to its firſt State of Nature, and that with a very ſmall Diminution. *Borrichius*, a *Daniſh* Chymiſt ſays, in his Book of Chymiſtry, that having operated upon ſome Mercury for a Twelvemonth together, and having reduced it into ſeveral Forms, it took its own Shape, at laſt, by the Means of a little Salt of Tartar. The great Conſumption of Quickſilver, eſpecially in *France*, is the Reaſon why the *Dutch* have rais'd it two Stivers of their Money in the Pound, which is three Sous or 3 Pence of ours; and ſince they have, for a long Time, engroſs'd that Merchandize, it is not ſold there under ſix and thirty Sous the Pound. I ſhall not here recount the ſeveral Virtues that are attributed to this Metal, becauſe ſeveral Authors have treated of them, nor decide the Controverſy, whether it be cold or hot; but I muſt ſay this, that it is ſo cold, externally, that it is impoſſible to hold one's Hand in a Quantity of Quickſilver for the Space of a Quarter of an Hour. It is wrong to think what ſome modern Authors have written, that the *Dutch* turn Mercury into Cinnabar to tranſport it into other Places, and that for theſe three following Reaſons: *First*, Becauſe Quickſilver is eaſily tranſported in Sheep-skins, put into Barrels, and fill'd up with Straw or Shavings: The *ſecond* is that, if we were oblig'd to revive Cinnabar into Mercury, we could not afford it at the Price we do; and all the Mercury that is reduc'd in *Holland* into Cinnabar, is us'd in *France* and other Places as Cinnabar, at leaſt there are only ſome very curious People, who reſolve to have their Mercury pure and neat, who give themſelves the Trouble to revive it. In the *Third* Place, when the *Dutch* have a Mind to make their Quickſilver portable, they fix it very eaſily, and put it into all Sorts of Veſſels, even into Paper, and ſend it to them who have the Secret to make it run again without any Charges.

Quickſilver, call'd in *Latin*, *Hydrargyrus*, *Mercurius*, *Argentum Vivum*, and by the Chymiſts, *Azock*, is a Metal, or half Metal fluid, running, of the Colour of Silver, very weighty, and yet volatile, penetrating, uniting and amalgamating itſelf with Gold and Silver; it is found in ſeveral Mines in *Europe*, as in *Hungary*, and in *Spain*, and there is one Mine diſcover'd about forty Years ſince in *Normandy*. *Lemery.*

As Mercury is a very fluid Body, ſo it is more difficult to be found than other Metals, for it inſinuates itſelf into Earths, and into the Clefts of Stones, ſo that you often loſe the Sight of it when you think you are juſt going to take it up: People are forc'd to go very deep into the Ground to find it, and the Men cannot work very many Years at it before they have the Palſy, ſo that few are employ'd in it but Criminals condemn'd to Puniſhment.

The *Quickſilver* is not always taken out of the Mine neat and running, but it is generally mixt with Earth, or reduc'd into a natural Cinnabar by ſome Portion of Sulphur that it had met withal. That which has but a little Earth with it may be ſeparated by making it paſs through Leather; but when it has a great deal of Earth, or other Impurities, it muſt be put into Iron Retorts plac'd upon a Furnace, to which they fit a Recipient full of Water, and blow the Fire under the Retort 'till it becomes fierce, and makes the Mercury diſtill into the Water. Iron Retorts are the moſt preferable upon this Occaſion, becauſe the Quickſilver endeavouring to get to this Metal, ſeparates itſelf the more willingly from the Earth, and is the more diſpos'd to be rarify'd and puſh'd on by the Fire.

One is not always aſſured of the Purity of the Mercury that is ſold by the Merchant, for

for it may be vitiated by ſome Mixture which was made in the Mine, and could not be ſeparated by the Leather, or by the Addition of Lead, or ſome other Metal or Mineral, that the Sophiſticators may have put into it, 'tis therefore neceſſary to purify it before you uſe it.

The Method of the Ancients to purify their Mercury, and as they ſaid at the ſame Time to correct its cold Quality, which was ſo in the fourth Degree, was by mixing it in a Stone Mortar, with Salt and Sage in Powder, and to beat this Mixture for an Hour together with a wooden Peſtle, and afterwards to ſtrain it through a Skin, by this Means they render'd it clear and beautiful: But they had only taken off a ſuperficial Impurity which was of no Conſequence, which the Quickſilver by rolling about contracted in the Veſſels of Leather or Earth it was kept or tranſported in: If there were any Metal or metalick Matter in the Quickſilver it would paſs with it through the Pores of the Skin, and that could make no Separation of it; and as for the pretended cold Quality of the Mercury, that could not be corrected by this Preparation, and the Metal continued in the ſame Condition as before.

The ſure Means of having Quickſilver as pure as it is poſſible, is to ſeparate it by Cinnabar after the following Manner.

Mix together two equal Parts of Powder of Cinnabar, and Filings of Iron, and fill about a Half, or two Thirds of a Retort with them, place it on a reverberating Furnace, and fit to it a Glaſs Recipient full of Water, without luting the Joynts; encreaſe the Fire to the fourth Degree, you will find the Quickſilver diſtill and fall to the Bottom of the Recipient; keep on the Fire 'till no more will riſe, and you will have got thirteen Ounces of running Mercury from one Pound of Cinnabar; waſh it, and having dried it with Linnen Cloths, ſtrain it through a Leather. We may be ſecure that this Mercury is pure, becauſe if any Portion of Metal or Mineral had been mixt in the Mine with the Quickſilver, of which the Cinnabar was made, it would have remain'd at the Bottom of the Veſſel, and would not have been able to riſe with the Mercury and the Sulphur; and if after the Sublimation any ſtrange Body had been mingled with the Cinnabar, this Impurity of what Nature ſoever would be ſeparated by the Revivification or Diſtillation that I have been ſpeaking of. The Recipient muſt be fill'd with Water, that the Mercury which aſcends in a Vapour from the Retort, may, by the Coldneſs thereof, be condens'd into a Liquor; but the Joyning of the Recipient with the Retort, muſt not be luted, becauſe that in the Diſtillation there always ariſes a great Quantity of Sulphur from the Cinnabar, which would mix itſelf with the Mercury if it could not find a Place to get out at, and would reduce it to a Sort of grey Paſte, ſo that it would be neceſſary to diſtill it a ſecond Time.

The Iron, upon this Occaſion, ſerves as an Alkaly to ſeparate the Acids of the Sulphur, which held the Mercury in the Cinnabar; and this Mercury being diſingag'd from its Bonds, comes into a Condition of being rarified and puſh'd on by the Fire: Quick Lime produces the ſame Effect as the Iron, but then there muſt be thrice the Quantity.

The Fluidity of the Mercury proceeds from this, that the inſenſible Particles, of which it is naturally compos'd, are all ſpherical or round; for their Figure rendring them uncapable of hooking one into the other, they roul about continually. The ſame Reaſon explains, why this Metal, though it be ſo heavy, ſhould eaſily be volatilized by the Fire; for its round Parts being always diſunited, and having no Tye of one to the other, are all ſeverally light, and in a proper Condition to be puſh'd forward, and elevated by the Fire. That which makes the Solidity and Firmneſs of Metal, is when its inſenſible Particles having divers Figures, are ſo hook'd, bound, and exactly united one to the other, that the Fire has no Power to ſeparate them, ſo as to let them be elevated.

Quickſilver is a Remedy for the *Miſerere*, in which the Patient ſwallows a Pound or more, that by its Weight it may in its Paſſage extend the Fibres of the Bowels, which are twiſted in this Deſtemper; it is voided by Stool without any Alteration.

They uſe Crude Mercury to kill the Worms, they boil it in Water, and then give the Patient the Decoction to drink, which

must have taken but a very small Impression let it have boil'd never so long; for the Metal is found to be of the same Weight, and the Decoction has no other Colour, Taste or Smell, than common boiling Water, and yet it does not fail of producing a good Effect: Care must be taken that the Vessel in which the Mercury is boil'd be of Earth or Glass, and not of Metal, because the Quicksilver would penetrate it. Mercury kills Lice and other Insects that infest the Body; it cures the Itch, Tetters, and Venereal Distempers: It resolves and dissipates hard Tumours in the Glands and other Parts: It removes Obstructions, applied outwardly or inwardly; it is us'd in the Composition of several Unguents and Plaisters; it is one of the best Remedies in Physick, to dissipate and eradicate the grossest, most foul, malignant and inveterate Humours.

One of the most surprizing Effects that Mercury produces, is to raise a Salivation, and so to carry off the very *Radix* or Root of the Distemper in all Venereal Foulnesses. To explain this, it must be considered, that the Venereal *Virus* consists in an Humour that is salt or acid, tartarous and gross, which fermenting by Degrees corrupts the Blood and other Humours, and causes all the ill Accidents that follow it.

The Particles of Mercury which enter into the Body, either by Frictions of mercurial Oyntments, or by the Mouth, being rarified, are distributed as a Fume, and apply themselves particularly to the *Virus*, because this acid Matter is more capable of uniting with them than any other Substance: They penetrate the Venom, and are penetrated by its acid Salt, almost in the same Manner as it happens in the Mixture that is made when one would prepare the corrosive Sublimate; the Heat and the Circulation of Humours soon make this Mixture of Mercury and Acid, elevate and sublime itself to the Brain, as the Fire elevates the corrosive Sublimate in a Matrass, upon which the Head, the Gums, the Palate, and the Tongue, are ulcerated; the salivary Vessels are relax'd, and there are the same Pains as if the corrosive Sublimate was put upon some Part that was excoriated: These Accidents are accompanied by a copious and involuntary Salivation, which is maintain'd by the Acrimony of the Humours, that descend from the Brain, and the Relaxation of all the salivary Vessels: This Flux continues 'till all the acrid, virulent, and mercurial Humours are evacuated.

Since there is nothing able to subdue these Venereal Distempers so speedily, safely, and effectually as Mercury, it will be necessary to see the several Ways, by which it may be prepared as well for external as internal Uses.

An Oyntment commonly call'd, the Neapolitan Oyntment, *is prepar'd after the following Manner for external Uses.*

Take of Quicksilver cleans'd and strain'd through Leather, three Ounces; kill it in a Marble or Wooden Mortar, with a sufficient Quantity of the Oil of Turpentine, adding of Hoggs-Lard, six Ounces; beat the Mercury and the Lard well together, until the Quicksilver disappear, and make an Oyntment to raise a Salivation after the following Manner.

First bleed the Patient once or twice, or oftner if you see Occasion for it; then purge him according to the Strength and natural Constitution of his Body, making use of a Bath, half Bath and Broths, alter'd with proper and suitable Herbs, so as to render the Humours more fluid and fitting to rise upon a Salivation, taking Care that the Salivation be rais'd, carried on, and promoted leasurely and gradually; for in this Respect most of our old Surgeons have err'd, and not a few of our late Surgeons do still err, in raising a Salivation too hastily, and to such a Height, that the Mouth Tongue and Tonsils are frequently seiz'd with a Gangrene; wherefore a Salivation ought to be rais'd by degrees, and the Mouth often look'd into, so as that the Signs of an approaching Salivation may be duly and clearly discern'd: Wherefore placing the Patient before a good and clear Fire, being first cover'd with Cloaths suitable to his Distemper; begin the Friction at first with half an Ounce of the *Neapolitan Oyntment*, anointing him from the Soles of his Feet to the Calves of his Legs: Upon the second Night use about two Ounces more of the same Oyntment, in Anointing him from the Calves of his Legs to his Knees: And upon the third Day let him rest, espe-

especially if you perceive the Signs of an approaching Salivation, that is, an extraordinary Heat and Drineſs of the Mouth, a Swelling of the Gums and Salival Glands, attended with a frequent Spitting. Upon the fourth Day, having ſearched the Mouth to try whether the Orifices of the excretory Veſſels be ſeiz'd with an Inflammation, or ſmall Ulcers, another Friction is to be perform'd with two or three Ounces of the Oyntment, anointing from the Knees to the Middle of the Thighs; and upon the fifth Day the Patient is to reſt again, abſtaining from the Uſe of the Oyntment, eſpecially if you obſerve the Ulcers to enlarge, and a laudable Salivation to come on; but this depends upon the Nature of the Diſtemper, and the Strength of the Patient; for ſome require but four Frictions, others more; but nothing is more to be feared and avoided than too high a Salivation: Wherefore, if a fourth Friction be required, it is to be performed with two or three Ounces of the Oyntment, anointing from the Middle of the Thighs to the Loins, Hips, and privy Members; and if a Friction ſhould happen to be required a fifth Time, you are to anoint the Hips and privy Members over-again, extending to the Arms, and all the upper Parts of the Body, except the Head Neck and Breaſt.

If the Tonſils ſhould happen to be ſeiz'd with a Gangrene, by Means of too high a Salivation; then having taken away ſome Quantity of Blood, you muſt inſtantly have Recourſe to Purgation, than which there is nothing more effectual, and it is to be frequently repeated, if neceſſary, and the Cloaths wherewith the Patient was covered, during the Time of Friction, muſt be taken off; ſuch a Salivation is approv'd of, whereby about two or three Pints of a viſcuous or glutinous Humour are diſcharg'd every Day, and which is fully accompliſh'd in the Space of twenty or twenty five Days, or a Month at fartheſt. After the Salivation is over the Patient is to be expos'd to the Air, and refreſh'd and recruited by the Help of a Bath, Broths, and Foods of a good Nouriſhment; or elſe he muſt make uſe of a Diet-Drink made of the ſudorifick Woods and Roots for ſome Time after.

Some raiſe a Salivation by Emplaſtration, making Uſe of the Plaiſter of *Vigo*, otherwiſe call'd the Plaiſter of *Frogs*, with a four-fold Quantity of Mercury; others raiſe it with the Fumes of Cinnabar, and this is call'd Fumigation, which is a very good Way, eſpecially for ſuch as are troubled with Warts, Chaps, and Swellings about the Fundament.

Salivation is alſo rais'd by the Help of Crude Mercury taken in at the Mouth.

Take of Crude Mercury an Ounce, well cleans'd and kill'd with *Venice* Turpentine; of the Conſerve of red Roſes, half an Ounce; of red Coral prepar'd, half an Ounce; of which take from half a Dram to one or two Drams, 'till ſuch Time as a due Salivation riſes.

The moſt common Preparations of Mercury for the Venereal Diſtemper, are theſe which follow: Sweet Mercury, or the white Eagle; the mercurial Panacea, Turbith Mineral, Mercury precipitate, white, red, and green, *&c.* for Mercury, like Proteus, can be chang'd into ſeveral different Shapes, but by the Force of Fire it ſtill returns again to its own Nature, which the Chymiſts call Reviving.

Sweet Mercury is thus prepar'd: Take of Sublimate Corroſive Mercury, and of Crude Mercury, of each what Quantity you pleaſe; mix them well together, and put them in a Glaſs Body, to the Height of one Finger, or two; then ſublime them with a ſlow Fire gradually, and ſeparating the Sublimate from its Dreggs, powder it over again, and ſublime it three or four Times over, mixing it well; and this is call'd *Sweet Mercury*, or the *White Eagle*.

The *Panacea* of Mercury is made by Subliming of Mercury ten or twelve Times over: This *Panacea* will ſooner raiſe a Salivation than Sweet Mercury, which is ſometimes apt to purge downwards; they are both of them preſcrib'd from ten Grains to half a Dram.

Take of Sweet Mercury twelve Grains, powder it, and make it up into a *Bolus*, with a ſufficient Quantity of the Conſerve of Roſes, or the Mucilage of Gum Tragacanth, to be given at Nine a-Clock at Night, giving the next Night fifteen Grains, and the third Night twenty, 'till the Salivation be duly rais'd.

The

The *Panacea* of Mercury is to be us'd after the same Manner, by encreasing the Dose of it gradually, according to what Height you have a Mind to raise the Salivation.

A great many use to prescribe sweet Mercury one Day, and a purging Potion upon the other Day, endeavouring by that Means to cure the Venereal Distemper without Salivation, or else they mix sweet Mercury with Purgatives, and give it in Pills, Bolusses or Opiats.

Take of Sweet Mercury and *Diagrydium*, a Dram; of Lozenges of *Coloquintida*, a Scruple; powder them, and with a convenient Quantity of *Venice* Turpentine, make a Mass of Pills for five Doses.

White precipitate Mercury is thus prepar'd: Take of Mercury well cleans'd and strain'd, four Ounces; dissolve it in a large Matrass, or Cucurbite, with three Ounces of Spirit of Nitre, adding to the Solution, of fair Water, two Pounds; and pour again upon this last Solution of salt Water, two Pounds; and then the Mercury will, by little and little, precipitate or fall to the Bottom in the Form of a white Powder, which is to be sweetned by often washing, drying and burning, or kindling Spirit of Wine upon it. The Dose of the Powder inwardly, is from four Grains to half a Scruple.

But outwardly it cures the Scab, and other cutaneous Distempers, being us'd after the following Manner. Take of white Precipitate, one Dram; of the Oyntment of Roses, an Ounce; mix and make an Oyntment.

Yellow Precipitate, or Turbith Mineral, is thus prepar'd: Take of crude Mercury, four Ounces; pour upon it of Spirit of Vitriol or Sulphur, one Pound; put this Solution into a Retort, with a large Receiver, set it upon a slow Fire, and draw off all the Liquor, until it is dry, and so a white Mass will be obtain'd, which is to be powder'd and dissolv'd in hot boiling Water, and then the Mercury will gradually precipitate in the Form of a yellow Powder, which is to be sweetned by washing and burning upon it Spirit of Wine. This Powder is to be given fron three Grains to four or six. It purges vehemently, both upwards and downwards, but it safely and speedily cures the *French Pox*.

The Coralline Secret, or the Dragon devouring itself, call'd also *Lampandra*, is without any other Addition perform'd in the Space of two Months, by digesting Quicksilver in an Earthen Pot with a long Neck, by the Help of a Lamp; for the Mercury is by that Means chang'd into a bright red Powder, to be given from four Grains to six or eight, provided it be first sweetned by burning Spirit of Wine upon it, otherwise it often provokes Vomiting.

6. *Of the* Mineral *or* Natural Cinnabar, *and likewise of the* Artificial Cinnabar.

THE *Mineral Cinnabar* is a red Stone, heavy and shining, which is found in many Places of the World, but the best and most esteem'd comes from *Spain*. I have taken a great deal of Pains to find the true Name of the Place where *Cinnabar* is found, because a worthy Person has assur'd me, that he himself had seen and gather'd it, and that the best qualified was that of *Andalusia*, upon the Lands of the Fathers of St. *Jerome*, and that it was there as common as Freestone is with us: But Mr. *Charas* has inform'd me, that the great Mines of *Cinnabar* lay in the Mountains of *Sierra Morena*, that the King of *Spain* maintain'd a great many Workmen there at his own Expence and Charges, to get it thence and send it to *Peru*; and as this Relation seems to me to be most probable, I take it for certain, that the large Quantity of *Cinnabar* that we had heretofore, and the small one we have had lately, came from the Mountains of *Sierra Morena*; and that the Cheapness of it, at that Time, sufficiently shows us that it was not difficult or expensive to take it out of the Mines, which may in some Measure favour the Sentiments of that Person, who told me that it was found as commonly as Stones, and that it cost nothing but the Gathering them. *Pomet.*

That *Natural Cinnabar* is to be chosen of a high Colour, the most shining, and with as little Stone as possible; but since the true *Spanish Cinnabar* is become so scarce in *France*, there are so many Sorts of the other, that it is difficult to describe them all, tho' nothing is at present more common than to ask

ask for the right *Spanish Cinnabar*; however they who sell make no Scruple of giving one for the other, and so put off that of St. *Lo*, tho' very different, because that of *Spain* is of a bright red Colour, and that of St. *Lo* of a dull One, and is less abounding in Mercury; and yet some Persons have maintain'd, that that of St. *Lo* would yield fourteen Ounces of Mercury out of the Pound as well as that of *Spain*, which I cannot contradict, because I have never tried it.

The *Mineral Cinnabar* of *Spain*, though much demanded, has no other Property, that I know of, but that skilful Alchymists pretend to make Vermillion of it, and even Gold itself, by fixing it and giving it a Tincture, for in Respect of the Weight it comes very near the true Gold. Mr. *Lemery* says, the *Natural Cinnabar* is a Mixture of Mercury and Sulphur, which are sublimed together by a subterraneous Heat, which is done by Nature almost after the same Manner as they do the *Artificial Cinnabar*.

Mr. *Furetiere* has remark'd in his Book, that there is a *Mineral Cinnabar* which is a very red Stone, heavy, and not hard, resembling the *Hematitis*, which contains Quicksilver which drops from it of itself without the Help of Fire: He says it is found about *Carniola*; and that it is the same Thing as the *Minium* of the Ancients, and is a Poison. He says also the Word *Cinnabar* comes from the *Greek* Word *Kinabra*, which signifies the Smell of Goats, which is an insupportable Smell; because when they dig a Kind of *Fossil Cinnabar* out of the Ground, according to *Matthiolus*, it casts so rank and strange a Smell, that they are forc'd to stop their Nose and Mouth for fear of being suffocated by it. I should not have spoke of this latter *Cinnabar*, but that I look upon it to be a Falsity, and to dissuade them who would believe that there is a *Mineral Cinnabar* from which the Mercury flows naturally.

The *Artificial Cinnabar* in the Stone, is a Mixture of Mercury and Sulphur sublimed and reduced to a Stone, in the Manner we see it.

The Use of *Cinnabar* is as I have said, to draw thence a Mercury, for those who would have it clean and near, as well to make the Mercurial *Panacea*, as for other Operations, where Mercury revived from *Cinnabar* is necessary.

Cinnabar in Stone is also of some small Use to Painters, after it is ground, because it is of a more lively Red than that which comes ready ground from *Holland*; but that which is troublesome in it is, that it is very difficult to dry it: It is likewise of some Use in Physick, as well to make Fumigations, as other Remedies, both inwardly and outwardly; but *Cinnabar* is seldom us'd inwardly but for Horses, to make a Composition, call'd the *Pills* of *Cinnabar*. All the *Cinnabar*, both whole and ground, comes from *Holland*; and it is a surprizing Thing to find, that they who make it do it in Cakes of three or four hundred Weight, which they do easily by putting twenty-four Pounds of the Materials, that is to say of Sulphur and Mercury together; and when they are sublimed by putting twenty-five Pounds more, and continuing it after the same Manner, 'till the Vessel is full, and this is the Reason why the *Cinnabar* we see is dispos'd in several Beds.

As for Vermillion it is *Cinnabar* in Stone, ground with Urine or *Aquavitæ*, and after it is dried transported to different Places.

There are two Sorts of Vermillion brought from *Holland*; the Red and the Pale, which happens according as they are more or less ground; for the more it is ground it is the finer, the paler, and the more esteem'd, especially by them who use it in making Sealing-Wax.

That Vermillion is to be made choice of that is well ground, dry, least earthy, the most pure and clean that may be. It is certain that the *Dutch* when they grind their Vermillion, mix it with some Lead Oar, or some other drying Druggs, because *Cinnabar* in the Stone, when ground, is difficult to dry, whereas it is otherwise in that which comes to us ready ground.

Vermillion is much us'd in *France* by them who make Sealing Wax, Painters, and other Workmen. But Care must be taken not to use *Cinnabar* ground, and mix'd with any fat Substance to paint the Face; because as Mr. *Lemery* has well remark'd, there is a great deal of Danger in it, and ill Accidents may attend it; and therefore the Vermillion of *Spain*, or *Spanish* Wool, may be us'd instead of

of it with Safety, as being made of nothing but the Saffron of the *Levant* or *Safranum*.

They draw from *Cinnabar*, or Vermillion, by the Help of Fire, and the Filings of Steel, or Quicklime put into a Retort, a Quicksilver that is very pure, and proper for all Uses where Quicksilver is requisite; but as it is very dear, because of the Expence, every Body, except they be very curious, make use of that of *Holland*: This Mercury ought to be extreamly white and lively.

Lemery. *Cinnabar* is a Mineral Matter, solid, hard, weighty, bright, Chrystalline, of a very red Colour, distinguish'd with Streaks, shining, and sparkling like Silver, compos'd of a Sulphur and Quicksilver, and a little Earth: That which is impure, and of a yellowish Colour, mix'd with a stony Matter is to be rejected, as not being the true Kind of Cinnabar, but rather a Kind of Auripigmentum, or Orpiment.

There are two Sorts, one natural, call'd *Mineral Cinnabar*, the other artificial, call'd simply *Cinnabar*: The Natural is found form'd in Stones that are red, shining, and weighty, in the Quicksilver Mines of *Spain*, *Hungary*, *Germany*, *France*, and other Parts; that of *Spain* is accounted the best. That which is most weighty, clean, red, and shining, is to be prefer'd, because the higher its Colour, the more Quicksilver it contains. The *Natural Cinnabar* has been sublimed by the subterraneous Fires, almost in the same Manner as the *Artificial Cinnabar*; but as in its Sublimation it is mix'd with the Earth it meets with, it is not so weighty, pure nor beautiful as the Artificial, and contains less Mercury.

The *Artificial Cinnabar* is made with three Parts of crude Mercury, and one Part of Sulphur, mix'd and put into subliming Vessels over a gradual Fire: It ought to be made choice of in fair Stones, very weighty, bright, with long, clear, and fine Points, of a brownish red Colour: Each Pound of *Cinnabar* has fourteen Ounces of Mercury to two Ounces of Sulphur. *Artificial Cinnabar* being ground upon a Porphyry, is reduc'd to the finest Powder, of a most beautiful red Colour, made use of by Painters, and those who make Sealing-Wax.

These *Cinnabars* are made use of in Epilepsies, Asthma's; to take inwardly from two Grains to half a Scruple.

Take of *Native Cinnabar*, six Grains; of the Conserve of Lime-tree Flowers, one Ounce; make a *Bolus* to be given in the Falling Sickness.

It is to be observed, that *Native Cinnabar*, though it hath been us'd and try'd by a great many, will not raise a Salivation; whereas the other Kinds of *Cinnabar* will do it speedily and easily, which truly ought to be attributed to the large Quantity of Earth, with which *Natural Cinnabar* abounds, that restrains it from subliming or rising high enough for that Purpose.

If *Native Cinnabar* be required to be made use of in Distempers of the Brain, the *Cinnabar* of Antimony ought to be employ'd in stead of it, rather than the Factitious or Artificial Cinnabar, for this is more properly us'd in Venereal Distempers, and chiefly by Way of Fumigation.

Some chuse the *Cinnabar* of *Hungary*, as being the most solid and heavy, of a solar Nature, replenish'd with the best Sulphur and Mercury.

Native Cinnabar being ground into an impalpable Powder, is almost an universal Medicine, and may be given from ten to thirty or forty Grains, or a Dram, in any convenient Vehicle, for forty, fifty, or sixty Days together, taking it alway at Bed-time; it may be taken two Days together, and sometimes three, and then the next Day to purge after it, and so to continue 'till thirty, or even fifty, or more Doses are taken.

It is an excellent Antivenereal, and being taken inwardly, expells the Pox and all its Foulness out of the whole Body, and all its Juices; it sweetens the Blood, takes away all Manner of Pains and Aches in any Part; all Manner of Swellings, Ulcers, and nocturnal Pains; kills Worms in Young and Old; is a Specifick for Falling Sickness, as said before; and is excellent for Vertigoes, Apoplexies, Palsies, Lethargies, and all Diseases of the Head and Brain.

The *Artificial Cinnabar* is thus made: Take common Sulphur in Powder, four Ounces; melt it in an earthen Pan upon Coals, add to it a Pound of Quicksilver, stir them continually with an Iron Spatula 'till they are united in a black Powder, and the

the Mercury ceases to appear; being cold, grind it in an Iron Mortar to a subtil Powder; put this Powder into a Glass Retort well luted, and distill with a naked Fire; first with a gentle Heat, then with a stronger; then in a few Hours the Mercury and Sulphur will sublime into the Neck of the Retort, the Whole appearing of a greyish red, or a dark red Colour; beat it into a fine Powder, sublime it again and you have a most pure red Vermillion; it has all the Virtues of the former: But Physitians have not given it inwardly so much as the former, though it be full as safe.

7. *Of the* Corrosive Sublimate, *and other Preparations of* Mercury.

Pomet. THE *Corrosive Sublimate*, which we have from *Holland* and *Venice*, is made of common *Mercury*, or Quicksilver reviv'd from Cinnabar, of Spirit of Nitre, of Vitriol calcin'd to a Whiteness, and of Sea Salt decrepitated, and by the Means of a subliming Vessel, reduc'd to a Lump that is white and shining.

That *Sublimate*, whether from *Holland* or *Venice*, is to be chosen, which is whitest and most shining, but the least weighty and compact that is possible; but that is to be rejected that comes from *Smyrna*, which is weighty, and full of Sparkles, because it is pretended that it is made with Arsenick, which I can't affirm, because I am not certain of it; and the best Way to prove it that I know, is to throw upon it a Drop of Oil of Tartar *per Deliquium*, or to rub it with a little Salt of Tartar; if it grows yellow it is an infallible Mark that it is made of *Mercury*, and has the Qualities requisite to it; on the contrary if it turns black it is to be rejected.

Corrosive Sublimate is made use of by several Persons; as Surgeons, Goldsmiths, Farriers, and others; it is likewise us'd in Physick externally: but as it is one of the strongest Poisons we have, it ought not to be us'd without the greatest Precautions; and the Persons who retail it ought not to sell it but to such as have Occasion for it by their Profession, as the King's Ordinances require, by which it is expressly forbid to sell any Sorts of Poisons, but to the Master of a Family; and these same Retailers are order'd to take a Note of him that buys it, declaring what he intends to do with it; and the Seller is to keep the same Drugg under his own Lock and Key, so that no Body but himself may have the Sale of it. I hope this Advice will not be taken amiss, because it is design'd for the publick Safety.

Of Sweet Sublimate, *or* Mercurius dulcis.

The sweet or dulcified Mercury, or Sublimate, call'd likewise *Aquila alba*, or the White Eagle, is Corrosive Sublimate, and crude Mercury, reduc'd into a white Lump, with little shining Streaks, by the Means of Fire and Glass Matrasses.

The *Sweet Sublimate*, or *dulcified Mercury*, ought to be white, shining, adorn'd with little hard Shoots, which being put to the Tongue is insipid, and reduc'd to Powder, is of a white Colour, a little upon the Yellow. Great Care must be taken that it has been dulcified three Times at least; for unless it has its necessary Qualities, that is, that it be very insipid or without Taste, it may produce very ill Effects. They who bring it from *Holland*, should not so much look upon the beautiful Colour which the *Dutch* give it, as to take heed that it has no Taste: For to my Knowledge there has come some from *Holland* which might have had very ill Effects, if Care had not been taken; because it had been sublimed, or dulcified but once.

The *Sweet Sublimate* is a very excellent Remedy to cure the Secret Disease, and to kill Worms in Children: The ordinary Dose is from two Grains to thirty, taken in a *Bolus*, either of some Conserves, or purgative Medicines.

Of the Mercurial Panacæa.

The *Mercurial Panacæa* is a sweet Sublimate made of Mercury, reviv'd from Cinnabar, and dulcified or sublimated eight Times. I shall not be long upon this Point, because the Directors of the Hospital of the *Invalids* have caus'd a long Tract concerning it to be printed; I shall only say, that this Medicine is very much demanded and valued, as well for its Novelty, as because they pretend it is a general Medicine for the Cure of the above-mention'd Diseases, and they attribute so many Qualities to it, that they have

have given it the Name of *Panacæa*, which is as much as to say, the Universal Medicine: They commonly make up this *Panacæa* into little Pills, with the Mucilage of *Gum Tragacanth*, and when they are dry they differ little in Colour or Size from the Coriander Comfit.

Of the White Precipitate.

The *White Precipitate* is a Quicksilver dissolv'd in the Spirit of Nitre, and precipitated by Salt into white Powder. This Powder, after having been well wash'd and dried, is what we call the true *White Precipitate* of Mercury, to distinguish it from other Sorts of *White Precipitate*, of which one is made of Corrosive Sublimate, dissolv'd in a Water made of Sal Armoniack, and reduc'd into a white Powder, by casting the Oil of *Tartar per Deliquium* upon the Dissolution, and afterwards washing and drying it as that above-mentioned. The Third is made likewise of the Corrosive Sublimate reduc'd to Powder and put into warm Water; and when the volatile Spirit of Sal Armoniack has been cast upon it, there will remain a white Powder, which after having been wash'd and dried, has the same Properties as the two others, which is to raise a Salivation, or mix'd with Oyntments or Pomatums to cure Tetters and cutaneous Distempers.

As these *Precipitates*, and generally all Preparations of Mercury are violent Remedies, in which one may run some Hazard; so they ought not to be us'd but with great Precautions, and the Advice of understanding Persons. The *White Precipitate* of Mercury shows itself to be in a good Condition when it is white and weighty, and if it exhales, being put upon a burning Coal; on the contrary if it remains upon the Fire, or runs into Lead, it is an infallible Sign that it is nothing but white Lead ground, or some other white Powder, as that of *Roan*, or the like.

The *Precipitate*, made with *Sublimate*, should be extreamly white, and much lighter than that which is made of crude Mercury, which may seem strange, because every Thing made of Mercury is generally weighty, and this is the Reason why they that do not know it will not take it, although it is as beautiful and as good as that which is made of crude Mercury.

Of Red Precipitate.

The *Red Precipitate* is Mercury dissolv'd in Spirit of Nitre, and afterwards heated by the Fire 'till it has got a shining red Colour, such as that which comes from *Holland*: As for those *red Precipitates* which are made by the Artists in *Paris* and other Parts of *France*, they have as many different Colours as there are People that make 'em, and there are few of them can come up to that of *Holland*. 'Tis this which makes the greatest Part of the *Red Precipitates* which are sold to be sometimes red, and sometimes of an orange or some other Colour, and never shining, unless it were that which comes from *Holland*; however I will not say, but it may be as good though it be not as saleable. There are likewise two other Sorts of *Red Precipitate*, one of a Rose Colour, which is made when instead of putting the Dissolution of Mercury in the Spirit of Nitre upon the Fire, they pour upon it hot Urine, and there will soon be a Precipitate of a Rose Colour, which being wash'd is good for the Worms or the Itch, and may serve for the same Uses as the *Red Precipitate* made by Fire. The third *Red Precipitate* is made of Sublimate dissolv'd in warm Water, upon which they pour the Oil of *Tartar per Deliquium*. Mr. *Lemery* says, that this Preparation of Sublimate is the true *Red Precipitate*, but that it does not act so violently as that of Mercury. These two last Precipitates are very seldom us'd, because the first is most in Vogue, which ought to be faithfully prepar'd that it may be good; and Care must be taken that it be not mix'd with Lead Oar, which may easily be known by rubbing it upon a Piece of Gold, for if it makes it white, it is a Sign that it is good, and that it is made of Mercury; but if it makes it black it is a Proof that it retains a Tincture of Lead, and that it is mix'd with it: You may likewise put it upon the Fire, and it is a good Sign if it exhales; however I must say, that That which comes from *Holland* is most preferable, as well because it is more beautiful, and consequently more saleable; as because we can sell it cheaper, especially in Time of Peace, than any that can be made in *France*.

Of

Of the Coralline Secret.

They call the *Coralline Secret* a Red Precipitate of Mercury, upon which they have burnt a good Spirit of Wine, repeating it six Times; and this *Coralline Secret* is made use of internally, because the Spirit of Wine has sweetned it, and taken away whatever might be dangerous in it.

Of Yellow Precipitate.

The *Yellow Precipitate*, or *Turbith Mineral*, is Mercury reviv'd from Cinnabar dissolv'd in the Oil of Vitriol, and afterwards with lukewarm Water precipitated to a yellow Powder, which being wash'd and dried is us'd as a strong Purgative and Emetick. They likewise make a *Yellow Precipitate*, by dissolving powder'd Sublimate in warm Water, and pouring Lime-Water upon it, and the yellow Powder, which will be found at the Bottom, after being wash'd and dry'd, may pass for *Yellow Precipitate*, or *Turbith Mineral*. Mr. *Lemery* says, this Dissolution or yellow Water, is call'd Phagedenick Water, or Water for Ulcers, because it is proper to cleanse and heal Ulcers. The Surgeons make frequent Use of it in the Hospitals; but the common Phagedenick Water is Lime-Water, into which they have put a little Sublimate.

Of Green Precipitate.

The *Green Precipitate* is Mercury and Copper dissolv'd in Spirit of Nitre, and afterwards with distill'd Vinegar, thrown down into a Powder of a green Colour, which is made use of to purge upwards and downwards; and as some pretend, it is a Specifick to cure Venereal Distempers. They who prepare these *Precipitates* find a yellow Powder that is very like the *Turbith Mineral*.

It is observable, that the more Copper is us'd in this Operation the more Acrity it has, and greater will be its Effect. This Precipitation is very little made use of, and was very little known, before the *Sieur Matte de la Faveur*, the King's Distiller at *Montpellier*, gave us a Description of it.

Of the Oil *of* Mercury.

The *Oil*, or to speak more properly, the Liquor of *Mercury*, is Quicksilver dissolv'd in the *Oil* of *Vitriol*, and reduc'd into a white Mass by the Means of Fire, which being put in a Cellar will dissolve and be reduc'd to Water. One may make another *Oil* of *Mercury* that is sweeter, by dissolving Quicksilver in the Spirit of Wine, and this may be us'd with the greater Safety: You may likewise make it with Sweet Sublimate, and Sal Armoniack; or instead of Sal Armoniack you may use Salt of Saturn, or in the Room of Salt of Saturn of Sugar-Candy; and so of several other Sorts enumerated by several Authors.

8. *Of* Tin.

TIN, which the Ancients call'd *White Lead*, is a white Metal which is not so hard as Silver, and yet harder than Lead. Some have given *Tin* the Name of *Jupiter*, because they pretend it draws Influences from that false Divinity. They pretend likewise that it is form'd of two Matters, that is, Silver and Lead, because in the *Tin* Mines there is sometimes form'd both Lead and Silver, and sometimes Diamonds, which are fix'd to the Rock from whence they take their *Tin*; these are naturally polish'd, squar'd and pointed, and are of different Sizes, some as big as a Nut, but they are not so hard, nor will they cut like true Diamonds. They say likewise that it is compos'd of Earth and an impure Sulphur, a Metallick Salt, and a Mercury a little finer and better digested than that of Lead, and that it is an Enemy to Gold and Silver, and when they are once mix'd it is difficult to part them.

The greatest Part of the *Tin* which we have in *France* comes to us from *England* in Pigs of different Weight, and especially from the County of *Cornwall*: The *Britannick* Islands abounded so much with that Metal, that the Ancients gave them the Name of *Tin Islands*.

There are three Sorts of *Tin* at *Paris*; the Hammer'd *Tin*, the Sounding *Tin*, and the Common *Tin*: The Hammer'd *Tin*, which is the most beautiful and the best Sort, is the *English Tin* as it comes from the Mine, and in Working they incorporate it with Tinglass, Copper, and a little Zink to purify it. Sounding *Tin* is *English Tin* mixt with the more Common *Tin*, and is also made with Tinglass and Copper, which is the Cause, as Mr. *Lemery* has very well observ'd, that these

Matters which are compos'd of ſtiff and brittle Parts, being united with the *Tin*, make its Parts firm, and render the Metal more hard, ſolid, and compact, and ſo it becomes ſounding or ringing; for it is neceſſary that all ſounding Matter ſhould be compos'd of ſtiff Parts ſo diſpos'd, that being ſtruck upon they ſhould be agitated and tremble, by Hitting one againſt the other, which cannot be done by *Tin* alone, becauſe it is ſoft and pliant. The Common *Tin* is *Engliſh Tin* and *Lead*, with *Braſs* that is incorporated with it.

To know the Degrees of Goodneſs in *Tin*, they take a white Chalk that is found near *Tonnerre* in *Burgundy*, and of this Chalk they make a Sort of Mould into which they pour the *Tin* when melted; and by Means of this Chalk the Artiſts know what Standard it is of, by the little Lines or Furrows found in it; or elſe they caſt *Tin* Bullets in Moulds, and that which is found lighteſt is eſteem'd the beſt. Some Authors ſay, that Tin or white Lead is found upon the Surface of the Earth, amongſt the Sands, and in Torrents dried up; and that it is found in Grains, which being waſh'd is caſt into Moulds, in the Shape we ſee them. Beſides the different Uſes we make of *Tin*, the Chymiſts perform ſeveral Operations with it, as ſhall be ſhown hereafter.

Beſides the *Engliſh Tin*, there is ſome that comes from *Germany*, but it is not ſo good, becauſe it is only the Refuſe of that which ſerv'd to Tin their white Iron. We have alſo ſome brought from *Lorrain*.

Of Tin *in* Leaves.

Tin in *Leaves*, call'd by the *French*, *Appeau*, is an hammer'd *Tin*, which the *Dutch* have painted on one Side by their Varniſh, making it of what Colour they pleaſe; as yellow, red, black, sky-colour, *&c.* The *Tin* in *Leaves* ought to be uniform, well varniſh'd, whole, and as evenly roul'd as it can poſſibly. The *Dutch* ſend it in Boxes which hold commonly a Groſſe, that is twelve Dozen.

Of Tin *in* Powder.

They reduce *Tin* into *Powder* two Ways, either with beaten Charcoal, or with Chalk, as ſhall be afterwards ſhown in the Chapter of *Lead*. They who work upon *Tin*, inſtead of grinding it to Powder, burn it, that is, calcine it, and reduce it to a grey Powder, which is that which we and the Pewterers ſell under the Name of *Putty* of *Tin*, and uſe it to burniſh their Hammers with, and others to poliſh their Steel Mirrors. They who would make this *Putty* extreamly white, calcine it 'till it becomes of a moſt beautiful white Colour. This *Tin* calcin'd to ſuch a Whiteneſs, is what the Chymiſts call the *Ceruſe* or *Calx* of *Tin*, and others the *Spaniſh White*, or the *Jovial Bezoar*.

Some Authors affirm that *Tin* may be reduced into a *Calx* or *Ceruſe* by the Help of Urine, and that the Urine acts upon Tin, as Vinegar upon Lead. Beſides the Uſes that the Chymiſts have for this calcin'd *Tin*, it is much us'd by the Potters, who make of it their beautiful Varniſh, or white Enamel that is upon their Earthen Ware: But it is obſervable, that this Ceruſe of Tin, before it can be us'd by the Potters, muſt be expos'd to the Weather for a Twelvemonth, that ſo the Air may make a ſecond Calcination; but Care muſt be taken that this white *Tin* have no Impurities amongſt it, becauſe they would make ſo many Spots upon the Works.

Of Salt *of* Tin.

The *Salt* of *Tin* is *Tin* calcin'd, upon which they have pour'd diſtill'd Vinegar; and by Means of Fire, and a cool Place, they draw thence a white *Salt* in little Chryſtals, which they uſe for Tetters mixt with ſome *Pomatum*; it ought to be dry, white, light, and in little Shoots.

Of Flowers *of* Tin *or of* Jupiter.

They draw from *Tin* and Sal Armoniack, by the Help of a ſubliming Veſſel, White *Flowers* of *Tin*. Inſtead of Sal Armoniack others uſe Salt Peter refin'd. They can make of the *Flowers* of *Tin*, by Means of the volatile Spirit of Sal Armoniack, or Oil of *Tartar per Deliquium*, a Magiſtery of *Tin*, which being dulcified, waſh'd in Water, and dried, is of a very fine White; ſo that being mixt with *Pomatum*, it is us'd for Paint: The

The *Flowers* of *Tin* are often put to the ſame Uſes as the Magiſtery.

Of the Diaphoretick *of* Tin.

The *Diaphoretick Tin*, which Mr. *Lemery* calls the *Jovial Diaphoretick*, or the *Antihectick* of *Poterius*, is made of fine *Engliſh Tin*, and the *Regulus* of *Antimony*, with Iron melted together, and afterwards, with Saltpeter and divers Lotions, they draw thence a Powder which is uſed for Diſeaſes of the Liver, the Small Pox, and malignant Fevers, as the ſame Author tells us.

Of Natural Tin-glaſs.

Whatever Pains I have taken to diſcover if there were any true *Natural Tin-glaſs*, it was impoſſible for me to find it; and all thoſe with whom I have convers'd, either by Word of Mouth, or Letter, they have all agreed there was no other *Tin-glaſs* than that we ſell, which is an artificial One, as I ſhall ſhow preſently: However, I ſhall not be poſitive that it cannot be found but that it has not come to my Knowledge, and therefore I cannot contradict them who have written, that *Tin-glaſs* was a ſulphureous Marcaſite which is found in the Tin Mines, or that it is a Mineral Body, or half Metal, compos'd of the firſt Matter of Tin, which is yet imperfect; and that it is found in the Tin Mines, and has a Subſtance that is very hard, weighty, brittle, and of a groſs Grain, ſmooth, white and ſhining. They ſay likewiſe that it is call'd *Tin-glaſs*, becauſe when it is beat to Power, there appear in it ſeveral little Subſtances ſmooth as Glaſs. They call it alſo *Marcaſite*, by Way of Excellence, becauſe it ſurpaſſes all the others in Whiteneſs and Beauty; they ſay it contains an Arſenical Salt, which is dangerous to be taken inwardly.

Of the ordinary Tin-glaſs.

The *Tin-glaſs*, which ſome call *Biſmuth*, is a Mixture of Tin, Tartar, and Saltpeter, from whence, by the Means of Fire, and a Crucible, they draw a *Tin-Glaſs* very white and pure, and much whiter than the *Tin-glaſs* that is brought from *England*: And this Difference, as I have been told, proceeds from this, that the *Engliſh* mix a little Copper with it to give it the reddiſh Caſt which it has.

Tin-glaſs may not improperly be call'd the *Regulus* of *Tin*, ſince it is ſo in Effect: And it is a Thing ſo probable, nay, ſo ſure, that the *Tin-glaſs* we ſell is artificial, that the very Figure demonſtrates it; for it is eaſie to ſee that it is a Metal melted and caſt in a Mortar, warm'd and greas'd, as they do to other Sorts of *Regulus*; and it is ſo true, that *Tin-glaſs* is artificial, that I have made it myſelf, and am ready to ſhow it to thoſe who won't believe me.

Tin-glaſs ſhould be made Choice of, that is in fine Scales, white, and eaſie to break, and that is to be rejected which is in little Scales, and in a Word, comes near the Figure of *Regulus* of *Antimony*, as well as that, which being broke in two, has ſome greater and ſome leſſer Scales, and is of a dark Colour.

The Uſe of *Tin-glaſs* is for Pewterers, who at preſent make uſe of it inſtead of *Regulus* of *Antimony*, or elſe for the Chymiſts, who from thence draw Flowers, or a Magiſtery, or white Precipitate.

To draw the Flowers of *Tin-glaſs* they calcine it, and with Sal Armoniack, and a ſubliming Veſſel, draw thence the Flowers, which when diſſolv'd in Water, and precipitated with the Spirit of Sal Armoniack, or Oil of Tartar, may be us'd as the Magiſtery of *Biſmuth* that I am going to ſpeak of.

Of the Magiſtery *of Common* Biſmuth.

The *Magiſtery* of *Biſmuth*, which ſome improperly call the *Spaniſh* or Pearl White, is Tin-glaſs diſſolv'd in Spirit of Nitre, and precipitated into a white Powder, with a little common Salt, and afterwards well waſh'd and dry'd. There are Peruke-Makers that uſe this *Magiſtery*, though prepoſterouſly, for the making red Hair look of a light Colour; but this Trick will be eaſily diſcover'd, becauſe the Colour will not remain long, eſpecially if the Peruke comes into the Rain.

The *Magiſtery* of *Biſmuth* is ſometimes us'd for the Face, by putting it into Pomatums, or diluted with Lilly or Bean-Flower Water.

Water. It is good for the Itch, because, according to Mr. *Lemery*, it destroys the Acids or Salts that nourish that Distemper: One must take Care not to be over-stockt with this *Magistery*, because its Colour will from white become yellowish as it grows old, and so become unfit for Sale.

This *Magistery* should be bought of honest Persons, for there are a great many Cheats in it, and there is no Body can answer for it but he that made it, and therefore you must not stand upon the Price.

Lemery. *Bismuth* is a metallick Matter, but it is hard, brittle, shining within, dispos'd into smooth Shoots, bright and shining as little Pieces of Glass. This Matter is drawn from the gross and impure Tin that is found in the Mines of *England*. The Workmen mix this Tin with equal Parts of Tartar and Saltpeter; this Mixture they throw by Degrees into Crucibles made red hot in a large Fire: Afterwards, when the Matter is melted, they pour it into Iron Mortars that are greas'd, and there let it stand to cool; then they separate the *Regulus* that is at the Bottom from the Scoria, and wash it well: It is the *Tin-glass* that one may properly call the *Regulus* of *Tin*. Some People say, that in the Tin, of which they make *Bismuth*, there is always a little Mixture of Arsenick. We can make *Bismuth* in *France* with ordinary Tin, Saltpeter and Tartar, as I have said, but it will be brighter than that of *England*, because the Tin we use is purer than that they use in *England*.

This Operation is the same as that of Regulus of Antimony, there is the same Detonation and Purification of the gross Sulphur contain'd in the Metal, the looser Parts of the Sulphur, are elevated with the volatile Parts of the Saltpeter and the Oil of Tartar by the Detonation; afterwards the fix'd Salts of the Saltpeter and the Tartar, which are become Alcalies, dissolve the other Part of the Sulphur which renders the Tin hard and brittle, whereas before it was pliant and malleable; for this Sulphur made the Ductility, and the exact Tyes between all the Parts of the Metal: It may likewise happen, that some small Portion of the Salts of Tartar and Saltpeter may penetrate this Regulus of Tin, and so contribute to the making of it brittle.

Bismuth is brought to us in round or orbicular Lumps, flat below, and round above, and of the same Figure with those of Regulus of Antimony, which was cast in a Mortar whilst it was in Fusion.

Tin-glass is to be made Choice of in fine large Pieces, shining, whose Shoots are large, white, and sparkling; the Pewterers mix it with their Tin, to render it more beautiful and sounding.

It is resolutive and drying, being beat to Powder, and made up either into an Oyntment, or a Plaister.

Tin is a Metal soft, malleable, sulphureous, white, shining, a little harder than Lead, very easie to be melted; the Ancients call'd it *Plumbum Album* White Lead; it is taken out of the Mines of *England*, and other Places, and brought to us in Pigs. At *Paris* we have three Sorts of it.

The *First* is that Tin which is without Mixture as it comes from the Mine, and this is the true Tin. The *Second* is the common Tin, which is an Allay of the Natural Tin of Lead and Brass. The *Third* is the sounding Tin or Pewter, which is a Mixture of Tin, Bismuth, and Copper, and a little Zink; they sometimes put in some Regulus of Antimony, and its sulphureous vomitive Salt is not to be fear'd upon this Occasion, because it is absorb'd and mortified by the great Quantity of other Metals with which it is incorporated.

Natural Tin is not sounding, because it is too soft and pliant; for to render any Matter sounding, it is requisite that it be compos'd of firm stiff Parts, which being struck may tremble and hit one against the other, which Quality is found in the Tin which is hardned and made solid by Bismuth, or by Antimony and Copper. This Tin, when fine and well compos'd, is very much like Silver.

Natural Tin is look'd upon as proper for Diseases of the Liver and the Womb, but I have found but little of this Virtue in my Experience of it.

Zinck, which has been mention'd above, is a Sort of Marcasite, or a metallick Matter, resembling Bismuth, but less brittle, and in some Measure pliable to the Hammer; it grows in the Mines, and principally in those of *Gosselar* in *Saxony*. That is best which is hard, difficult to break, white, with Shoots that are large and shining. It is us'd to cleanse

cleanse and whiten the Tin, as they make use of Lead to purify Gold and Silver. The Workmen mix in their Casting about six hundred Pounds of Tin, with one Pound of this Mineral.

Zinck is made use of in Solder; they likewise mix it with Copper to give it the Colour of Gold.

Zinck is resolutive and drying, being apply'd outwardly.

9. *Of* Enamels.

Pomet. *Enamels* are Vitrifications made of Tin, Sand and Pot-Ashes of *Alicant*, to which they give diverse Colours, with different Metals, as shall be shown hereafter.

The *Enamels* come from *Venice* and *Holland*, and are in little flat Cakes of different Sizes, and different Marks; some have the Name of *Jesus*, some have the Figure of a Sun, and the like, from the different Workmen that made 'em.

The first is the *White Enamel*, which is the Basis of all the others, and is made of Tin calcin'd, or Putty, of Sand and Pot-Ashes, which having underwent a great Fire are reduc'd to a Paste, and being cool'd become hard as a Stone; it is this white Enamel which they use at present for varnishing their Earthen Ware, rather than Tin calcin'd and expos'd to the Air and weather for a Year together, that Operation being too long. *White Enamel* is us'd by the Enamellers, Goldsmiths, and others: As for the Choice of it, there are none but they that use it that can know the Beauty and Goodness of it; the Whiteness is more or less according to the Goodness of the Tin it is made of.

The second *Enamel* is of a Gridelin approaching to a Slate Colour, which is white Enamel colour'd with Azur.

The Third is of a Sky Colour, which is a white Enamel colour'd with Copper and Cyprus Vitriol.

The Fourth is of a Flesh Colour, which is white Enamel colour'd with Perigueur.

The Fifth is the Yellow which is the White colour'd with Rust of Iron.

The Sixth is Green, which is White colour'd with Pin Dust, or other Filings of Brass.

The Seventh is the Blue, which the Enamellers call the *Faux-lapis*, the false Stone; which is the Sky-colour'd Enamel, colour'd with *Lapis Lazuli*. These Enamels will take different Colours, that is, many Colours are made of one, by putting in more or less of the Metals, or Druggs, before-mention'd.

Enamel is call'd *Encaustum*, from a *Greek* Word, signifying Burning, because Enamel is made by a great Fire: But the *Encaustum*, or *Enamel* of the Antients, was quite another Thing from that which we now use, and is suppos'd to be wholly lost. It is a Work almost of the same Nature with making artificial Gems, and a Mixture of the same Colours with this Difference, that in Gems the Mass is transparent, according to the Nature of the Gem, but in this it is opacous and solid, it being Tin, which gives it such a Body and Solidity. The Ancients made their checquer'd or mosaick Work of it; and Goldsmiths now use it in Colouring and Enamelling of Gold.

Lemery.

As for Enamelling, these Things must be generally observ'd; That the Pots in which the Enamel is made be glaz'd with white Glass, and able to endure the Fire: That the Mass and Colours for the Enamel be well mix'd and incorporated: That the Enamel, when well mixt, refin'd, and of a good Colour, be taken out of the Fire with a Pair of Goldsmiths Tongs: That Care be taken that no Dirt or Ashes fall in or mix with it.

The Way of making Enamel is this: Powder, grind, and searce well the Colours, and mix them well first with one another, and then with the Matter for the Enamel, then set them in Pots in the Furnace; when they are all melted and incorporated, cast them into Water, and when dry'd set them into the Furnace again to melt, which they will soon do, and then make Proof; and if the Colour be too high add more of the Matter for Enamel; if too light, add more of the Colour 'till it is exact, then take it out of the Furnace.

The common Matter for all Enamels is thus made: Take fine Lead, thirty Pounds; fine Tin, thirty three Pounds; calcine them together in a Furnace and searce them; boil this Calx a little in fair Water in an Earthen Vessel; take it off the Fire and decant off the

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-148394-p0167-4 DFG

the Water, which will carry off with it the finer Part of the Calx; put fresh Water to the Remainder, and boil and decant it as before; repeat this as often as the Water carries off any Calx; re-calcine the gross remaining Calx, and then draw off again the more subtile Parts as before: Then evaporate these Waters which carried off the Calx at a gentle Fire, that the Calx may not be wasted, which will remain at the Bottom much finer than ordinary. Take of this fine Calx, Chrystal Frit made of Tarso, which is a hard and most white Marble, ground and searsed fine, of each six Pounds four Ounces; of pure white Salt of Tartar, one Ounce; searce and mix them well: Put this Mixture into a new Earthen Pot, giving it a Fire for ten Hours, then powder it and keep it in a clean dry Place; of this Mixture all Enamels whatsoever are made.

Altho' these Enamels are not made use of in Medicine, yet they have their Virtues, according to the Qualities of the several Druggs they are compos'd of; but they must be very well ground upon a Marble, if you would have them produce any Effect.

The White, the Blue, and the Yellow Enamel, are purely Deficcatives, but the others are Detersives and Deficcatives.

10. *Of* Copper.

Pomet. *Copper* is a Metal found in several Parts of *Europe*, but principally in *Sweden* and *Denmark*, from whence we have almost all that we sell. *Copper* is taken out of the Mine in Sand, and in a Stone, almost like that of Iron; and after it is wash'd and purified from the Earth mixt with it, it is cast into Moulds of different Figures: To render it true red *Copper*, they melt it a second Time, and when it is well refin'd they cast it into Moulds of Sand, where it falls into Cakes or Plates that are not smooth, as we see them. When they would make this *Copper* malleable they melt it a third Time, and afterwards form it into Cakes of three Inches thick, and about fifteen Inches Diameter. Of these Cakes put whole or in Quarters into the Fire, they make Plates, and of these Plates they make Cauldrons by the Means of Hammers that work by a Water-Mill, and the Plates are form'd into the Vessels by one that turns these Plates, with his Legs cover'd with Sheeps Skins, whereby he reduces them into what Shapes he pleases, with very little Use of his Hands.

Copper is a Metal very hard and dry before it is melted; and when it has been often melted it becomes ductile, and almost as malleable as Gold or Silver. Some call *Copper*, *Venus*, because that Planet is suppos'd to shed its Influences upon this Metal. From *Copper* the Chymists draw several Things very proper for divers Uses, as shall be shewn hereafter.

Æs, sive Cuprum, sive Venus, that is, *Copper*, is a beautiful Metal, shining of a reddish Colour, easie to rust, abounding in Vitriol. It is found in several Places of *Europe*, but principally in *Sweden* and *Denmark*; it is taken from the Mine in Lumps, which are superficially wash'd to cleanse it from the Earth that is mix'd with it, and afterwards melted with vehement Fires. 'Tis to be observ'd, this Metal is very difficult to be melted: They purify it from its Scoria and cast it into Moulds. When the same Copper has been twice or thrice melted it becomes more pure and ductile, and you have a red Copper more beautiful than the common. *Lemery.*

Copper is a Metal of good Use in Physick, and is said to strengthen the generative Parts in Men and Women, but us'd Crude in the Stomach in Filings, or the like, it is little better than Poison, being hot to the last Degree, and of a caustick Nature, causing Pain in the Stomach and Belly, Vomiting, Fluxes, Ulcers, and Difficulty of Breathing, and if it be calcin'd it is yet worse. The Cure, if any one be hurt with it, is by warm Water mix'd with Oil, Oil alone and Butter, Hogs Lard melted and drank; and if it be got into the Guts, by Clysters of the like Kind, Salt and Oil of Tartar and other Alcalies; Juice of Mints, and such other Remedies as are us'd against Arsenick.

Thin Plates of Copper infus'd all Night in Lime-Water only, or in Lime-Water mix'd with Volatile Salt, or Spirit of Sal Armoniack, make an admirable *Collyrium* for the Eyes to wash with against Mists, Clouds, Films, Pearls, Suffusions, *&c.*

Copper is made or generated of a purple Sulphur, a red Salt, and a Citrine Mercury.

11. *Of*

11. *Of* Yellow Copper *or* Brass.

YEllow *Copper* is old *Copper* melted and made yellow by Means of the true *Calaminaris* Stone; the greatest Part of the *Yellow Copper* is made in *Germany* and *Flanders*. They beat this *Copper* and reduce it to the Thinness of Paper, and this is what we call Tinsel. They beat this Tinsel over again, and make it extreamly thin, and afterwards put it into little Books of Paper and call it *German Gold*. They grind this *German Gold* to Powder to make Brass for the Painters, which has more or less Colour, according to the several Times that it has pass'd the Fire; they grind this Brass over and over again, 'till it becomes an impalpable Powder, which they sell under the Name of *German Gold* in Powder: Others put this Powder Gold into Muscle Shells, and call it *Shell Gold*. That *Shell Gold* is most esteem'd that comes from *Ausburg* in *Germany*, and from thence has the Name of *Augusta*. As to the Choice of the *German Gold*, either in the Leaf, the Powder, or the Shell, that which is finest and highest in Colour is esteem'd the best. The *German Gold* is us'd by Painters, especially such as paint in Miniature. The Painters Brass is likewise us'd by them to make their Figures of Plaister, have a Brass or Copper Colour, and for other Uses.

Besides the different Preparations that are made of this *Yellow Copper*, the *Venetians*, as I am assur'd, make of it that which the *French* call Purpurine, which heretofore was made use of upon Coaches. By Means of this *Yellow Copper*, and the Help of Fire, they make that Sort of Vitrification which the Enamellers call *Avanturine*; and they pretend the Name was given it because this Operation was found without being thought of, and was made by some Dust of *Yellow Copper* which fell into a Furnace where Glass was melting. *Avanturine* is all embellish'd with Streaks of Gold. There is an *Avanturine* that is found naturally in several Places of *France*.

Aurichalcum, *Yellow Copper*, or *Lemery*. *Leton*, is a Mixture of Copper and *Calaminaris* Stone melted together by a very vehement Fire in Furnaces made on Purpose: The Discovery was made by the Alchymists, who endeavouring to turn Copper into Gold, found how to give it a yellow Colour; the greatest Part comes from *Flanders* and *Germany*. The *Calaminaris* Stone embarresses and extends the acrid Salts of the Metal to that Degree, that Brass does not make the same Impression on Liquors as the red Copper. Besides, as the *Calaminaris* Stone costs but little, so the *Yellow Copper* is cheaper than the Natural.

That which we call Tinsel is *Yellow Copper* beat to a Leaf as thin as Paper, and is us'd by the Lace-Men.

German Gold is Tinsel beat very thin, and kept in little Paper Books for the Use of Painters.

The Painters Brass is the *German Gold* ground to Powder, which is put into little Shells, and call'd *Shell Gold*: It is us'd to colour Figures made in Plaister, and by them who paint in Miniature.

The common Brass, which the Workmen call *Metal*, is an Allay of Copper with Leton, or with Tin; they make divers Sorts, which only differ according to the Quantity of Tin that is mixt with the *Copper*; the Mixture is from twelve Pounds to five and twenty Pounds, to the hundred Weight of *Copper*.

They use Brass for Clocks, Mortars, and several other Works; the best is that which gives the clearest Sound when you strike it.

12. *Of* Pompholyx.

THE *Pompholyx*, call'd *White Calamine*, *Nil*, *Nihil*, *Nihili Pomet. Album*, or Flowers of Brass, and improperly Ashes of Brass, is that which sticks to the Cover of the Crucible, and the Pincers of the Founders when they melt *Yellow Copper*; and it is certain that nothing but *Yellow Copper* gives the true Calamine, and not the cast Copper, nor the Metal, nor the brittle Brass, as the greatest Part of the Authors have written.

Although this *Pompholyx* be easie to be come at, yet there are not many Druggs more unknown, which proceeds from the Negligence or Ignorance of the Apothecaries, because they take Tutty and the *Pompholyx*

pholyx to be the same Thing, and therefore they use the Tutty instead of it.

The best Calamine comes from *Holland*, not that it is in Reality better in Substance than any other, but better collected and preserv'd. That *Pompholyx* ought to be chosen which is very white, light, friable, clean, it matters not whether *French* or *Dutch* so it be very white.

They who cast Bells may gather a little of it, but because it is not very good it is not worth While to look after it.

The Founder that I have seen who made Calamine, said, he never sold any but to some particular Persons who came for a Dram Weight to take in Fevers, and assur'd me that it was a certain Remedy, and cured all Sorts of Fevers, which is a Thing I have never tried; but I should advise any Person not to use it but with great Precautions, because it is a very violent Remedy.

Lemery. The *Pompholyx*, call'd in *Latin*, *Nil*, *Nihili album*, *Capnites*, *Bulla cadmica*, *Calamites* is a Flower of Brass, white and light, which is found sticking to the Cover of the Crucible in which they melt Copper with the *Lapis Calaminaris* to make yellow Copper or Letton; it is likewise sticking upon the Founders Tongs: But either through Negligence in Collecting this Drugg, or because the Workmen let it fall in the Fire when they uncover the Crucibles, we rarely find it amongst the Druggists, and are therefore oblig'd to substitute Tutty in the Room of it.

The *Pompholyx* should be light, very white and crumbling; it is detersive, desiccative, proper for Wounds; it is not much us'd, but externally for Oyntments. Some give from half a Scruple to two Scruples in Intermitting Fevers; it excites Vomiting very violently.

13. *Of the* Æs Ustum.

Pomet. THE *Æs ustum*, or burnt Copper, is made of red Copper cut into little Plates, and put into a Crucible with Sulphur, and a little common Salt, *Stratum super Stratum*, and put into a great Charcoal Fire; and when the Sulphur is burnt away, and the Copper taken out of it, is of an Iron Colour without, and of a reddish one within, being shining and very brittle.

The *Æs ustum*, if it be in a good Condition, should be moderately thick, and of the Colour before-mentioned; and being rub'd one upon another should make a Red like that of Cinnabar, which the *Æs ustum* or burnt Copper cannot do, unless some Salt be put to it, which is the Secret of the *Hollanders*, whereby they make it better than they do in *France*.

The *Æs ustum* is of some small Use in Physick, because it is detersive; but they who make use of it make it red hot in the Fire nine Times, and quench it as often in Linseed Oil, and reducing it to Powder, use it for eating of dead Flesh, and they call this Powder of the *Æs ustum* so prepar'd, Crocus, or Saffron of Copper.

14. *Of* Verdigrise.

THE natural *Verdigrise* is a greenish Marcasite like the Dross of Iron, and is found in Copper Mines, and is of no Use that I know of.

The *Verdet*, or *Verdigrise*, or Rust of Copper, is made of Plates of red Copper, and the Skins of Grapes after Pressing soak'd in good Wine, and put together in a large Earthen Pot, *Stratum super Stratum*, that is to say, they put an Handful of those Skins at the Bottom of the Pot, and then a Layer of Copper Plates, and so on 'till the Pot be full; then they put it in a Cellar, and after some Days Time they take out these Copper Plates, which are cover'd with Rust, by the *Latins* call'd *Ærugo*; and this Rust being scrap'd off, the Plates are put in again after the same Manner as before, and this must be repeated 'till the Copper is consum'd, or render'd so thin, that it may be mix'd with the *Verdigrise*, as it often happens: The most Part of the Authors who have treated of *Verdigrise*, tell us, that it is made with Vinegar, which is not true, for the best Wine is not too good for it; and this is so true, that there is scarce any but *Languedoc* Wine that will make good *Verdigrise*; it is in and about *Montpellier* that the greatest Part of the *Verdigrise* us'd in *France* and other Countries is made, and it is a Commodity very difficult to make, and

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-148394-p0170-9 DFG

and to hit right, altho' it seems as if nothing were more easie; for if never so little happens to be amiss it grows greasy and black, and good for nothing, and will never come to a true Consistency. Had not the Receit been stolen from me, I would have told you how they do it at *Montpellier*, which I hope to recover and present the Reader with in the Second Edition.

There are some Authors who say, that one may make *Verdigrise* by putting Plates of Copper in a Crucible, with Salt, Sulphur, and Tartar, which being calcin'd and cool'd, the Plates are converted into a very good *Verdigrise*; but these Operations, supposing them to be true, are at present of no Use, because all the *Verdigrise* we sell is made in the fore-mentioned Manner.

We have two Sorts of *Verdigrise* from *Montpellier*, the one in Powder, the other in Cake: If it is good it must be dry, of a beautiful deep Green, and with the fewest white Spots that is possible. *Verdigrise* is a Merchandise that loses most of any Grocery Ware, and this makes them who deal in it mix it with several Druggs, that there is no Necessity of naming, and render it so moist that the Merchant loses much by the Wast of it, besides the Skin which covers it, for which they pay as much as if it were *Verdigrise*: Therefore they who use it should consider its Goodness, and not stand upon the Price; for I can affirm, that there is no Cake of *Verdigrise*, such as they send from *Montpellier*, that weighs twenty-five Pounds, but after it is dry has lost a third Part, so that the *Verdigrise* that cost twenty Pence when soft, will be worth near eight and twenty Pence when hardned.

Verdigrise is a Drugg the most demanded of any we have, and the Quantity of it that is us'd is almost incredible, not only in Physick, but by Dyers, Skinners, Hatters, Farriers and Painters; but that is remarkable, that *Verdigrise* alone, ground with Oil, cannot be used; so that it is absolutely necessary for Painting, to add white Lead to it, for otherwise instead of being green it would be black. As for the Properties of *Verdigrise*, one of them is Eating of dead Flesh; the Apothecaries use it in some Oyntments and Plaisters, as the *Ægyptiac*, the *Apostolorum*, the *Divine Plaister*, and others. They who colour Paper green, make use of *Verdigrise* and white Tartar to give it that Colour.

The Apothecaries and others, who have Occasion for *Verdigrise* in the afore-mentioned Compositions, and others, instead of the Powder, may dissolve it in Vinegar, and strain through a fine Sieve, and so avoid, in Reducing it to Powder, the Effects of the ill Quality of the flying Dust of *Verdigrise*.

Verdigrise, in Latin, *Ærugo*, or *Viride Æris*, is a Rust of Copper penetrated and rarified by the acid tartarous Salt of Wine: To make it, they stratify Plates of Copper with the Grape Skins, when the Must is taken from them, and leave them in that Maceration 'till they are in Part converted into a bluish green Dust, which they separate with Knives, and continue the Operation as before, 'till the Whole be turn'd into *Verdigrise*: This is commonly the Work of the Women in *Languedoc*, *Provence*, and *Italy*, where the Refuse of the Grapes have the greater Force to penetrate the Copper, and work upon it with its Salt. *Lemery.*

It deterges powerfully, it consumes proud Flesh, it attenuates and resolves, and is us'd only in external Medicines; it is sharp and digesting, and cicatrizes Ulcers, being mixt with Oil and Wax, and applied; it likewise cleanses them from their Filth and Putrifaction, although they were the most stubborn, and had resisted all other Remedies.

It is of good Use in the Gout, being dissolv'd in fair Water, and used warm to the Part.

It cures Diseases of the Eyes, and effectually takes off Pearls and Films. But before you use it for the Eyes, or for Wounds or Ulcers, you must purify it after this Manner: Powder it, and put upon it Spirit of Vinegar six or seven Times its Weight, digest 'till the Vinegar is tinged very green, which decant and cast away the Fæces, then evaporate the Vinegar in a Brass Vessel, and so you will have a glorious *Verdigrise* at Bottom, of which one Ounce is worth ten Ounces of the former.

Take of this fine *Verdigrise*, a Dram; Spirit of Sal Armoniac, half an Ounce; Alcool of Wine camphorated, two Ounces; mix them for a *Collyrium* to wash the Eyes. Take the White of an Egg beaten well with Spring Water, four Ounces, and add to it

Saccharum Saturni, ten Grains; white Vitriol, six Grains; and so many Drops of the *Collyrium* as may make it of an Azure Colour, with this wash the Eyes two, three, or four Times a-Day.

This fine prepar'd *Verdigrise* being made into an Oyntment with Honey, Juices of Wound Herbs, Vinegar, and absterfive Sulphur of Vitriol is applicable to weeping Wounds, Ulcers in the Joynts, *&c.*

15. *Of* Verdigrise *Chrystalliz'd.*

Pomet. THE *Chrystalliz'd Verdigrise*, or *Chrystals* of *Verdigrise*; or as it is call'd by Merchants and Painters, Calcin'd or Distill'd Verdigrise, is Verdigrise dissolv'd in distill'd Vinegar, and afterwards filtred, evaporated, and chrystalliz'd in a Cellar: These Chrystals are of some small Use in Physick to consume dead Flesh: They are likewise us'd by Painters to make a green Colour, especially in Miniature.

All the Chrystals of Verdigrise that we sell in *Paris* come from *Holland* or *Lions*, and are not unlike Sugar Candy, except in Colour, especially to that which is on Sticks, and if good these Chrystals must be beautiful, clean, and transparent, very dry, and as free from Sticks as possible. Here it may be observ'd, that the Verdet which the Apothecaries make is reduc'd to Chrystals by the Means of a Cellar, whereas that which comes to us is made after the Manner of Sugar Candy, as I have been inform'd.

I cannot tell what has induc'd the Merchants to call these Chrystals Distill'd or Calcin'd Verdigrise, seeing it is neither distill'd nor calcin'd, but made after the fore-mention'd Manner.

They likewise make Chrystals of *Verdigrise* by dissolving Copper granulated in the Spirit of Nitre, and afterwards evaporating to a Scum or Pellicle, and setting it in a Cellar to christallize.

If you would reduce these Chrystals to a Liquor after having dried them, you must carry them back to the Cellar to resolve them into Water, and this Liquor is call'd by the Apothecaries or Chymists, the Liquor of *Copper* or *Venus*, and the Chrystals the Vitriol of Venus or Copper.

16. *Of the* Mountain *or* Sea Verdigrise.

THE *Mountain* or *Hungarian Verdigrise* is a Sort of greenish Powder in Grains, like Sand, which is found in the Mountains of *Kernausen* in *Hungary*, and comes from *Presbourg* to *Poland*: It is found likewise in the Mountains of *Moravia*; and some will have it, that what the Ancients call Flowers of Brass was made by throwing Water, or rather Wine, upon Rose Copper, whilst red, that is to say, as it comes out of the Furnace; and that this Flower, or *Mountain Verdigrise*, is gather'd and found sticking to other Plates of cold Copper, which they place over them, in small Grains like Sand, and that this is made by Vapours which arise when they throw Water or Wine upon the hot Copper; and that it is that which makes what we call Rose Copper to be so unsmooth, and to be full of little Figures. Others have assur'd me, that this same Green was Plates of Copper dissolv'd in Wine, which was made almost after the same Manner as *Verdigrise*; but as I know no more of it, I shall only say, that such is to be made Choice of as is dry, of a high Colour, well granulated, that is to say, like Sand, which is the Mark of Natural *Mountain Verdigrise*, and makes the Difference between that and the Artificial, which some make by Pulverizing *Verdigrise*, and putting a little white Lead amongst it. *Pomet.*

The *Verdigrise* of the *Mountain* is of no other Use but in Painting, principally for making a Grass Green, and therefore it is that most of the green Painting we see in Gardens is done therewith.

As it is a dear Commodity, and comes from several Parts, so there are different Sorts of it, and different Prices, therefore they who use it should regard the Qualities of it rather than the Cheapness.

17. *Of Mix'd and* Bell-Metal.

Bell-Metal, according to Monsieur *Furetiere* is an Allay of Metals, the Principal of which is Copper melted with some Part of Tin, or of Brass; some for Cheapness

neſs put in Lead, becauſe one cannot melt Copper in a Reverberating Furnace, but that it ſhall remain full of Holes like a Spunge. There is likewiſe another Compound of Copper which is call'd *Mix'd Metal*, which in Effect is nothing elſe but *Bell-Metal*, and they give it this Name from the greater or leſſer Quantity of Tin that is mix'd in it, which is from twelve to five and twenty in the Hundred: The Dreggs or Scoria of mix'd Metal is call'd *Diphryges*, and is us'd in Phyſick. The Flower thereof is made by throwing fair Water upon melted Braſs; when it runs they place Iron Plates over the Fume of it, and that which congeals ſettles into little Grains like Millet Seed, which are bright, and of a reddiſh Colour, and this is call'd *Flowers* of *Braſs*. The Scales of Braſs is what falls from the Braſs when they hammer it and work it.

Diphryges is of a mix'd Faculty, meanly aſtringent, ſharp, and of excellent Uſe againſt ſpreading Ulcers; it cleanſes, dries, and conſumes Excreſcences, and being made into a *Collyrium* is good for dropping Eyes, and ſuch like Diſeaſes of the ſame. The beſt is that which has the Taſte of Braſs, or the Ruſt of it, being aſtringent, and very much drying the Tongue.

As for the mix'd, or Bell-Metal itſelf, we uſe it for making Figures, Bells, Mortars, and other Utenſils: The beſt Metal is that which is whiteſt and ſounds like Silver. I ſhould not have been ſo long upon this Head, if it had not been for the Sake of Tutty, which is deſcrib'd under the following Head.

18. *Of* Tutty.

Tutty, or the *Spodium* of the *Greeks*, is a metallick Species in Scales or Drops of different Size and Thickneſs, ſolid within, and rough without, with a Sort of Excreſcences, like Pins Heads, for which Reaſon the Ancients call'd it *Spodium*, or *Tutty* in the Cluſter. The *Tutty* which we ſell in *France* comes from *Germany* and other Places, where they make mix'd or Bell-Metal. It is wrong to think what moſt Authors, both New and Old, have aſſerted, that *Tutty* is got from the yellow Copper or Braſs, and that it is made at the ſame Time as the Pompholyx; for this is not true, ſeeing the *Tutty* is found ſticking to Rolls of Earth, which are hung up and plac'd on Purpoſe on the Top of the Furnaces where the Founders caſt their mix'd and Bell-Metal to retain the Fume or Vapour, like the Smoke in Chimnies, and by the Means of theſe Rolls the Vapour is retain'd and reduc'd into a Shell of the ſame Figure as theſe Rollers, which we have ſeen, and the Thing is ſo certain, that if one will but look amongſt the *Tutty*, you will find ſticking to it the Earth, and therefore it is not made by Sticking to the Bottom or Sides of the Furnace; and that which makes this more than a Suppoſition is, becauſe all the *Tutty* we have is always in Form of a Gutter, and half round.

Tutty ought to be in bright Scales, thick, granulated, of a fine Mouſe Colour without, and a pale Yellow within, hard to break, and as little mix'd with Foulneſs as poſſibly can be. *Tutty* has no other Uſe, that I know of, but in Medicine, and that not 'till 'tis well beaten: Others burn it, and after waſh it and make it up into Troches which they uſe for Diſeaſes of the Eyes, Mixing it with freſh Butter, or Diluting it with Roſe or Plantin Water. *Tutty*, well prepar'd and incorporated with freſh Butter, is an excellent and ſure Remedy for the Piles: That is moſt eſteem'd which comes from *Orleans*, either becauſe it is better prepar'd, or becauſe it has all along carried the Vogue with it.

Tutty is brought from *Sweden*, *Cyprus*, *Greece*, *Turkey* and *Egypt*, *Lemery*. but the *Cyprian* is the beſt: It was heretofore brought from *Alexandria*, and therefore Authors, in their Deſcriptions, call it *Tutty* of *Alexandria*. The Difference between the *Pompholyx* and the *Tutty*, or the *Grey Spodium*, is this; the Pompholyx is more white and light, like volatile Meal; the latter is nearer the Colour of Braſs, heavier, thicker, and fattiſh, which with Vinegar yields a Smell like Braſs. *Tutty*, by ſome, is accounted the better Medicine, and more powerful for the Uſes intended. *Cadmia* calcin'd by a violent Fire and brought to Aſhes, is ſold for *Tutty*, but this is a Cheat, and ſometimes for Want of it, burnt Ivory is ſold in the Shops for it.

It

It is detersive, dificcative, proper for Diseases of the Eyes, for drying and cicatrising of Wounds, and for the Piles; it is only us'd externally after being ground to a very fine Powder.

19. *Of* Chalcitis.

Pomet. *Chalcitis*, or *Colcothar*, is a natural Vitriol made red by subterraneous Fires in the Entrails of the Earth, which is the Reason why Chalcite is a Stone of a reddish Colour. I shall not endeavour to write what the Ancients have said touching the different Changes that happen to the *Chalcitis*, nor to explain what is *Misy*, what *Melanteria*, and what *Sory*, for I cannot tell what these three last are, or where they may be found. *Matthiolus* upon *Dioscorides*, Page 729, says, that *Misy* is hard and like Gold, and glisters like a Star, and is found in *Cyprus*. The *Melanteria* is found of two Sorts; one is found growing like Salt at the Entrance of Copper Mines, the other is found congeal'd at the Top of the Mines: He says that the best *Melanteria* is that which is smooth, clean, firm, and of the Colour of Sulphur, and that turns black as soon as a Drop of Water is put upon it. As for *Sory*, he says it is black, full of Holes, and astringent to the Taste, of a very ill Smell, and that a great deal is found in *Ægypt*, *Libya*, *Spain*, and *Cyprus*. *Pliny*, on the other Hand, says, That *Chalcitis*, *Misy*, *Melanteria*, and *Sory*, are the same Thing, that the one changes to the other in Process of Time, that is to say, *Chalcitis* becomes *Misy*, *Misy* turns to *Melanteria*, and *Melanteria* to *Sory*, which I could never find, though I have had a Lump of it above eighteen Years, in which I could never see any Alteration, as to its Nature or Colour, tho' I have been careful to observe it. It is true, there is a *Chalcitis* that has different Colours in the same Piece, but as I have found no Alteration in it by keeping all the Time I had it, I am apt to believe it was so naturally.

Chalcitis is to be chosen in prettty large Pieces, of a brownish Red, of the Taste of Vitriol, which being put into a little Water, dissolve easily, and being broke are of a Copper Colour, but something more shining.

The *Chalcitis*, or *Natural Colcothar*, is brought from different Places, as from *Sweden* and *Germany*; it is a Drugg very little us'd in Medicine, because very rare; and if it were not an Ingredient in *Venice-Treacle* there would be scarce any Demand for it. The Dearness and Scarcity of this Stone have given Occasion to many Counterfeits, and to seek for Succedaneums, as the Colcothar or Vitriol made red, the white Vitriol calcin'd, the *Lapis Calaminaris*, because of its Colour, and several other Things, so that Persons who want the true *Chalcitis* must apply to honest People, and not stick at a Price.

Chalcite is a Vitriol naturally calcin'd by the Subterranean Fires, *Lemery*, and render'd into Pieces of Stone, pretty big, red, and sometimes streak'd within with yellow Veins something sparkling; it is found in Copper Mines, and within Side participates of that Metal; it is melted by Fire; it is brought sometimes from *Germany* and *Sweden*, but is generally very scarce in *France*.

That is most preferable that is in pretty large Pieces, of a brownish Red without, which being broke, is of a Copper Colour, something shining, of the Taste of Vitriol, and easily dissolv'd in Water.

The *Chalcitis* is hot, dry, detersive, and very astringent; it stops Bleeding at the Nose; it is us'd internally and externally; and in the Composition of *Venice-Treacle*; but not being easily got they commonly substitute an artificial Colcothar, which is a green Vitriol calcin'd to a Redness in the Room of it: It is of thinner Parts than *Sory*, but thicker than *Misy*. In a *Collyrium* it cleanses, dries, and heals the Eyes. The same *Collyrium*, if weakned with Rose Water, prevails against St. *Anthony*'s Fire, and all Sorts of creeping Sores, whether of Skin or Flesh. With Juice of Leeks it is said to stop a Flux of Blood at the Nostrils, as also in Wounds, and of the hemorrhoidal Veins; it is good against Vices in the Gums, and eating Ulcers of the Tonsils, the Powder of it being laid upon the Part affected: Burnt and mixt with Honey, it helps callous and rough Eybrows, Fistulas, Leprosy, and other cutaneous Diseases.

They

They who distinguish *Misy* from *Chalcitis* say, it is a Natural Mineral Excrement almost like Gold, which glisters when it is broken: It is commonly bred upon the *Chalcitis*, and is only the Recrement of that Mineral, being bred thereon, as Verdigrise is upon Brass: It is very astringent, burning, and of much thinner Parts than *Chalcitis*, but is of the same Virtue with it, as being bred from it, but in a different Degree. That which comes from *Egypt* is accounted the best, and is more corrosive than *Chalcitis* or *Sory*, being calcin'd and burn'd or wash'd, it is good against malignant Ulcers or Fistulas. With Lime Water, in which a little Sal Armoniack is dissolv'd, a *Collyrium* may be made by Infusing the Powder. That Water is likewise good to wash malignant Sores, and running Ulcers.

The *Melanteria* of *Dioscorides*, according to *Matthiolus*, is a Mineral Vitriolick Matter, of which there are two Kinds. One is found like a Salt upon the Entrance of Copper Mines, from whence they gather it. The Second is found at the Top of the same Mine in a firm, smooth, clean Stone, of the Colour of Sulphur. *Dioscorides* prefers this latter Sort to the first, and chiefly when it grows black upon being melted with a little Water: He says the *Melanteria* is found in *Cilicia*, and several other Countries; he attributes a caustick Virtue to it. This Drugg is unknown to us, and many believe, with *Pliny*, that it is nothing else but the *Chalcitis*, which has taken several Shapes and Colours in the Mine: However it is, we substitute the *Natural Chalcitis* in the Stead of it.

Sory is a stony Mineral, vitriolick, gross, impure, porous, or naturally pierc'd with many Holes, fattish, black, of an ill Smell, and a stiptick Taste. It is found in the Mines of *Cyprus*, *Spain*, *Libya* and *Egypt*: And as *Matthiolus* says, it is found in the Dukedom of *Brunswick*. Many have thought it to have been a *Chalcitis* grown old, and that has lain long in the Mine; but there is more Probability that it was a Mixture of Vitriol and Bitumen calcin'd by subterranean Fires. There has been none of it found for many Ages, at least it has been neglected, and we substitute the *Chalcitis*, or natural red Vitriol in the Room of it; it was drying, burning, and astringent, not much differing from *Misy*, but of thicker and grosser Parts, and therefore less piercing.

20. *Of the* Roman Vitriol.

Roman Vitriol, as well as all other Vitriols, or Sorts of Copperas, is a Chrystallization drawn by the Help of Water from a Sort of Marcasite, found in Copper Mines, to which the Ancients have given the Name of *Pyrites*, or *Fire-Stone*. This Stone is found under our Clay-Pits at *Passy*, within a League of *Paris*, upon which several Operations have been perform'd; and as I have been assur'd, it was with this that a certain Abbot made his universal Medicine. The *Pyrites*, from whence they extract the *Roman Vitriol*, is found in several Parts of *Italy*: To reduce this Marcasite to Vitriol, they expose it for some Time to the Weather, that so the Air may penetrate into it, and that it may calcine and turn into a Chalk of a greenish Colour. When the Pyrites is fit for Working, they throw it into Water, and afterwards by the Help of Fire and wooden Tubs, reduce it to Chrystals, such as we receive from *Italy*. In a Word, all the Vitriols, or Copperas's, are made as they make Allum in *England*, or Saltpeter with us. All the Difference that there is between the several Copperas's proceeds from the different Places where the Mineral is found; and as it participates more or less of the Copper or the Iron. They which have most of the Copper are those of *Cyprus* or *Germany*: They which have most Iron are the *Roman Vitriol*, and that from *Pisa* and *England*. When the first are rub'd upon the Edge of a Knife, wet with Spittle, they make it look red: On the contrary the *Roman Vitriol*, and the Copperas of *Pisa* and *England*, don't change the Colour upon the Edge of the Knife, and this has given some People, that shall be nameless, an Opportunity of Counterfeiting *Roman Vitriol* by *English* Copperas, which they do, by washing that Copperas never so little, and exposing it to the Air for some Days, 'till from a green, it turns of a greyish Colour, which is easie to be found out, because the true *Roman Vitriol* is in thick long Pieces, of a Grass Green, very difficult to melt, and being broke is trans-

Pomet.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-148394-p0175-8 DFG

transparent as Glass, from whence, the *Latin* Word for Glass being *Vitrum*, some pretend that it takes its Name; others will have it, that the Name of *Vitriol* is mysterious, and that every Letter stands for a Word; so that it is as much as to say, *Visitando Interiora Terræ, Rectificando Invenies Occultum Lapidem Veram Medicinam.*

The true *Roman Vitriol* is much sought for at present, both because of its Scarcity, as well as because 'tis proper for the making a white Powder, which they call the *Sympathetick Powder*, which is only *Roman Vitriol* expos'd to the Air and the great Heat, during the Dog-days for a considerable Time; and when it becomes extreamly white by the Calcination which the Sun has given it, is made use of for Wounds and Stoppage of Blood; some mix Gum Tragacanth with it. They bring us likewise from *Italy* another *Vitriol*, which comes near the Colour of the *Roman*, only it is greener, and in lesser Pieces, and is what we call *Vitriol* or *Copperas* of *Pisa*, and is made use of by the Dyers.

The third *Vitriol*, which is of a Martial Nature, and as it is more common, is also cheaper than the *English* Copperas, is much us'd by Dyers, Hatters, and others, that have Occasion for a black Colour; and they pretend that That which makes the Copperas dye Black, is because it participates of the Iron; others will have it, because they who make it throw old Iron into the Liquor.

The necessary Qualities in right *English* Copperas is, that it be dry, of a clear transparent Green, with as few small and whitish Pieces as possible.

Of the Cyprian *or* Hungarian Vitriol.

Notwithstanding all the Pains I have taken to discover what the *Vitriol* of *Cyprus*, which we sell, might be, I have not been able to learn it. The Ancients, and some Moderns, have pretended, that this *Vitriol* is a Chrystallization made of a blue Water which is found in subterraneous Places in *Cyprus*, from whence it has its Name: And a Person of Worth and Honesty has affirm'd to me, that the *Vitriol* of *Cyprus* was made of Rose Copper dissolv'd in the Spirit of *Vitriol*, and afterwards Chrystalliz'd. Another has told me, that it was made of *German* Copperas; but not knowing which Part to take amongst these three, I shall only say, that two Sorts of *Vitriol* are brought from *Cyprus*, one in large Pieces which we call the *Companys Vitriol*, because the Merchants Trading to the *Indies* bring it to us; the other cut into Bits on purpose, with Points like Diamonds, to make it look more beautiful, and promote the Sale.

The *Vitriol* of *Cyprus* or *Hungary* is to be chose of a fine sky-colour'd Blue, especially when broken; for being a Commodity easily penetrated by the Air, it will come to be of a whitish grey on the Outside, which does not at all diminish its Goodness, but renders it not so saleable to the Eye; and a Sign that it is the Superficies only that is damag'd is this, that by putting it to the Tongue, upon the Approach of the least Moisture, it will come to its Colour. Some Persons have assur'd me, that so piercing a Spirit is drawn from the *Vitriol* of *Cyprus*, that it would break any Glass Vessel of whatsoever Thickness, and yet tho' so piercing, being mix'd with an equal Quantity of Water, was a Sovereign Remedy for Consolidating all green Wounds, and Stopping of Blood, which is probable enough, because we have no Druggs more astringent, or that stop Blood better than the *Vitriol* of *Cyprus*. This *Vitriol* is much us'd by several Artists. Some Persons carry it about them for Blotches in their Face: This, as well as the *Roman*, is us'd for the Sympathetick Powder.

Of German Copperas.

The *German Copperas* is a Vitriol of a bluish Green, clear and transparent, which is made and chrystalliz'd at *Gosselar* in *Saxony*, whence it is that the *German Copperas* is call'd *Gosselar*, or *Saxon Vitriol*. The largest Pieces, cleareſt, and most transparent, are to be chosen, and the driest that can be.

The *German Copperas* is of much Use in Medicine, as being that from whence the Chymists draw most of their Preparations, as shall be shown hereafter: It is likewise us'd by the Dyers. This *Copperas* may be us'd for Stopping Blood in Case of Necessity, instead of the Vitriol of *Cyprus*, but it has not so much Efficacy.

Of

Of White Copperas.

The white Vitriol which we fetch from *Germany*, is the *Copperas* of *Goſſelar*, before-mention'd, calcin'd to that Whiteneſs, and afterwards put into Water and filtred, and reduc'd to Salt; and when it begins to coagulate, the *Germans* make Lumps of forty or fifty Pound Weight, of the Shape we ſee them in. It is therefore an Abuſe put upon us by a modern Author, who would make us believe that the *White Copperas* is that which is found near Fountains, and is the moſt purified from any metallick Subſtance. This *Copperas* ought to be pretty hard, white, and of the neareſt Reſemblance to fine white Sugar that can be; Care muſt be taken to keep it from the Air, for when that gets to it, it becomes yellow and unſaleable.

This *Copperas* is of ſome Uſe in Phyſick, becauſe ſome People put it into Roſe or Plantain Water, with Orrice and Succotrine Aloes, to cure the Eyes: Painters uſe it when calcin'd to put in their Colours that they may dry; but Farriers have the moſt Occaſion for it.

By Help of the Spirit of Vitriol they draw Chryſtals from this *White Copperas*, which are thoſe we call *Gilla Vitrioli*, or Emetick Vitriol, becauſe being taken from twelve Grains to a Dram in Broth, or other Liquor, it gives an eaſy Vomit.

Of the Spirit *and* Oil *of* Vitriol.

They draw from the *German* or *Engliſh Vitriol*, calcin'd to a Whiteneſs, by Means of Fire and a Retort, a Flegm, a Spirit, and an Oil; but becauſe the Operation is long and troubleſome, I ſhould not adviſe any one to concern themſelves with it: Beſides the *Spirit* and *Oil* of *Vitriol*, which we Apothecaries and Chymiſts make, are not ſo good, nor can be afforded ſo cheap as thoſe brought from *England* and *Holland*: This muſt be taken Notice of, that what we call *Oil* of *Vitriol*, is a Spirit well rectified from its Phlegm; but it muſt not be expected in this as in others, that the *Oil* ſhold be fat and ſwim upon the Water, for the *Oil* of *Vitriol* is not ſuch, but eaſily intermixes with watry Liquors.

That which is call'd *Spirit* of *Vitriol* is the Liquor which comes immediately after the Flegm, which if right ought to be as clear as Water, of a Taſte ſomething ſharp, and being put upon white Paper, and held to the Fire, becomes black. They uſe this *Spirit* of *Vitriol* very commonly in Phyſick for Cooling, and upon other Occaſions. The *Spirit* of *Vitriol*, well cleans'd of its Flegm, is what we improperly call *Oil* of *Vitriol*, and ought to be of a dark Colour, of ſo piercing and cauſtick a Taſte, that it is impoſſible to endure it upon the Tongue. They are in the wrong who think that acid Spirits need not be ſtopt, becauſe they pretend that they don't evaporate, which is true; but this *Spirit* being throughly deveſted of its Flegm, if you leave it in a Bottle unſtop'd, the Air gets into it, increaſes its Bulk and Weight, and at laſt it becomes as inſipid as Water.

The *Oil* of *Vitriol* is very corroſive, and therefore made uſe of to diſſolve Metals: It is taken inwardly for the ſame Diſtempers as the Spirit, but muſt be us'd in leſſer Quantities, becauſe it has greater Strength in it. *Spirit* of *Vitriol* ſhould be bought of ſuch Perſons as one can truſt, becauſe there are ſome who make *Spirit* of *Vitriol*, by Mixing *Aqua fortis* with Water, which they are able to afford at a cheaper Rate: and this *Spirit* of *Vitriol*, made with *Aqua fortis*, is call'd, the *Philoſophick Spirit* of *Vitriol*, of which you muſt carefully beware.

As to the Water and Flegm of *Vitriol*, that I mention'd before, it is of no Uſe, becauſe it is inſipid, yet ſome People waſh their Eyes with it.

Monſieur *Lemery* ſays, that you muſt uſe *Engliſh Vitriol*, or *Copperas*, for the fore-mention'd Operations, becauſe it is not of ſuch Acrimony as the *German*: However all they who work with *Vitriol* make uſe of the *German*; but I leave the Deciſion of this Point to them that have more Experience in it than I have. That which remains in the Retort, after Diſtillation, is a reddiſh Earth which the Chymiſts call, the *Caput Mortuum* of *Vitriol*, *Artificial Colcothar*, or *Rubified Vitriol*. One may draw a Salt out of it by the Means of Water and Fire, which is what they call *Salt* of *Vitriol*, and is made uſe of as *Gilla Vitrioli*, only not to be taken in ſuch large Doſes. The Salt of Vitriol ought to be white, and faithfully prepared; for

for it is usual to sell the *Gilla Vitrioli*, or *Green Vitriol* calcin'd to a Whiteness for the Salt of Vitriol.

The *Colcothar* has some little Use in Medicine, forasmuch as some People employ it instead of *Chalcitis*, both because it is cheaper, and also has the same Qualities. Some Apothecaries put *Colcothar* into their *Diapalma*, as well to make it red, as to humour the Surgeons, who are pleas'd that the Publick don't know that it is nothing but *Diapalma*; and to disguise it the better, they call the Plaister by the Name of *Diachalciteos*.

They make with the *Colcothar*, Burnt Alum, Sugar Candy, Urine and Rose-Water, a very astringent Water, and proper for Stopping of Blood, as Monsieur *Lemery* has observ'd, to whom the Reader may have Recourse. There is another Stiptick Water of Monsieur *Faveur* describ'd by Monsieur *Charas*.

It is to be observ'd, that the *Colcothar* is improperly call'd *Calcanthum*, because the Word *Calcanthum* signifies nothing else but *Vitriol*.

Lemery. *Vitriol* is a Mineral Salt drawn as Saltpeter by Lotion, by Filtration, by Evaporation and Chrystallization, from a Sort of Marcasite, call'd *Pyrites* or *Fire-Stone*, of which I shall speak in its Time; it is found in the Mines in several Parts of *Europe*, as in *Italy* and *Germany*; there are some Sorts taken about *Paris*.

This Fossil or Mineral consists of an acid Salt, Earth, Iron and Copper. The distinguishing Mark of *Vitriol* consists in the black Colour, which it communicates to an Infusion of Galls. That 'tis an acid Salt appears plainly, not only by its being chymically analiz'd, (for a great many cavil, that an acid Spirit may be produc'd by the Violence and Force of the Fire) but also from the bright red Colour that a Solution of *Vitriol* imparts to blue Paper. The Earth of *Vitriol* precipitates or falls to the Bottom of the Crucible, when the Solution of fix'd Nitre is pour'd upon a Solution of *Vitriol*: As to Iron and Copper, it is not to be doubted that they are contain'd in Vitriol; for by pouring the Spirit or Salt of Vitriol, upon the Filings of Iron, an excellent Vitriol of Mars or Iron is made, and by placing Plates of Iron or Copper in a Crucible, with some common Brimstone interspers'd, a Vitriol is produc'd by the Help of Fire: Wherefore it is very probable that the Vitriol of Mars or Iron, and the Vitriol of Venus or Copper, are bred in the Bowels of the Earth, from the acid Juices or Liquors, corroding the Copper.

White Vitriol, vulgarly call'd *Eye-Copperas*, is a Mineral Vitriolick Salt found in the Earth, near unto Fountains, and the most of all depurated from a metallick Mixture; or it is made by Dissolving the *Roman* or dark green *Vitriol* in Water, and then boiling it 'till all the Water is evaporated, and the Vitriol turn'd into large white Lumps like Sugar, which being expos'd to the Air, turn outwardly of a reddish or yellowish Colour. It is the least acrid of any of the Vitriols.

It is to be chosen in large white Lumps, pure and clean, resembling Loaf-Sugar, of a sweet Taste, astringent, accompanied with an Acrimony; it contains Abundance of Flegm and acid Salt, a little Sulphur like common Sulphur, and some Earth.

The white natural Vitriol needs no Manner of Preparation, being of great Use and Force in a Loosness and Bloody Flux, and frequently us'd for that Purpose in Camps and Hospitals. The other white Vitriol is thus purified: Take *White Vitriol*, what Quantity you please, dissolve it in Flegm of Vitriol, or in Rain Water, then filtrate, evaporate, and set it to chrystallize; this is that which is call'd *Gilla Vitrioli*, and *Gilla Theophrasti*.

It heats, desiccates, astringes, or constipates, yet excites Vomiting; it powerfully extricates tough Flegm out of the Ventricle, by its emetick Force, yet may be given to Children: It kills Worms, and strengthens the Stomach and Brain, and is good against Convulsions and Epilepsies; it cleanses and strengthens the Womb, and is us'd in Injections against a Gonorrhea, and the Whites in Women, a Dram thereof being mix'd with a Pint of Spring Water, and so us'd with a Syringe. Inwardly, as a Vomit, it is an excellent Remedy against Fevers: Dose from twelve Grains to a Dram in Broth, or other Liquor: It cleanses the Stomach from all Impurites, eases the Headach, stops Fluxes, and is good against *Quotidian* and *Tertian* Agues.

There-

There are two Things obſervable, *First*, That in making this *Gilla Vitrioli* all the Liquor may be evaporated away without any Chryſtallization, ſo the *Gilla* will remain at the Bottom in a white Powder. Next, That after taking this Vomit the Sick ſometimes voids by Stool a black Matter, like Ink, becauſe it often happens that ſome Part of the *Gilla* deſcending into the Guts meets with a Styptick Matter, almoſt of the ſame Nature as Galls, which cauſes that Blackneſs.

The Sympathetick Powder is *White Vitriol* open'd and prepar'd; it ought to be plac'd upon a Stone ſo as to receive the Beams of the Sun reflexively, from a large Burning Glaſs, by which it will be ſooner done than by any Furnace whatſoever, and the calcin'd Powder is to be kept in a Glaſs cloſe ſtopt for Uſe: It is us'd in the magnetick Cure of Wounds; diſſolv'd in Water, and us'd outwardly, it dries, binds, and heats much, and has the Virtue of the *Gilla*.

The *Aqua Styptica Compoſita*, or the Compound Styptick Water, is made of this *Vitriol*. Take purified white Vitriol, Roch Alum, of each an Ounce; *Saccharum Saturni*, half an Ounce; Spring Water, two Quarts; mix and diſſolve over a gentle Heat, digeſt cloſe ſtopt, ten Days; decant the Clear, filtrate and keep it for Uſe. This is an eaſy Preparation, and of few and ſimple Ingredients, but of no mean Uſe. It is a good Injection (Univerſals being firſt premis'd) againſt the Whites in Women, and the Gonorrhea in Men, though of never ſo long ſtanding, and poſſibly may do more in two, three, or four Days Time, being injected, than all other Medicines could do in as many Years: It ſtops Bleeding in any Part, heals Ulcers, and infallibly cures all Sorts of Tetters, Ringworms, Scabs, Scurf, Morphew, and inveterate Herpes in any Part of the Body, if daily wash'd therewith, two or three Times a Day, for half an Hour at a Time, and as hot as can be endured; injected as a Clyſter, it kills the Worms call'd *Aſcarides*.

There are ſeveral Sorts of *Green Vitriol*, as the *German* or *Hungarian Vitriol*, the *Engliſh Vitriol*, and the *Roman Vitriol*.

As for the Green or *Hungarion* Vitriol, the Native is found in Mines like Copper; the Factitious is made of the Marcaſite, call'd Pyrites, or the *Fire-Stone*, with or without Additions of Copper, and is brought to us from *Dantzick*, out of *Germany*, *Hungary*, &c. The beſt is the greeniſh, and of that, that which participates more of Copper than of Iron, which rub'd on a Knife colours it red; that which is ſubceruleous, pale, aquoſe, and moiſtens the Hands, is not ſo good.

The Factitious is that which is made either of Water coming from vitriolick Springs evaporated and chryſtalliz'd, or elſe made from vitriolick Marcaſites, the Pyrites, or Fire Stone, (with Additions of Copper) which is found in Grounds abounding with metallick Seeds, and inclin'd naturally to the Generation of Sulphur; it is known by burning, for it yields a ſulphureous Fume, not unlike Brimſtone: This powder'd and expos'd to the Air, yields on its Superficies, a little white and ſharp Salt melting in the Mouth, at firſt ſweetiſh, then ending in a vitriolick Harſhneſs. From this Powder Vitriol is thus extracted; it is diſſolv'd in Rain Water, by boiling in a ſlow Heat, then filtrated, evaporated, and chryſtalliz'd, ſo you have an excellent greeniſh Vitriol.

Out of any of theſe three Kinds of greeniſh Vitriols all the great and fam'd Medicines are made; it goes ſometimes by the Name of *Dantzick Vitriol*; it may be purified after the ſame Manner as the White, and the Gilla of it has all the Virtues as the other, but is much ſtronger, and ought to be given with Caution and Diſcretion, and only to ſtrong Perſons; and if given to the Sick, they ought to be provok'd to Vomit, leaſt by Reaſon of its Quality it ſhould ulcerate the Tunicles of the Stomach and Bowels.

The Sympathetick Powder is much better to be made with this than with white Vitriol, as being much more powerful to all the ſame Intentions of curing Wounds, and the like: And as to the Compound Styptick Water of white Vitriol, the ſame may be done with the *Hungarian*, only the Proportion of it muſt be ſomething leſs. It is ſuperior in Virtue, and may do Wonders, if in a wiſe Man's Hand, but for vulgar Uſe the former is better, becauſe it may be truſted with Perſons that are leſs skilful, and there will be no Danger of their doing Miſchief with it.

The Styptick Water of Monſieur *Faveur* is made after this Manner: Take of Vi-

triol twenty-five Pounds, diſſolve it in fair Water, ſtrain it through a coarſe Cloth, boil it in a Copper Veſſel for a Quarter of an Hour; remove it from the Fire, and put to it immediately half a Pound of Spirit of Vinegar to cauſe the earthy Parts to ſettle; let it ſtand twelve or fourteen Hours that the Terra may precipitate, then decant the clear Liquor. This Terra, or precipitate waſh well, dulcify and dry over hot Embers; of which take eight Ounces, put it into a Glaſs Retort, upon which pour Spirit of Vitriol, well rectify'd from its Flegm, eight Ounces; diſtill with a gradual Fire, ſoft at firſt, and at length very violent, continuing it ſo 'till nothing more will come. Take the *Caput Mortuum*, reduce it to Powder, and with Alcool, or tartariz'd Spirit of Wine, enough to cover it five Inches over, in a Matraſs well luted, ſet it in a ſoft Heat to digeſt for twenty-four Hours, 'till the Spirit of Wine becomes very red; filter it hot and draw off the Spirit in a Glaſs Alembick, ſo you have at the Bottom a whitiſh Powder: Take of this Powder one Ounce; Rain Water four Ounces, digeſt in the Sun for ſome Days, then filter and keep it for Uſe: But the ſame Perſon, in making the ſame Water, did put double the above limited Quantity of Spirit of Vitriol, and then only drying the *Caput Mortuum* in a Crucible 'till it became yellowiſh, he to two Ounces of it put only three Ounces of Rain Water; digeſted them together for ſome Hours, then filtrated and kept the Liquor cloſe ſtopt for Uſe, as an extraordinary Remedy againſt all Hemorrages, or violent Fluxes of Blood.

To conclude, The *German* or *Dantzick Vitriol* is in green Chryſtals, inclining to a blue, of an aſtringent acrid Taſte; it participates of Copper, and is that which is us'd to make *Aqua fortis*.

The *Engliſh* Copperas is in Chryſtals of a dark green Colour, of a ſweet aſtringent Taſte, coming near to that of white Vitriol, it participates of Iron, and does not make it change its Colour. It is more than half of it Flegm, a great deal of acrid Salt, Sulphur, and Earth. One may draw from this Vitriol a very good Spirit of Vitriol by Diſtillation, as I have ſhown in my Book of Chymiſtry.

This Vitriol is made in *England*, upon the River of *Thames*, in vaſt Quantities, of the Marcaſite Pyrites, or Fire-Stone, with Addition of old Iron. Of this Copperas, with Galls, or any other aſtringent Vegetables, you may make Ink, and the Black for Dyers; yet ſome think that the Vitriol of Copper is better, becauſe that Experience teaches the Refiners that *Aqua fortis* made with Copperas, or Vitriol of Iron, will carry its Foulneſs through all their mediate Solutions, even to the Verditer itſelf, which it will make of a dirty green Colour, wherefore *Aqua fortis* is made of *Dantzick* Vitriol only.

Dark green, or *Roman Vitriol*, vulgarly call'd *Common Green Copperas*, is prepar'd about *Rome* in *Campania*, being extracted out of Clots or Lumps, of an aſh Colour inclining to black, like Potters Clay, which being expos'd to the Air gradually heat and ferment, and being diſſolv'd ſome Days after in fair Water they yield this Sort of Vitriol, but from the freſh Clots no Vitriol can be obtain'd. This *Roman Vitriol* is alſo prepar'd in ſome Parts of the Kingdom of *Naples*; it is of a paler green than the *German Vitriol*, but almoſt of the ſame Styptick Taſte.

The Blue Vitriol, or Celeſtial Stone, is call'd *Cyprian*, or *Hungarian Vitriol*, becauſe it is brought to us from thoſe Countries; it is in Chryſtals of a very fine Sky-colour'd Blue. It is not certainly known after what Manner it is made; ſome think it is extracted by the Evaporation and Chryſtallization of the blue Water that is found in the Copper Mines: Others ſay it is an artificial Operation, perform'd by a Diſſolution of Copper, in a weak Spirit of Vitriol, evaporated and chryſtalliz'd. However it be, it participates much of the Copper, which gives it the blue Colour; it is acrid and ſomething cauſtick; it comes in great and leſſer Pieces, the little ones are pointed like Diamonds: It contains much acrid Salt, or a corroſive Acid of Sulphur, but leſs Flegm and Earth than other Vitriols.

The artificial *Vitriol* of *Venus* is made by taking little thin Pieces of Braſs, about the Bigneſs of a Shilling; firſt put a Layer of Sulphur, then a Layer of Pieces, filling a Pot full, *Stratum ſuper Stratum*, and calcine in a Furnace for two or three Hours; or calcine firſt the Copper by itſelf, and then beating the Calx to Powder, calcine it again,

again, being first mix'd, with every Pound of Calx six Ounces of Sulphur, stirring it continually as it burns, that it may not stick to the Pan, and become black; powder the Calx again and calcine and repeat it three Times, 'till the Calx becomes very red. Take of this red Calx in Powder, one Pound; fair Water, six Pounds; boil them together for about four Hours; let it cool and settle, decant the clear saphirine Liquor, and filtrate it after it has stood about two Days. The remaining Copper calcine as before with Sulphur, three Ounces, and with Water in like Manner draw the Tincture: This Process of calcining, boiling, settling, and filtrating, is to be done six or seven Times, 'till with Water you have extracted the whole saphirine Azure, or blue Tincture out of the Copper. These blue filtrated Liquors put together, and in a large earthen Bell, in a Sand Heat, not violent, evaporate the Water 'till a Pillicle arise, which being then put into a cold and moist Place for a Night, will shoot into Chrystals like great Gems. *Glauber*, extracts the Tincture from calcin'd Copper, with Spirit of Sal Armoniack, by frequent Ignition and Extinction, and in an Hour's Space extracts a blue Colour, which being set to chrystallize in a cold Place, shoots into most elegant blue Vitriol. *Beguinus* does it with Spirit of Vinegar, but then the Vitriol will be of an obscure green Colour.

The Native Blue Stone is good against Diseases of the Eyes, taking away Films, Clouds, Pearls, *&c.* Rheums, Redness, Inflammation and Blood-shot, if you take the Stone and put it into a little Spring or Well Water, for about two Minutes Time, and then take the Water with a Linning Rag to wash the Eyes, and drop two or three Drops into them, at Bed Time: It cureth any running Sore or Ulcer, or inveterate Fistula, Tetters, Ringworms, Scurf, *&c.* but for these latter Diseases, the Stone ought to lie in Water for a Quarter of an Hour. It also helps the Canker in the Mouth, by rubbing the Place with the Stone, and washing the Mouth with the Water.

The factitious blue Stone is given from two or three Grains, to twelve or fifteen in proper Liquors, against Diseases of the Head, Stomach, and Parts of Generation. It is often us'd in Injections in proper Vehicles, one Dram to one Pound of Liquor for all Sores, Ulcers, Scabs, Itch, Tetters, or any other curaneous Disease. Inwardly it kills the Worms. It may be given in a small Dose against Diseases of the Stomach and Brain; it strengthens the Brain against a growing Epilepsy. It is also a Specifick to cleanse the Womb, and is held as a great Secret to dissolve a little of it in Water against the burning and intemperate Heat of the spermatick Vessels, and so to use it for Injections: For as this Vitriol possesses a large Portion of the Sulphur of *Venus*, which is able to appease the Irritation of those Parts, so also it produces rare and eminent Effects, by Virtue of its detersive and refrigerative Salt.

The Red Vitriol, call'd *Colcothar*, is a Vitriol that has been naturally calcin'd in the Mines by subterraneous Fire, or artificially by ordinary Fire. That which is found naturally in the Mine, is call'd *Chalcitis*, because 'tis taken from Copper Mines: It is a brownish red Stone, which is brought to us from *Sweden* and *Germany*: It is rare, and we have scarce enough of it to use in our *Venice Treacle*, of which it is one of the Ingredients.

That is best which is of a reddish Brown, of the Taste of Vitriol, and easily dissolv'd in Water.

The Colcothar, calcin'd by the common Fire, is of a pleasant Red; the best is that which remains in the Retorts after the Distillation of the Spirit and Oil of Vitriol; both one and the other Colcothar contain a great deal of Salt and metallick Earth.

Vitriol is chymically analiz'd after the following Manner: Fill a Glass Matrass, or Cucurbit, up to the Middle with Vitriol powder'd; then clapping on the Head, fitting the Receiver, and luting the Joynts, distill it with a Sand Heat, that the Ros or Flegm of the Vitriol being of a strong sharp Taste may be drawn off; then take of what remains in the Matrass, bruise or powder it, and throw it into a Retort, encreasing the Fire gradually three or four Days, and you will obtain a Spirit and an Oil: And, *Lastly*, From the *Caput Mortuum* of the Vitriol dissolv'd, an Earth and Salt is obtain'd.

The Ros or Flegm of Vitriol is prescrib'd by the Chymists, from one Dram to two, and

and is mightily commended by them for its Virtues, being diuretick, vulnerary, anodine, and good to strengthen the Bowels.

The Spirit of Vitriol provokes Urine, excites an Appetite, and allays the burning Heat of Fevers, being given in a Cup full of cold Water to a grateful Sharpness. This Spirit may be sweetned, digesting it with the rectified Spirit of Wine, and then it may be us'd in Diseases of the Gums and cutaneous Distempers.

The Salt of Vitriol is endued with an emetick Faculty; it may be given from half a Dram to two Drams.

The Colcothar, or red Earth, out of which the Salt was extracted, is effectually us'd in a Loosness, Bloody Flux, Hemorrhages and Wounds.

The spirituous Parts of Vitriol may be easily again recovered, if you expose the *Caput Mortuum* for some Time to the open Air, keeping it from Rain; so that by Distillation you may obtain another Spirit; but this Spirit is a great deal sweeter and weaker than the Common.

Paracelsus corrects the Spirit of Vitriol, by pouring it upon the *Caput Mortuum*, and then Distilling it nine Times over, every Time pouring on more fresh Spirit; and taking it out of the Limbick, he puts it into a Retort, and distills it over again with as much Spirit of Wine as is sufficient to make it into a Paste; this he highly commends in an Epilepsy, or Falling Sickness.

Of the Medicinal Stone *of* Crollius.

The *Stone* of *Crollius* is made of *English* Copperas, White Copperas, Alum, White Pot-ashes, or *Natrum* of *Ægypt* of common Salt, Salt of Tartar, Salt of Wormwood, Salt of Mugwort, Salt of Succory, Salt of Plantain, Salt of Arsmart, White Lead, Bole Armoniack, Myrrh, Frankincense, Vinegar of Roses; of all these in proper Doses, as they are set down in *Crollius*, Page 442, by the Means of Fire, is made a red Stone, endu'd with very excellent Properties, as the same Author remarks, which would be too long to be describ'd in this Place: But as this Stone is of great Consequence, both because it costs a great deal of Money, and because few Persons have the true Knowledge of it, the greatest Part of the Apothecaries substitute in the Room of it the *Medicinal Stone*, describ'd by Monsieur *Charas*, and Monsieur *Lemery*, because they can afford it cheaper than they who sell the true Stone of *Crollius*, this latter being made of Druggs of a much lower Price, as shall be shown hereafter. *Pomet.*

Of another Medicinal Stone.

Monsieur *Charas*, in the 1041 *Page* of his *Pharmacopæa*, describes a *Medicinal Stone* compos'd of the Vitriol of *Cyprus*, Salt of Nitre, white Lead, Allum, Bole Armoniack, Sandiver, Sal Armoniack, and common Vinegar; so that one may see by these two Descriptions that there is a great deal of Difference betwixt this Stone and that of *Crollius*; and that more of this is likely to be sold for its Cheapness than of the other. *Pomet.*

Of the Lapis Mirabilis.

The *Lapis Mirabilis* is so call'd because of its great Properties, above all for the Cure of Webs and other Diseases that happens to the Eyes of Horses. *Pomet.*

This Stone is made by putting into an earthen Pot a Quantity of White Copperas, Alum, Bole Armoniack, Litharge, and common Water, as Monsieur *Solleysel* has remark'd in his Book, *Page* 86, to which they that have Occasion may have Recourse, as well to know the Dose as those excellent Qualities, by which it obtain'd such a Name.

21. *Of the* Pyrites, *or* Fire-Stone.

THE *Pyrites*, or *Fire-Stone*, is a Sort of Marcasite of Copper, of which they make their Copperas's or Vitriols; this Marcasite is weighty, of a Mouse Colour, full of little, yellow, shining Spots.

There is a great Quantity of this *Fire-Stone* in *France*, especially at *Passy* near *Paris*.

Pyrites

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-148394-p0182-7 DFG

Pyrites is a Sort of Copper Mar-
Lemery. casite, or hard Stone, heavy, which sends forth Sparks of Fire upon striking it with Iron of a grey Colour, interspers'd with little, yellow, shining Streaks: It is found in the Copper Mines in *Italy*, from whence they draw the *Roman Vitriol.*

To get the Vitriol out of this Stone, it is necessary to expose it to the Air for several Months together, that so the Acid getting insensibly into the Pores may rarify its Parts, and render its Salt more dissolvable, by this Time it is converted in a Manner to a Chalk, from whence they extract the Vitriol, by washing it several Times with Water, and making Evaporations and Chrystallizations as are necessary, and as they do in the making of Saltpeter.

The *Pyrites* is detersive, astringent, desiccative, digestive, resolutive, and to be applied outwardly.

22 *Of* Lead Oar.

Pomet. WE have three Sorts of *Lead Oar* that differ one from the other, only according to the Digestion they have receiv'd in the Bowels of the Earth. The First, that is to say, that which has receiv'd the least Heat, and by Consequence is most weighty, is that which has the Name of *Lead Oar*, and is made into Lumps call'd *Pigs*, by the *French*, *Salmons*.

This *Lead Oar* is a weighty Mineral, easy to break to Powder, and difficult to melt, which is taken out of the Mine in Pieces of different Bigness, sometimes clean and neat, sometimes mix'd with Stones, resembling a certain Sort of Marble.

This *Lead Oar* being broken, parts into shining Flakes, of a White, enclining to Black, very like the Shoots of Antimony.

The *English* melt this Lead, and afterwards cast it into Moulds of the Shape we see the Pigs in. The *Lead Oar* is of no other Use in *France* but for the Potters, who make use of it, having first reduc'd it to Powder to varnish the Earthen Vessels of a green Colour with it.

Although this Merchandize be of no great Consequence, yet great Care must be taken concerning it; for if there should chance to be any other Metal in it, as there is found to be too often, it would spoil all the Potters Ware, to the great Trouble of him that sold the Commodity; for this Reason you should never sell it to the Potters, without showing it them Piece by Piece, and taking a Note under their Hand, that they are satisfied to avoid farther Trouble.

The *Lead Oar* that has the requisite Qualities, ought to be in large Pieces, heavy, with fine shining Scales, as if fat, that is to say, easily tractable. In a Word, the most approaching to Tin-glass that it can possibly; and reject that which is full of Stones and Dirt, or Gravel, as good for nothing, as well as that which is mixt with the *Lead Oar* of the second Sort that I am going to speak of.

The *Lead Oar* of the second Sort is less weighty, and much harder than that beforemention'd, and being broke is of a Mouse Colour, of a coarser Grain, and smooth without, in some Measure resembling the black Lead; which shows that it has not receiv'd Heat enough to be converted into the black *Lead Oar*. This Quality makes this Lead Mineral to be entirely rejected, as being of no Use: And this Quality is often found in the first Sort, which causes so much Trouble to the Workmen, because they can no more melt it by the Fire than they can do Marble, and it spoils all their Work. However, I must take Notice, that some Alchymists desire it to draw their Lead out of it; for they pretend that the Lead drawn from it is more ductile and close than common Lead is found to be. Others will have it that there is some Silver in it which I leave other Persons to try; but as it is seldom us'd I should not advise any Person to furnish himself with any Store of it.

The third Sort of *Lead Oar* is very much us'd, and 'tis that we call *Black Lead*, or *Crayon*, because the most perfect of it serves to make Pencils to design withal. The Ancients gave it the Name of *Plumbago*, and of *Sea Lead*, because they pretend they took it from the Bottom of the Sea; Foreigners call it *Potelot*.

We have at *Paris* two Sorts of Black Lead, to wit, the Fine and the Common. The Fine to be perfect, and in good Condition, should not be heavy, of a black shining Silver Colour, not too hard nor too soft, easy to-

to be cut; and when divided, compact in the Inside, and not gritty, of a fine close Grain, in moderate Pieces, rather long, proper to cut, and make the long Pencils that are so much esteem'd. *Lead* of these Qualities wants for no Price, the Merchant may have what he pleases, being much sought for by Architects and other Persons for Drawing. This Sort of *Lead* comes generally from *England*, but as for the Common it is brought from *Holland*, and is of no great Use.

Monsieur *Morin*, Physician and Mineralist, has assur'd me that there were a great many Lead Mines in *France*, especially in *Auvergne*, from whence we might have these three Sorts of Lead, and this may be relied upon, he being a Person that would not affirm an Untruth.

Of Lead *in* Pigs.

They call *Lead* in *Pigs* the *Lead Mineral*, melted and purified from the Stone and other Impurities, which being well refin'd, by scuming and throwing Suet, or other Grease into it, is cast into Moulds to make *Pigs* of different Sizes.

The *Lead* so refin'd, to have its due Requisites, should be soft, that is to say, easy to cut, pliant, and the most white and shining that can be. The different Uses that are made of *Lead*, as well in several Trades, as in Chymical Operations, is the Reason of so large a Consumption as there is of it, as well in *Europe*, as other Parts of the World.

Of Lead *in* Powder.

The first Preparation that is made of *Lead*, is the Reducing it to *Powder*, not in the Manner some Apothecaries use to reduce it, by rasping it and beating it in a Mortar; but by melting *Lead* in an Earthen or Iron Vessel, and when it is melted by throwing into it the Dust of beaten Charcoal, stirring it about, and in this Manner you may sooner reduce into Powder a thousand Weight of Lead, than one Ounce the other Way. To clean the *Lead*, that is to separate the Coal from it, you have nothing to do but to wash it in Water, and dry it. *Lead* in *Powder* is very little us'd but by the Potters, who use it as Lead Mineral for glazing their Earthen Ware.

Lead in *Powder*, especially that which is in a Powder almost impalpable, has some Use in Medicine, because it is an Ingredient in some Oyntments, as the Pompholyx and others. They which refine *Lead* and make Musquet Bullets, or small Shot, send us their Scum, which we sell to the Potters, and is what we call *Scum* or *Lead-Ashes*.

Of Burnt Lead.

Burnt Lead, which the *Latins* call *Plumbum Ustum*, is Plates of Lead put into a Pot with Sulphur, and by the Fire the *Lead* is reduc'd to a brown Powder.

Burnt Lead has some Use in Medicine, because it dries and is an Ingredient in some Oyntments and Plaisters As to its Choice, there is no more to be said than that it be clean and well burnt: Some wash it to separate the Impurities, or the Sulphur that remains in it.

Of Red Lead.

The *Red Lead*, which we call *Minium*, is *Lead Oar* pulveriz'd, calcin'd, and reduc'd to such a *Red Powder* as we see it. It is wrong to think that the *Red Lead* which is brought from *England* is made of the Pig Lead, the Cheapness of it shews it to be otherwise, and that it is made from the Lead Oar as it comes from the Mine: Besides, the Pig Lead will never come to that Redness as Mineral Lead, whatever Fire you give to it.

Minium ought to be chose for its high Colour, the finest Powder, and cleanest that can be, and Care must be taken that it has not been wash'd, which will be known by its whitish Colour, and the little Lumps that are commonly in it. One may draw Mercury, from *Minium*, with Lime or File-Dust; but it is in so small a Quantity, that it is scarce worth speaking of.

The *Red Lead* is of some small Use in Medicine, because it is drying, and gives a Body to some Oyntments and Plaisters. Painters use it as well for painting Red, as to mix with other Colours to make them dry. Potters use a great Deal to glaze their

their Ware of a reddish Colour; and there are several other Tradesmen that have Occasion for it.

Of White Lead.

White Lead is Pig Lead reduc'd to Leaves, and afterward roul'd as you would do a Sheet of Paper, but so that this roul'd Lead does not touch one upon the other. This *Lead* so roul'd is put upon small Sticks, which are laid in Pots, the Bottom of which is cover'd with Vinegar. These Pots being fill'd must be stop'd, so as that no Air may get in, and afterwards left in a Dunghil for thirty Days together, after which they open the Vessels, and find therein the Lead, become white and brittle; taking then these Leaves out they break them in Pieces, and afterwards expose them to the Air to dry them.

Choice is to be made of such *White Lead* as is brittle, white without and within, in handsome Scales, and with as few blackish Flakes, Dust, and other Impurities as can be.

The *White Lead* has no other Use, that I know of, but for the Painters, being ground with Oil or Water, it being then the most beautiful White that we have, and of the longest Duration, but then it is a very dangerous Drugg, both to grind or to beat to Powder.

Of Ceruse.

Pomet. The true *Ceruse*, or Chalk of Lead, is White Lead in Powder and ground with Water, and afterwards put into Moulds, and so made up into little Cakes, which they dry, and afterwards put into blue Paper, as we find them. This *Ceruse*, so prepar'd, is that which one may call the Chalk of Lead, and not that which we sell at present, that comes from *Holland* or *England*, it being almost all common Chalk, as I am going to relate.

The true *Ceruse* is that which we call the *Venetian*, because the *Venetians* were the first that made it, but as it is extreamly dear, we have little but the other Sort which comes from *Holland*, because the Painters esteem it as much as the *Venetian*, but they are very much in the wrong; for the *Dutch Ceruse* ground with Oil or Water, is a White of no long Duration because of the Chalk that is in it, which does not happen to the true *Venetian Ceruse*, which is only the White Lead ground; so that if one had the true *Venetian Ceruse* there would be no Need of grinding White Lead, and consequently the Danger would be avoided that Persons meet with by grinding it, which often occasions several Diseases, and sometimes Death itself.

If they who have Occasion for *Ceruse* to use in Medicine, or to make Salt of Saturn, would use the true *Venetian Ceruse*, they would find their Operations more perfect: And instead of taking the *Ceruse* in Cake, they might take the White Lead ground and make it serve all their Purposes; but then it must be bought of honest Persons, for none but they who ground it can answer for it: However the true White Lead ground is extreamly white, soft, and friable.

It is remark'd, that the *Hollanders* to make their *Ceruse*, use only the Dust that comes in Bruising their White Lead; and as this Dust could not supply so great a Quantity of *Ceruse* as is us'd in *France*, and other Countries, and they could not otherwise afford it so cheap, they mix a Sort of Marle or white Chalk with it. As for that which comes from *England*, it is still worse than that from *Holland*, because they mix more of that Stuff with it, and it is not of so good a Colour. They who grind the White Lead to make *Ceruse* of it, have Water-Mills, and afterwards they cast it in little Moulds to form it into Cakes, which to have its proper Qualities should be extreamly white, soft, friable and dry, and the least broke or mix'd with little Dust that can be, especially if it be for Sale; you should reject that which has not a good Body, but cracks in handling it, which proceeds from its being made up before it was well dried, or by having been damag'd by some Wet coming to it.

Lemery. *Cerusa*, or *Ceruse*, is a Lead that is penetrated, rarified, and half dissolv'd by the Vapour of Vinegar, and reduc'd into a very white Substance that is heavy and friable. When you wou'd make this *Ceruse*, the Lead is to be beat into fine thin Plates, which are suspended or hung over Earthen Pots, in which they have put Vinegar; and when the Pots are

full of this Lead, they place it in a proper Heat, so that the Vinegar may, by its Fume or Vapour, have Power to penetrate and attenuate insensibly the Matter. After this has remain'd about a Month in the Fume, they open the Mouth of the Pot, and find all the Plates of Lead reduc'd into a white brittle Substance, which they call *White Lead*, and break these Plates into Pieces, which are us'd by the Painters. This White Lead is ground upon a Porphyry, with a little Water, and made into a Paste or Cakes, which being dry'd are fit for Transportation. The Workmen, in this Commodity, chuse to put it up in blue Paper rather than any other, in order to make the *Ceruse* look whiter; the best, the purest and whitest, is brought from *Venice*: That which comes from *England* and *Holland* is mix'd with a Kind of Chalk or Marle, [*as has been observ'd by* Pomet.]

Of Sandix, *or* Red Ceruse.

Pomet. The *Sandix* is nothing but *Ceruse* redden'd over a gentle Fire; but as this *Sandix*, or *Red Ceruse*, serves only to the same Purposes as *Minium*, it is therefore but little used. Some Moderns have writ that Minium, or Red Lead, was made of *Ceruse* turn'd red upon the Fire: But as there is nothing more false, so there are some who write by Hear-say, as is easy to prove: Forasmuch as the *Ceruse* comes from *Holland*, and the *Minium* or *Red Lead* from *England*; and besides, the *Ceruse* is always dearer than the other.

Lemery. *Minium*, or *Sandix*, is the Lead Oar pulveriz'd and made red by a long Calcination over the Fire, and this is brought from *England*, whereof that of the highest Colour ought to be chosen; it is astringent and deficcative, being us'd in Plaisters and Oyntments: They likewise use it in Painting, and to varnish Pots of a red Colour; it is call'd *Minium* from the Word *Mina*, because it is made of the Lead as it comes from the Mine.

Of Masticot.

Pomet. There are three Sorts of *Masticot* that are brought from *Holland*, to wit, the White, the Yellow, and the Gold-colour'd: These different Colours arise from nothing but the different Degrees of the Fire they give the Powder of White Lead, of which they are made. Tho' the first Sort, which is that which has sustain'd the least Degree of Fire, is call'd *White*, yet it is not of a true White Colour, but of a whitish Yellow. The Second is yellow, and endures a stronger Degree, and the Third of a Gold Colour, and has sustain'd more Fire than the former; and they might make a Fourth, by Calcining it 'till it becomes red, which would make it a true *Sandix*, or common Vermillion: As to the Choice of them, they ought to be heavy, in an impalpable Powder, of a high Colour, according to the Appellation they bear of true *Masticot*; they are only serviceable for the Painters, tho' *Lemery* says they are deficcative, and useful mix'd in Plaisters or Oyntments.

Of Natural *and* Artificial Litharge.

The *Natural Litharge*, which the Ancients call'd by the Name of *Molibdæna*, is a Kind of metallick or mineral Body, in Crusts or Flakes, of the Thickness and Figure of White Lead, of a reddish Colour, easie to break, which is found in the Lead Mines: But as this *Litharge* is known to very few People, and is scarce to be met withal, therefore the *Artificial Litharge* only is us'd, which is improperly call'd *Gold* or *Silver Litharge*, because the Ancients, and after them the Moderns, pretend that this *Litharge* serv'd to purifie or refine Gold and Silver, which is far from Truth, since all the *Litharge* we have now from *Poland*, *England*, or other Parts, as *Germany*, *Sweden*, and *Denmark*, is the Lead made use of in refining Copper. Nevertheless, I do not deny but that those who refine Gold and Silver make *Litharge*; but that is not what is sold, because the Refiners melt theirs into Lead again to serve anew, and to recover the little Gold or Silver that was carry'd off with it. These People ought to be undeceiv'd who believe, according to what some Moderns have writ, that *Litharge* is the Fume of Lead evaporated in the Refining of Gold and Silver, and that it is like Soot that sticks to the Chimney: So also these shou'd be undeceiv'd

who

who believe that there is any Difference in the *Litharges* from their Colours, since those are only occasion'd by the Force or Violence of the Fire. The *Dantzick Litharge* is to be prefer'd before the *English*, so likewise that which is most calcin'd, and of a lively Colour, that will easily dissolve in any unctuous Liquors, in which it is usually imploy'd. This Commodity is much us'd in *France*, as well by Potters to glaze their Earthen Wares, Dyers, Painters, and others, as by Apothecaries, who make it the Basis of most Part of their Plaisters and Oyntments.

Lemery. *Lithargyrus, sive Lithargyrium*, or *Litharge*, is a Lead ting'd with the Impurities of *Copper*, and reduc'd into the Form of Dross, or metallick Scum, by Calcination; this is made upon the Purification of Copper in *Poland*, *Sweden*, and *Denmark*: There are two Sorts, one call'd *Lithargyrium Auri, seu Chrysitis*, or *Litharge* of *Gold*; the other *Lithargyrium Argenti*, or *Litharge* of *Silver*; the Difference of Colours makes no Difference in the Virtue of them. There is likewise a *Litharge* made in Refining Gold or Silver by the Cupell, but it is but in small Quantities, tho' like the other. All the Sorts are deficcative, cooling, detersive, and give a Consistence to several Plaisters, for they dissolve in boiling with Oil and fatty Bodies.

Of Salt, *or* Sugar *of* Lead.

Pomet. THE *Salt* or *Sugar* of *Lead* is made of White Lead, and the true *Venetian Ceruse*, infus'd in distill'd Vinegar, then filtred, evaporated, and reduc'd into a light Mass, that is white and chrystalliz'd, of a sweet sugary Taste, yet nevertheless pretty disagreeable. The greatest Part of those who make Salt of Lead, do it with *Dutch Ceruse*, such as we sell, for which Reason they can sell it nothing near so cheap as that made of *Venetian Ceruse*; because, as I said before, the *Dutch* is mix'd with Chalk, which will yield no Salt; and some make it of Lead in Powder, Minium, or Litharge, none of which will afford so much Salt, and consequently can't be sold so cheap: Chuse that which is of the Taste aforesaid, white, in little Shoots, or shining Chrystals, and as light as may be, which when dissolv'd in Plantain Water will look like Whey; which Tryal will answer two Purposes, the One to know the Goodness of the *Salt* of *Lead*, and the Other that of the Plantain Water; its Use is to cool, being given internally or externally, for which Reason it is reckon'd proper to stop the Flux of the Belly, and for sore Throats, taken from three to four Grains in Plantain Water. Most of those who make this Medicine make it heavy and greyish colour'd, which proceeds from the Lead not being well purified, or that it was not made with good Vinegar. For to make the Salt fine and light, it ought to be purified at least four Times.

Of Balsam, *or* Oil *of* Lead.

They call that *Balsam*, or *Oil* of *Lead*, that is made of the Salt dissolv'd in Oil of Turpentine; but others content themselves with putting Salt of Lead in a Cellar to run into a Liquor. The first *Balsam* or *Oil* ought to be prefer'd to the other, in that it is proper to cleanse and cicatrize Ulcers, and because it is more capable of resisting Putrefaction. Others make *Oil* of *Lead*, by drawing a burning Spirit of Lead, which they make by filling two Parts of a Retort with Salt of Lead, and by the Means of Fire, drawing thence a Spirit that burns like Brandy; but as this *Oil* is not so strong as that made with Oil of Turpentine, it serves to cleanse the Eyes, especially of Horses and other Beasts. Spirit of Lead is an excellent Remedy to resist the Putrefaction of Humours.

Of Magistery *of* Lead.

Magistery of *Lead* is made of Salt of the Lead that has the required Qualities, dissolv'd in distill'd Vinegar mix'd with common Water; and by the Assistance of Oil of Tartar *per deliquium*, precipitated into a white Powder, which after it is wash'd and dry'd, is very useful to cure Tetters and Ringworms, being mix'd with some Pomatum: It likewise makes, with Vinegar and Water, a Sort of Virgins Milk, that is good to allay Inflammations and cure Pimples in the Face.

Universitäts- und Landesbibliothek Düsseldorf urn:nbn:de:hbz:061:2-148394-p0187-6 DFG

Of Vinegar *of* Lead.

The *Vinegar* of *Lead* is Vinegar distill'd, wherein have been digested *Ceruse* and other Preparations of Lead, which is made use of to cure Tetters, or being well incorporated with Oil of Roses to make a Kind of Oyntment, call'd *Butter* of *Lead*.

Of Natural *or* Mineral Zink.

It is not with *Zink* as with Tin-glass; forasmuch as 'tis not only probable, but certain, that there is a a *Natural Zink* which the *Germans* call *Beauter*, and the *Flemings Speauter*, we *Spelter*. The *Mineral Zink* is found in great Quantities in the Mines of *Gosselar* in *Saxony*; it is at present very scarce in *France*, for which Reason it is much enquired for by some People. This Metal is a Kind of Lead Oar, except that it is harder, whiter, and more brillant. Some People have assur'd me, that the *Zink* we sell in great square Cakes is cast Mineral *Zink*, that after it has been fined is thrown into Moulds of the Figure as we have it, which I can easily believe, it being impossible to make it of Lead, Arsenick, Tartar, and Saltpeter, as Mr. *Charas* has observ'd. The *Zink*, which some improperly call the *Female Antimony*, ought to be white, in fine Flakes, the least sharp, and the most difficult to break that can be: For the more it endures the Fire, and the finer and larger the Flakes are, the more it is valued by the Workmen that use it, especially the Founders.

The *Zink* at this Time is much in Use, since the Tin-men have found it more proper to clean their Tin than Pin-Dust and Rosin. 'Tis wrong to believe that *Zink* is mix'd with Tin to encrease its Weight; for unto a Fount of five or six hundred Pounds of Tin, they put but one Pound of *Zink*, and which is wonderful, the *Zink* has the Quality of purifying and whitning the Tin, and acting upon it as Lead does upon Gold, Silver, or Copper. This *Zink* is us'd to give Copper the Colour of Gold, especially when mix'd with Turmerick; and works upon Copper as Arsenick does that turns it of a Silver Colour; or the *Lapis Calaminaris* that makes it yellowish; or, lastly, as *Hungarian Vitriol* that turns Iron into a Copper Colour, as hath been observ'd in the Philosophical Transactions of the Royal Society at *London*.

End of the Second BOOK of METALS.

BOOK