

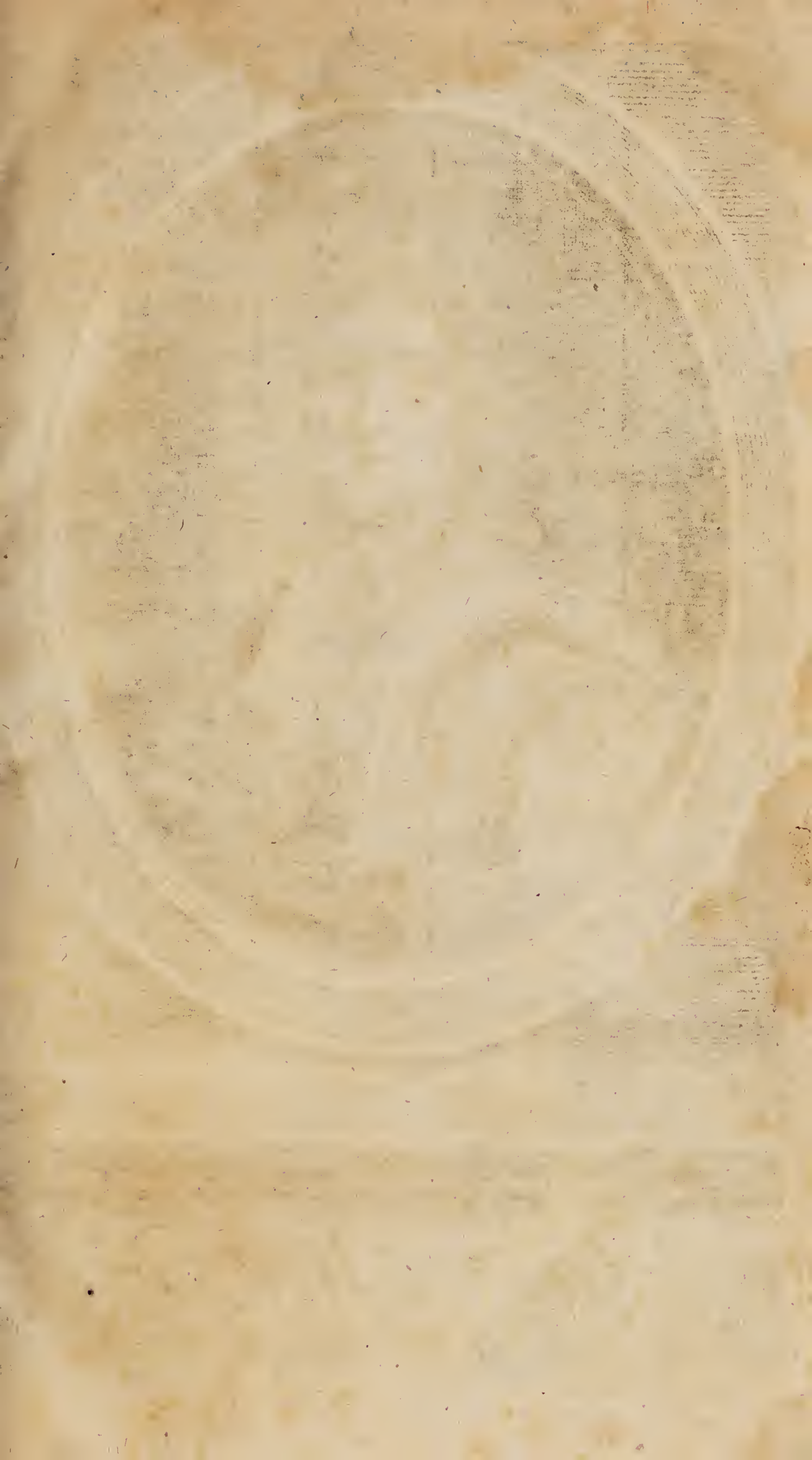
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A
Compleat Course
OF
CHYMISTRY:

Containing not only the Best

Chymical Medicines,

BUT ALSO

Great Variety of Useful

OBSERVATIONS.

The FOURTH EDITION,
Carefully Corrected, very much Enlarged, and
Illustrated with Copper Plates.

To which are added,
The Author's Experiments upon METALS,
by Way of APPENDIX.

By GEORGE WILSON, *Chymist.*

L O N D O N,

Printed for D. BROWNE, at the *Black-Swan* ;
W. MEARS, at the *Lamb* ; and F. CLAY, at the
Bible, without *Temple-Bar*. M. DCC. XXI.





To the Right Honourable

WILLIAM

*Lord Paston, Baron of
Paston, Viscount and
Earl of Yarmouth.*

MY LORD,



THE Kind Reception
I have upon all Oc-
casions met with from
your Lordship, em-
boldens me to lay
the following Papers at your
Feet: not that I pretend to offer

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any

any thing worth your Lordship's Favour; your Experience and Exquisite Skill in whatever relates to *Chymistry*, makes me too conscious to myself how little this deserves your Patronage.

But since I have no other Way left me of acknowledging the many Obligations I lie under to your Lordship, I rather chose to run the Hazard of my Reputation on this account, than pass off the Stage with the Guilt of Ingratitude upon me, who must ever attribute all I now enjoy at home, to the Care and Goodness of your Lordship.

Accept then, my Lord, I beseech you, the sincere, tho weak Endeavours of my Declining Years, and judge not my Respect and Duty by the Meanness of the Performance. The Honour of your Lordship's Approbation will fortify me against Censure: And,
how-

however defective I may seem, yet I have still the Hopes that I may, by this means, incite others to greater and nobler Attempts of this kind, and put them upon a deeper Search into the more close Recesses of this so Useful, but Mysterious Art.

And here, my Lord, I cannot omit, with humble Submission, suggesting to your Lordship, how happy would the present Age be, as well as Posterity, if so great a Genius as your Lordship would please to borrow some few Minutes from your other weighty Affairs, to collect the curious Observations you have made in *Chymistry*, and communicate them to the World: What might we not expect from such indefatigable Industry, and so great a Capacity! Even the admirable *Mr. Boyle*, were he alive, might, with pleasure, see himself out-

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done,

done, in what was his chiefest Darling and Mistrefs.

But I shall wave the Enlargement on this Subject, lest, by attempting to give your just Praises, I should lessen that Character, which all who have the Honour to know your Lordship, must confess you truly deserve.

May your Lordship enjoy a full Measure of Health and Honour; and may After-Ages with Admiration behold your Lordship's Excellent Virtues, shining in a Generous and Noble Posterity; is the earnest Prayer of,

MY LORD,

Your Lordship's

Most Faithful, Humble,

and Dutiful Servant,

George Wilson.



THE
P R E F A C E.



S H A L L not entertain the Reader with an Encomium on the Usefulness of Chymistry, or stop him here,

whilst I enumerate the many great Improvements in other Arts and Sciences which are owing to it: this has been done by many abler Pens than mine.

Yet I cannot but take notice, that from hence our Modern Physicians have the greatest, and (I would persuade myself) the best Part of their
their

their Materia Medica; for I find the Use of Chymical Medicines daily increase, by the constant Approbation of the most Learned in that Noble Faculty: so that now there are very few noted Simples, either in the Mineral, Vegetable, or Animal Kingdom, but what have received some Advantage by Chymistry; and we may reasonably expect frequent Discoveries to the Benefit of Mankind, since Nature herself is the capacious and fertile Subject of our Art.

But to give some Account of the Book, especially of this Fourth Edition: You will find some Processes common to all Operators; and these I have made use of as things necessary to my Design: but even these I have much improv'd, and have annexed to them many new Observations concerning the Way and Manner of working them; which I have found not only convenient,

venient, but, by the Experience of more than fifty Years, sometimes absolutely necessary.

To this Edition I have added above forty Preparations, and carefully corrected and enlarged the former: I have taken care to mention the true Use and proper Dose of each Medicine; and I have so classed all under such General Heads as they naturally belong to; so that nothing be wanting to make this Book answer the Title, and be A Compleat Body of Chymistry.

I have, thro the Whole, studied Brevity; and therefore I have rejected not only the frivolous and useless Trifles of other Chymical Authors, but also have declined Mons. Lemery's pompous Way of Philosophizing upon the Processes. Neither was it my Business to criticize upon that celebrated Author: but let the judicious Reader compare our Methods of Working the
same

same Subject, and he will in some things find a wide Difference, which I am content shall be put to the best of Practice, and then you will soon determine who is in the right.

My Style is intelligible, and that, I think, in relating Matters of Fact, is sufficient; some particular Expressions, as fill halt full, &c. will, I hope, be pardoned; for Dress and Ornament have not been my Care.

As long as God shall give me Health, I shall continue to divert myself in the Laboratory; and what useful Appearances occur, I shall faithfully communicate: for I endeavour all I can, in my Way, to be truly serviceable to the Publick.

It may be objected, that I conceal the Preparation of my Tinctura Anti-Rheumatica. To which I answer:

First,

First, That the learned Physician is abundantly furnished with as good, if not more powerful Medicines, against that cruciating Disease.

Secondly, The diligent Reader may really observe the Preparation of it scattered in this Book, under the various Heads, of which this Tincture is composed.

Thirdly, This Medicine having obtained an uncommon Reputation, it may be a comfortable Support for me and my Family, should I fall once more under the Frowns of Fortune. But, after all, in due time it shall be published.

As to the Appendix: The Experiments were added at the Desire of others, as sceptical in the Doctrine of Transmutation as myself. And truly my long Experience, rather than Speculative Philosophy, has taught me to account for that Accretion of Gold,
men-

mentioned in the sixth Experiment. For (in a word) I believe all base Metals have some minute Particles of the nobler intimately mixed; which, when the base Metal is justly analyzed, are at liberty, and do really join: and this Specifick Union of Particles in all Matter, is perhaps performed by Attraction. Thus, tho I had an Accretion of my Gold, yet my Silver was proportionably diminished.

Men will have Nostrums in their Thoughts; therefore I am not concerned who differs from my Opinion: neither shall I say more upon this Subject, only refer my Reader to the Introduction before the Experiments.



The Introduction.

AS in all Arts and Sciences whatever, there are certain Instruments and Terms of Art necessary to be known, before they can possibly be understood; so in *Chymistry* there are certain Requisites to every Operation, before it can be performed: And these are,

First, The Characters dispersed in Chymical Authors; especillay those most used by Physicians.

Secondly, An Elaboratory; in the erecting of which, Care ought to be taken that there be a good Light, Plenty of Water, and large Chimneys, for the ready Conveyance of obnoxious Fumes.

Thirdly, Instruments and Vessels; and these are of different Sorts and various Figures, according to their severall Uses. You will find the Description of those

those most in use, in the third and fourth Tables.

Fourthly, Furnaces ; which are also of different Forms, some for moist, and others for dry Heats: the moist are *Balneum Mariae*, *Balneum Vaporosum*, &c. The dry are the Sand-Furnaces, Reverberatories, or open Furnaces for naked Fire, &c. which may be seen at large in Chymical Authors. So I content myself with describing those that are necessary ; as in the following Tables.

Fifthly, Lutes.

Sixthly, Degrees of Fire.

Seventhly, Such Terms of Art as you will meet with in Chymical Authors.





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CHEMICAL CHARACTERS

Air	△	Cement	Z
Alembic	XX	Ceruss	⊥ †
Alum	○ ☒	Cinnabar	⊖ ♂
Amalgama	āāā ▲	Cineres Clavellati or pot. Ashes	} ♀
Ana or of each ā an		Chrystal	⊄
Antimony	♁ ⬠ ⬠	Coagulate	HE
Aqua Fontana	∇ ^{on} ∇ ^{Em}	Common Salt	⊖ ⊖
Aqua Fortis	∇ ^F ∇ ^F	Copper or Venus	♀
Aqua Regia	∇ ^R ∇ ^R	Cornu Cervi or Harts horn	} CC
Aqua Rosarum	∇ ^{os}	Crocus Martis	⬤
Aqua Vitæ	∞	Crocus Veneris	⊖ ⊖
Arsenic	∞ ○ ○	Crucible	X U
As much as you please	QP	<hr/>	
As much as you will	QV	Day	♂
As much as is sufficient	QS	Destil	♁ ♀
Ashes	E A	Destill'd Vinegar	† † †
Auripigmentum	⊕ ○ ○	Digest	8 8
<hr/>		Dram	℥
Balneum	B	Drop	g ^t .
Balneum Mariæ	BMMB	<hr/>	
Balneum Vaporis	BV B	Earth	∇
Bole of Armenia	⊕ A	<hr/>	
Borax	∧ ⊔ ∞	Filings of Steel	⊖ →
Brick	□	Filtre	3
<hr/>		Fire	△
Calcine	A Ć	Flowers of Antimony	♁
Calx Viva	∇ CV	Fix	♁ ∇
Caput Mortuum	⊖ ☠		

CHEMICAL CHARACTERS

Gold or Sol ☉
 Glass ☉
 Grain ⚙^r
 Gum ⚙⁺

Half quantity Q s
 Handfull m
 Hour ⚗ ⚗

Ink ☐
 Iron or Mars ♂

Lead or Saturn ♄
 Lime ⊕
 Litharge ⚔
 Lute L

Magnet ☉
 Marcasite ⚙
 Mercury of Saturn ♄
 Month ♃ ☒

Night ☾
 Nitre ☉
 Number n^o

Oil ☉ ⊕
 Ounce ℥

Parts one, } P.I.II.Pα
 two or equal }
 Pound Lib
 Powder P ♂ ☒
 Precipitate ⚔

Pugil P
 Purify ☉ ☾

Quicksilver } ☿
 or Mercury } ♀

Quint-Essence QE
 Retort ☉ ☾

Salt Armoniac *
 Sal Gemma ♂ ⚔
 Sand ⋯

Scruple ⚔
 Silver or Luna ☽ ☾

Soap ⚔
 Spirit sp ⊕
 Spirit of Wine ⚗ ⚗

Stratum Super Stratum S S S
 Sublime ☐ ☉

Sulphur ♁ ♁
 Sulphur Vive ♁

Talk ×
 Tartar ☐ ♃

Tincture R
 Tin or Jupiter ♃

Verdegrease ⊕
 Vinegar +

Vitriol ⊕
 Urine ☐

Water ♁
 Wax ⊕
 Wine V



A

Compleat Course

O F

CHYMISTRY.



Of LUTES.

To defend a Glass in a naked Fire.

TAKE *Yarmouth*-Sand, Scoria of Iron, Tobacco-Pipe Clay, of each one Pound; Glass and sixt Nitre, of each four Ounces; of coarse Tow, cut short, half a Pound; dissolve the Tobacco-Pipe Clay in Water, and beat the Glass and

B Scales

Scales of Iron to fine Powder; then mix all together: beat and work this Mixture well, till it becomes a stiff Paste; spread it upon the Retort with a Knife, the thickness of a Half-crown, to the middle of the Neck of it; let it dry gently, after which you may use it.

With this Lute you may fasten the Receivers in the Distillation of corrosive Spirits; *viz.* Ol. Vitrioli, Spirit of Nitre, Spirit of common Salt, Allum, Aqua Fortis, Aqua Regis, &c.

To Lute Lembecks.

Take Starch, Glue, Flour and Water boil'd, or Flour and Water well beaten together; any of these spread upon slips of Paper will serve: But when you distil, or rectify Spirit of Verdegrease, Vinegar, Tartar, Guaiacum, Box, strong Spirit of Wine, Spirit of Sal Armoniac, or Hart's-Horn, &c. you may use slips of Bladder, or Parchment, dip'd in equal parts of Flour and slack'd Lime, beaten into the Consistence of a Syrup, with the Glear, or White of an Egg.

To fortify crack'd Glasses.

Take the Scrapings of hard *Suffolk*-Cheese and Calx Vive, of each a like quan-

quantity; beat them well together, with the White of an Egg, to the thickness of a Syrup; dip Linen-Rags in this mixture, and lay it presently upon the Crack: Remember you mix no more at a time, than you use in the space of a Minute.

To seal a Glass Hermetically, is to heat the Mouth of the Glass gradually, till it is red-hot and pliable; which you may do either with such a Lamp as the Goldsmiths use to folder with, or by a clear Charcoal-Fire, and with a pair of Pincers (being also red-hot) nip it up so close, that no Air can pass in or out.

There are many other *Lutes*, but these are sufficient to carry on any Chymical Operation.

Of the Degrees of Fire.

TH E several Heats requir'd in Chymical Operations, are as follow;
viz.

Balneum Mariæ, is warm or hot Water. *Balneum Vaporosum*, is the Steam or Vapour of Water. The *Heat of Ashes* is made in sifted Ashes, and the *Sand-Heat* in sifted Sand. There is also a *Heat of Filings of Iron*, a *Reverberating Heat*, or

naked Fire; and lastly, a *Melting Fire*. The *Water, Ashes, Sand* and *Filings of Iron*, are contain'd in proper Vessels, made of Copper or Iron, and placed in Furnaces. The *Reverberating* or *open Fire*, is made in the Furnace we call a *Reverberatory*, or open Furnace.

All these *Heats* have their *First, Second, Third, and Fourth Degrees of Fire*.

The *First Degree*, is a handful of Smal-coal, or three or four Charcoals, of the thickness of a Man's Finger, well kindled.

The *Second Degree*, is six or seven such Charcoals kindled.

The *Third Degree*, is such a one as will make the Fire-place of the Furnace of a Worm-red.

The *Fourth Degree*, is such as will cause the Fire-place of the Furnace to be of a white Heat, or the most extreme Fire you can make.

Of *Dry Heats*, *Ashes* are weakest, *Sand* stronger than *Ashes*, and *Filings of Iron* stronger than *Sand*.

*Of such Terms as are used in
Chymistry.*

A *Malgama* is to mix *Mercury* with *Gold, Silver, Lead, or Tin*, which is to be done thus: First,

First, melt the *Gold, Silver, or Lead, &c.* so that it may but just flow; then heat the *Mercury* till it begins to fume; and by little and little, pour the *Mercury* to the melted Metal, and stir them about with a warm Iron Rod, till they are incorporated. If you would make the *Amalgama* so hard as to beat into a Powder, you must take three parts of the hard Metal, to two parts of *Mercury*: If you would have it so soft as to spread, you must take two or three parts of *Mercury*, to one part of the hard Metal.

Alcohol is to reduce any substantial Matter into an impalpable Powder; also, very high rectified Spirit of Wine, is call'd *Alcohol*.

Cement, is to stratify Lamels of Gold with a Paste, made of one part of Sal Armoniac, two parts common Salt, and four parts Tobacco-pipe Clay, or Tobacco-pipes beaten to powder, moisten'd with a sufficient quantity of Urine: This is call'd the Royal Cement.

Coagulate, is by evaporating Liquids, or by mixing Fluids of different Qualities to cause a more solid Mass.

Circulation, is a Motion given to Liquors, contained in a double Vessel, or circulating Glass, excited by Heat, to ascend and descend.

Cohobate, is to return the Liquor which has been distilled, upon the Matter remaining in the Vessel after the Distillation.

Congeval, is to let a Metal, Wax, or Fat, which is melted, to fix or cool, when taken from the Fire.

Detonation, is a Noise that is made, when the Sulphureous Parts of any Mixture rush forth with impetuosity; it's also call'd *Fulmination*.

Digestion, is some Matter put into a Menstruum, to infuse in a gentle Heat.

Distillation per Ascensum, is when the Fire is to be made under that which is to be distilled.

Distillation per Descensum, is when the Matter which is to be distilled, is placed under the Fire, by which the Spirits are precipitated and forc'd downwards.

Dissolution, is to reduce any hard Body into a Liquor, by the help of a proper Menstruum.

Edulcorate, is to sweeten, or make insipid, some Matter which is impregnated with Salts, by washing it with distilled or Fountain-Water.

Effervesency, is the Ebullition of Liquor, or when two Liquors of a contrary nature are put together, which cause Ebullitions without separating the parts.

Fermentation, is an Ebullition raised by Spirits that endeavour to separate themselves from the Body, but meeting with Earthy Parts that oppose their Passage, they swell, and rarefy the Liquor, till they find their way out. In this Separation of Parts, the Spirits divide in such a manner, as to make the Matter of another nature than it was before.

Filtration, is to purify a Liquor by passing it through a brown Paper; or by laying Stripes of Cotton or Woollen in the Vessel (which contains the foul Water) to the middle of the Stripes, the other Ends hanging over the Vessel, which receives the filtered Liquor.

Fumigation, is to make one thing receive the Fume of another.

Granulation, is to pour a melted Metal through a new Birch-Broom, or Bras or Iron Cullender, into cold Water.

Levigation, is to grind any hard Matter into an impalpable Powder upon a Marble.

Menstruum, is any Liquor capable of dissolving Metals, Minerals, Gums, or any other hard Substance.

Mortification, is to change the outward Form of a Mixture, as *Mercury*; &c. Also Spirits being mix'd with other things which deprive them of their Strength.

Putrefaction, is the Corruption of any mix'd Body whether by the Air, or o-

ther Mixtures, and which always emits a Smell different from the Body before it was corrupted.

Projection, is to put into a hot Crucible, by little and little, any Matter. Also to put a small quantity of something, to a greater quantity of a Metal, to meliorate the Metal.

Rectification, is to distil Spirits after their first Distillation, in order to separate from them such Heterogeneous Matters as have risen with them in their first Distillation.

Reverberation, is to make the Flames of the Fire beat upon the Matter which is reverberated.

Revivification, is to reduce any Preparation of *Mercury* into its Form again.

Sublimation, is to elevate any Volatile Matter into the upper part of such Vessels as contain them, by heat of Fire.

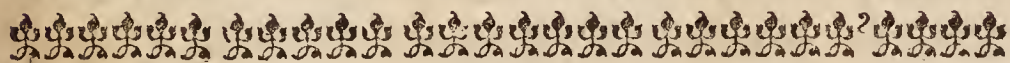
Stratification, is to lay two different things, Bed upon Bed, or Lay upon Lay, one over another.

Precipitation, is to make any Matter dissolved, fall to the bottom of the Vessel, by putting something into the Dissolution, which is more agreeable to the Menstruum.

The Principles of Minerals in the Mines;


(Not to say any thing of the Universal first Matter of things, not Specificate) are

are Argentum Vivum, and Sulphur; out of these two are all generated. All *Mercurial Minerals*, of which there are divers Species, by the Endeavours of Nature, tend to the Perfection of *Gold*; but by different Accidents are hinder'd, or at least retarded in their attaining to the intended Perfection: for according to the Purity, or Impurity of these two, are different Metals produced.



C H A P. I.

Of G O L D.

 O L D, the purest of all Metals, is by Nature generated of a most pure fixed *Mercury*, and a small Quantity of clean fix'd Sulphur, of most pure Redness, which tingeth the *Mercury*. That it is most *Mercurial*, appears by its easy conjunction with, and reception of pure *Mercury*; that this *Mercury* is fixed, and clear from all Operations upon it by Fire: that the Sulphur of it is tinging, is manifest by this, That joined rightly with pure *Mercury*, it transforms, or changes its Colour into a most pure Red.

It is a most noble Subject for Medicine, in the Hands of an expert Artist: witness Dr. *Anthony's Aurum Potabile*,

Purification of Gold.

Put one Ounce of *Gold* into a Crucible; when it is red-hot, put to it Reg. Antimony three Ounces; let them melt together in a strong Fire, till little Sparkles fly about in the Crucible: then cast out the golden Reg. into a little Cone, or let it stand in the Crucible till it is cold; then beat off the Scoria, and put the Reg. into a Crucible, and set it again in the Furnace to melt. When it is in fusion, cast upon it two Drams of Salt-Petre, and a quarter of an hour after that, cast two Drams more of Salt-Petre, and so do the third time, still keeping it melting, till you perceive it emits no Fumes; then pour it into an Ingot, and beat the Scoria off from the Gold. It is then perfectly fine, and fit for any Operation.

There are other Purifications of *Gold*, viz. *per Cupel*, *Cement*, &c. but this is the best.

Amalgamation of Gold.

Take of fine *Gold* half an Ounce, beat it into thin Plates, heat them red-hot in

a Crucible, put to it of clean *Mercury* (first made hot in a Crucible) two Ounces, and stir them about together with a hot Iron-rod till they grow cool; then wash them in a Stone-mortar, with clean Salt and warm Water, till the *Amalgama* will emit no blackness; this done, it is pure: but if it be too soft for your purpose, you may squeeze some *Mercury* from it, through a Diaper-cloth.

If you would reduce the *Gold* into an impalpable Powder, put the *Amalgama* into an unglaz'd Dish or Porringer, place it over a gentle Fire, and the *Mercury* will ascend in a Fume, and leave the *Gold* in an impalpable Powder.

Aurum Fulminans.

Take what quantity of *Gold* you please, in thin Plates, File-dust, or small Granules, put it in a separating Glass, or any other convenient one; pour upon it, by a little at a time, four times its quantity of *Aqua Regis*, or Spirit of Nitre Bezoardick: place the Glass on warm Sand, and let it there continue till all the *Gold* is dissolved; then put the Dissolution into five or six times its weight of clean Water; mix them well by shaking, then drop to the Solution, Oil of Tartar *per deliquium*, or Spirit of Sal Armoniac, made
with

with Salt of Tartar, or Pot-ashes, till the Ebullition is over; then let it stand ten or twelve Hours, for the *Gold* to precipitate, and then pour off the Water by gentle Inclination: wash it with several clean Waters, till the golden Calx is insipid; dry it in a gentle heat, between clean Paper, and keep for use.

Its Operation is Diaphoretick.

Its Dose from five to twenty-five Gr. given in pestilential Fevers, and Small-Pox, with good Success; and it is often given to those who have too much *Mercury* in them.

N. B. That you be careful in drying of it, lest it take fire.

Aurum Potabile, as I prepar'd it for the chief Physician of a great Prince, 1692.

I Dissolved four Ounces of *Gold* (purified as before) in one Pound of Bezoart. Spirit of Nitre, and drew the Spirit from the *Gold* in a Heat of Sand, return'd the same Spirit upon the *Gold*, and distill'd it off again. I made the second Cohobation with the same Spirit, as also the third, fourth, and fifth Cohobation, with one Pound of new Spirit of Nitre Bezoart. and likewise the sixth, seventh, and

and eighth Cohobation, with one Pound more of new Bezoart. Spirit of Nitre.

Whilst I was doing this, I made the Oil of the Chalk thus: I took half a Pound of clean Chalk, scraped it, and dry'd it before the Fire in an Earthen-dish; then put it into a Cucurbit, and pour'd upon it, by little and little, one Pound and half of Spirit of Nitre, which dissolved the greater part of the Chalk. I filtred the Dissolution, put it into a Retort, and distill'd it in Sand; that which distill'd from it, came off almost insipid. I dissolv'd that which remain'd in the Retort, in part of the Flegm which I drew off from it; it left new Feces: I filter'd the Dissolution again, and exsiccated, as before. I dissolv'd it again in the Flegm which came off; it then totally dissolv'd without any Feces: I exsiccated it again, and mix'd of it and the aforesaid Calx of *Gold, ana*, and ground them extremely well together in a clean Marble Mortar, with a Glass Pestle.

I then divided the whole Matter into equal Parts, and with one part I ground double its weight of purified Salt-Petre, and with the other part treble its weight of Sal Armoniac sublimed twice, and its weight of *Stellate Regulus Martis*, in subtile Powder: Each Parcel being well mixt by a long trituration, I put this Mixture
in

in a Retort, placed it in a Sand Furnace, made gradual fire under it for eight Hours, and kept it two Hours longer in the most extreme degree of Fire; the Sal Armoniac rose into the neck of the Retort, so much impregnated with the Sulphur of *Gold*, that it was as red as blood.

The other Mixture of golden Calx and Nitre, I put into a red-hot Crucible, by a quarter of a spoonful at a time, ceasing one Minute between each Projection; when all was in, I gave it a strong melting Fire for three Hours, and before it was cold, made it into Powder, in a clean, warm Iron-mortar, and put it presently into a clean Cucurbit, and put so much highly rectified tartariz'd Spirit of Wine upon it, as to appear four fingers above the Mixture; then inverted another Glass into the mouth of the Cucurbit, to make it a circulating Vessel, and let it stand in a simmering Heat for twenty four Hours, in which time the Spirit of Wine was well tinged: I decanted it, and put on more Spirit of Wine, and let it stand twenty four Hours in the same manner as before, and did so the third time; but then it took but little tincture.

I order'd the sublimed and impregnated Sal Armoniac, with Spirit of Wine, as I did the other; I put the Tinctures of
each

each Parcel apart into Cucurbits, adapted Heads and Receivers to them, and in a gentle Heat drew off the Spirit of Wine, not leaving above eight Ounces in each Glas: both the Tinctures were deeply tinged; of which I gave a part to the Gentleman that employ'd me, who seem'd to receive them with great Satisfaction, and gratify'd me generously.

The Operation of both the Tinctures is diaphoretick, and they are esteem'd great Cordials.

Their Dose is from five to twenty-five or thirty drops, in a Glas of *Spanish* or *French* Wine, or any other Vehicle, even to Water.

They are good in *Cachexies*, *Consumptions*, all sorts of *Fevers*, and to such whose Bodies have been over-charg'd with *Mercurials*.

N. B. The several Cohobations are to subtilize the *Gold*; the calcin'd and purify'd Chalk is mixt with it for a Bole; which by that Purification is subtiliz'd sufficiently to mix with the minute Particles of the *Gold*, the better to make it give forth its Sulphur to the *Menstruum*. In its Fusion with the Salt-Petre, it emits its pure Sulphur into the Nitre, the most gross part falling to the bottom in a *Regulus*.
Its

Its being projected into the Crucible in so little a quantity at a time, and so leisurely, is to prevent its boiling over; which it would do by too hasty Projections.

Its being mixt with clean Sal Armoniac, is to cause its pure Sulphur to sublime; it being the nature of Sal Armoniac, to carry up metallick Sulphurs.

The Tinctures are taken each by themselves, that the Physician may use them alone, or mixt, as he pleases.

When we reduced the *Gold*, we had three Ounces, three Drams, two Scruples, and five Grains, of a little paler Colour than it was at our first dissolution of it.



CHAP. II.

Of SILVER.

Vid. Dr. Brown's (the late very worthy President of the College of Physicians, London)

Acc. of the Sil. Mines at Friburg p. 169, 170, of his Travels.



SILVER, or *Luna*, is generated or produced by Nature, of pure Mercury, and a pure, clean, and fixed white Sulphur; but comes not yet up to the Purity and Fixation of *Gold*, as is evident by its diminution in the Fire, as also of its Sulphur, which is neither fully fixt, nor incombustible: But tho its

Sul-

Sulphur, compar'd with that of *Gold*, cannot properly be said to be fixt; yet with respect to other Metals, it may be call'd fixt and incombustible.

Preparations of SILVER.

Purification by the Cupel.

SET a Cupel, made of Bone-Ashes, in a melting Furnace; make a gradual fire to it, till the Cupel is red-hot; and to every Ounce of Silver you design to purify, put four Ounces of Lead. When it is melted, (or you may put them in together) put in your Silver to the middle of the Test, keeping still a good Fire about it (under a Muffle) till you see the Silver lie like a polish'd Lump in the middle of the Test; then let it cool, and beat it from the Test, and it is perfect, fine, and fit for any physical Preparation.

The Dissolution, and Chrystals of Silver.

TAKE of the cupell'd Silver what quantity you please, put it into a separating Glass, or Cucurbit; and put to it four times its weight of good *Aqua Fortis*: set them in Sand over a gentle Fire, till the Silver is dissolved; then evaporate two thirds of the Liquor, and
C set

set it in a cold place to shoot into Chry-
stals.

The Infernal Stone, or Silver Caustick.

TAke of the Chrystals of Silver one Ounce, put them into a Crucible which is capable of containing five or six times their quantity, by reason they are apt to boil and swell: you must give a very gentle Heat till the Ebullition is over; then increase the Fire a little, till the Silver sinks, and flows like Oil, and cast it into a warm greas'd Ingot Mould: keep it in a Box, with some Cotton, in a dry place.

The Silver Pill.

Dissolve one Ounce of refin'd Silver in three Ounces of Spirit of Nitre, in a Matras; distil off all the Spirit of Nitre to dryness; then dissolve the Matter remaining, in as much Rose-water as it requires; filter and evaporate again to dryness: then take two Ounces of refined Sal Prunella, and grind it well with the Lunar Calx, in a Marble Mortar, with a Glais Pestle, and put to it again as much Rose-water as is fit to dissolve it; filter and evaporate again to dryness. When it is cold, put it again into a Mar-
ble

ble Mortar, and add two Ounces of the finest Wheat-flower; grind them well together, with a sufficient quantity of Rose-water, to make them into Pills of the bigness of a small Pea: when the Pills are form'd, dry them between two Papers, and keep in a wooden Box for use.

Their Operation is Cathartick, and Diuretick.

They are given in all Distempers of the Head, and very successfully in Dropsies.

Their Dose is from half a Pill, to one Pill and an half, or two Pills.

The Precipitation and Tincture of Silver.

Dissolve one Ounce of fine Silver, in three Ounces of Spirit of Nitre, in a Glass Vessel placed upon warm Sand: when it is dissolved, put it into sixteen Ounces of filtred Brine. The Silver will precipitate in a white Powder; let it stand two Hours to settle, then pour off the Water by inclination: wash the Lunar Calx with warm Fountain-water, till it is insipid; then dry it upon clean Paper; when it is dry, put it into a Matrafs, and pour upon it twelve Ounces of Spirit of Wine, to which put half an

C 2

Ounce

Ounce of volatile Salt of Urine; stop the Matrafs with another Glass, fitting its Mouth; lute the Joint with Bladder dipt in the White of an Egg, beaten well with a little Water; then set it in a gentle Heat twelve or fifteen Days, shaking it about once in twenty four Hours; in which time it will have acquired a Sky-colour'd Tincture: when cold, unlute the Glass, filter the Tincture, and keep for use.

Its Operation is Diaphoretick and Diuretick. It is given in *Apoplexies, Epilepsies, Palsies*, and all Distempers of the Head.

Its Dose is from five to twenty-five or thirty Drops, in any proper Vehicle.

The Calx remaining in the Cucurbit, may be reduced into Silver again, by mixing it with equal its weight of Charcoal Dust, and a fourth of its weight of Borax, giving them a good fluxing Fire in a Crucible.

Diana's, or the Philosophical Silver-Tree.

Dissolve one Ounce of fine Silver, in three Ounces of rectified Spirit of Nitre; pour the Dissolution into a Matrafs, in which there is a Pint of clean Fountain-water, and two Ounces of clean crude *Mercury*; let the Matrafs be no bigger

bigger than to contain this Quantity; cover it loosely, to keep out the Dust, and set it by in some place where it may not be moved for five or six Weeks; in which time you will see a representation of a Tree spreading forth its Branches, with little Knobs at their ends resembling Fruit.

Another Curiosity of this Nature may be perform'd, with a Dissolution of Silver in Spirit of Nitre and distill'd Vinegar; but neither of them being of any other Use, this will be sufficient at this time.

Observations.

Make all the Dissolutions of *Silver*, or *Diss.* any other Metal, or Mineral, with *Aqua Fortis*, in a Chimney, to avoid the nitrous Fumes which are hurtful to the Head.

Lead is made use of, to separate such *P.* base Metals as superficially adhere to the *tion* Silver: For being full of sulphureous Parts, it readily absorbs, and sucks up the base Metals, which also abound with foul Sulphurs, and will not permit them to enter the close Pores of the Silver.

22 *A Compleat Course of Chymistry.*

The Test. The Test is made of Bone-Ashes, because these Ashes contain no fix'd Salt; and therefore is porous enough to suck in the Lead, with the baser Metals, which adhered to the Superficies of the Silver.

Chrystal. The Chrystals, or Vitriol of Silver, receive their cathartick Quality from the purify'd Sal Prunella, with which they are mix'd; for the sharp Points of the Spirit of Nitre, which adhere to the lunar Chrystals, are blunted by the Sal Prunella, which makes them slide thro' the Bowels, which otherwise would corrode them, and be as firy a Caustick, as the Infernal Stone.


Precipit. The precipitated *Silver* cannot be totally separated from the nitrous Spirits by washing, therefore the Tincture is not (as some fancy) the pure Sulphur of *Silver* separated from its terrestrious and saline Parts, by the Spirit of Wine, and Salt of Urine; but it is part of the lunar Calx, dissolv'd by the Spirit of Nitre, which sticks to the Particles of the Calx, and so communicates that Sky-colour to the Menstruum: for I have more than once reduced that Tincture into malleable Silver.

*Diana's
Tree.*

The Philosophical Tree, is a Chrystal-ization of the dissolved Metals, which in five or six Weeks time will appear of different Forms, according to the quantity

tity of Water, and Capaciousness of the Vessel which contains it: for, if there be too little Water, it will be a confus'd Lump of Chrystals; if too much, it will fall into a Precipitate.

The Dissolution of *Silver* is several ways precipitated, (*viz.*) by a lixivious, urinous, or common Salt, and by Plates of Copper. And again, Copper will be precipitated by Iron; and that again by *Lapis Calaminaris*; and the *Lapis Calaminaris* will be precipitated by a Lixivium of fix'd Nitre, or Salt of Tartar; and that Lixivium, by Evaporation, will become common Salt-Petre again.



C H A P III.

Of T I N.

TIN is a soft Metal, of a shining blue Colour, containing a Mercury something purer than other ignoble Metals: It is more soft and volatile than Copper or Steel, more fix'd than Lead, and more crude than Silver. All its Preparations are accounted specifick for Diseases of the Liver and Matrix.

Purgation of Tin.

PUT what quantity of Tin you please into a little Pan of Iron; set it over the Fire, and when it begins to melt, put to it some Hog's-Lard, Wax, or Honey; stir them about with a wooden or iron Spatula, and then cast them into hot Water: repeat this two or three times, by which the Tin will be cleansed from some of its foul Sulphur, and made more bright and hard than it was before.

To reduce Tin into a Powder.

ME L T half a Pound in a Crucible, and pour it into a round wooden Box, cover it close, and shake it about till it is cold; some part of it will be in a grey Powder: that part which remains in solid Metal, melt again, and put it in the Box, shaking it as before. Repeat the same Operation, till you have as much of the Tin pulveriz'd as you desire.

Amalgamation of Tin.

ME L T what quantity of Tin you please in a Crucible; put the same quantity of Mercury into another Crucible;

ble; let the *Mercury* stand in the Fire till it begins to crackle and fume; then pour it out to the melted Tin, and stir them about with a small Iron-rod till they are cold. If you would have the *Amalgama* so hard as to beat into Powder, one part of *Mercury* will be enough for two parts of Tin; but if you would have it soft, you may put two parts of *Mercury* to one part of Tin.

Calcination of Tin.

PUT what quantity you please of Tin into an Iron Dripping-pan, place it in a reverberating Oven, and make such a Fire, as to keep it melting red-hot, every now and then stirring of it with an Iron Spatula, full of Holes, the better to break the Tin, and forward its Calcination: this you may continue, till you have a sufficient quantity for your use.

Salt of Tin.

TAKE what quantity you please of the aforefaid calcin'd Tin, and reverberate it yet two or three Hours longer, stirring it all the time, till it becomes more white than it was in the first Calcination: then put it into a Pewter, or Glass Vessel, and to each Pound of the
Calx

Calx of Tin, put ten Pound of distill'd Vinegar; let them stand (now and then stirring them about) in a small Heat of Sand, till the Vinegar has acquired a sweet Taste; then decant and filter the Liquor, and set it to evaporate in a Pewter Bason, and when you see a Film appear upon the Surface of the Liquor, pour it into a Glass Funnel (the Hole of it being stopped with a Cork) and set it in a cool Place to shoot into Salt: You may evaporate and chrystalize the remaining Liquor after the same manner.

Sublimation of Tin.

MIX one Part of Tin with two Parts of clean Sal Armoniac; both being made into fine Powder, and well mix'd, put them into an Earthen Cucurbit, which will endure the Fire; but above two thirds must remain empty: Place it upon an Iron-Bar, in an open Furnace, which must be set nine or ten Inches above the Grate; and a third part of the Cucurbit remain above the top of the Furnace. Inclose the lower part of the Cucurbit with Tiles and Lute, leaving three or four Registers at an equal distance one from another, to give Air to the Fire; then fit to the Mouth of the Cucurbit, two or three Aludels, and a blind

blind Head ; lute them, and kindle the Fire, and increase it gradually, till the lower part of the Pot is red-hot ; in which state keep it, till you perceive the Aludels and Head cool ; then unlute the Aludels carefully, without shaking, and wipe off the Sublimate which adheres to them, and also that which sticks to the upper part of the Cucurbit.

The Magistery of Tin.

Dissolve the aforesaid Sublimate in clean warm Water ; filter the Dissolution, and precipitate it with Spirit of Sal Armoniac, or Oil of Tartar, *per deliquium*. The Precipitate will be very white ; which must be wash'd with several Waters, till the Calx is insipid ; then dry it gently between Papers, and put it up for use.

It is a good Fucus, and used in Pomatums, or Washes.

Flowers of Tin.

TAke one Part of the Powder of Tin, and two Parts of Salt-Peter ; mix them very well ; then have ready an unglaz'd Cucurbit, with a Hole in its middle, by which the Mixture must be projected : Let the Furnace be of a fit
Pro-

Proportion, so that there may be two Inches clear between the Pot and Sides of the Furnace: Place it upon an Iron-Bar, six or seven Inches distant from the Grate; fit it in with Tiles and Lute, as you did in the Sublimation; have also a Stopple fitted to the Hole in the middle of the Pot. When the Pot is fitted into the Furnace, fit to it (and lute the Joints well) three or four Aludels, and to the uppermost, a Head with a Beak, to which a Receiver must be fitted: Kindle the Fire, and when the Bottom of the Pot is red-hot, cast about half an Ounce of the Mixture into the Hole, which presently must be stopp'd; a Detonation will follow: when it is over, project another half Ounce, and so continue (still keeping up the Fire) till all the Mixture is in; then let all cool, and unlute the Vessels carefully, and wipe off the Flowers upon clean Paper; put them in a clean Vessel, and wash them with Fountain-Water till they are tasteless; dry them gently between Paper: when dry, put them up in a Vial for Use. They are very white, and serve for the same Use with the former.

In the Receiver you will find a Nitrous Spirit, and in the bottom of the Pot you will have a hard Lump, which is the grosser part of the Tin, and fix'd
Ni-

Nitre. By boiling or steeping of it in warm Water, you will have the Water impregnated with the Salt-Petre; which you may evaporate to Dryness, or cause it to dissolve *per deliquium*.

The Jovial Calx being wash'd sweet and dry'd, serves to be used in Desiccative Unguents.

Some there are who pretend to order the Flowers, and fix'd Powder of Tin, so as to whiten Copper.

The Gummy Smoaking Oil of Tin.

TAke one Part of Powder of Tin, and three Parts of *Mercury* Sublimate; mix them quickly, and put them in a Retort; place it in Sand, and lute a large Receiver to it; give it a gentle Fire, which will bring over a Smoaking Spirit: when those Fumes decrease, augment the Fire a little, and a Butter or Gum will ascend into the Neck of the Retort; at last, let the Fire be increased two or three Hours, to the fourth Degree, and Crude *Mercury* will ascend with a good part of the Tin, in grey Flowers; separate the *Mercury*, and put all the rest of that which is sublimed, in a Tin-Pan, to dissolve in the Air, into an Oil, *per deliquium*.

Aurum Mosaicum.

TAKE of *Mercury*, Tin, Sal Armoniac, and Flowers of Sulphur, *ana* four Ounces; let them all be made clean, and grind them in a Marble Mortar, till they are perfectly mix'd; then put them into a Bolt-Head, set it in a Sand-Furnace, give it gradual Fire, to the third Degree, in which keep it two Hours; then increase the Fire to the fourth Degree, and keep it so for one Hour longer: when all is cold, break the Glass, you will find a dirty Sublimate; which put away, and the *Aurum Mosaicum* will remain in the bottom of the Matrafs. You must amalgamate the Tin and Mercury, to grind with the Sulphur and Sal Armoniac.

Its *Operation* is Diaphoretick, and is administred against *Hypochondriack* Distempers, *Fits of the Mother*, and the *Veneral Pox*.

Its *Dose* from ten Grains to one Scruple.

Observations.

IT is poured into hot Water, the better to separate the Fat from it, which you mix from it in its Purification.

The Amalgama of Tin and Mercury ought to be wash'd in several Waters warmed, to take away its Blackness.

If you design to make Salt of the calcin'd Tin, you must put it into an Iron flat Pan, and reverberate it two or three Hours longer, till it inclines to a whitish grey Colour.

In its Sublimation, you ought to take care that the Sal Armoniac be clean; otherways some Particles of Dirt, which have accidentally adher'd to the Sal Armoniac, may discolour the Flowers.

In the Precipitation of its Magistery, you may use Spirit of Sal Armoniac, or Ol. Tart. *per deliquium*, indifferently; for they both being Alkalies, weaken the Acid Spirit in the Sublimate, so that it lets fall the Tin which was dissolved by it.

In the Sublimation of its Flowers, I have sometimes used one Part and a half of Salt-Petre to one Part of Tin, and sometimes three Parts of Nitre to one of Tin; but I find by experience, two Parts

Parts of Nitre to one Part of Tin, to be the best Proportion: for if there be too much Nitre, there wants Sulphur, to give Flagration, to raise the Flowers; and if there be too little Nitre, there will not be of the Nitrous Spirit sufficient to raise them. Also note, That where the Powder of Tin is to be used, it is indifferent, whether it be that made by shaking in a Box, or a hard Amalgamation beaten to Powder, or fine Filings of Tin.

Smoaking Spirit.

In your Mixture of Tin and Mercury Sublimate, for the Smoaking Spirit, you must immediately put them into the Retort, otherways they will attract Air, and grow clammy, and be troublesome to put in.

Aurum

Mosaicum.

Its Stench is very offensive, but not pernicious: To avoid the Offence, set it to work in a Chimney. The Degrees of Fire is the greatest Secret in the making this Medicine, which observe thus: Keep it in the first Degree one Hour, in the second Degree two Hours, in the third Degree two Hours, and in the fourth Degree one Hour.

There is also a Magistery of Tin, made by dissolving it in Aqua Regis; Pour four Ounces of the Dissolution into half a Pound of clean Water, it will immediately turn white: let it be in a Vessel
which

which will contain three or four Pints: then put to it (gradually) so much Spirit of Sal Armoniac, till the Ebullition ceases; a white curdy Matter will precipitate; wash that Precipitate with clean Water, till all its Acrimony is gone, and dry it gently. This Magistery will more readily dissolve in distill'd Vinegar, and make a better Salt of Tin, than that Calx made by Calcination.

The Aqua Regis is made of three Parts Spirit of Nitre, and one Part of sublimed Sal Armoniac.

C H A P. IV.

Of LEAD, or SATURN.

LEAD, or *Saturn*, is a foul Metallick Body, and imperfect, composed of an Argent-Vive impure, not fixed, and feculent, somewhat white outwardly, but inwardly red, and of a Sulphur in part combustibile; it wants Purity, Fixation, Colour, and Ignition, yielding to an expert Physician excellent Medicines.

Purification of Lead.

IT is purify'd, by melting with Honey, Wax, or Fat, and pouring them into hot Water, in the same manner as you do Tin.

Calcination of Lead.

IT is calcin'd in an Iron-Pan, being kept red-hot, and stirring with an Iron-Spatula, after the same manner as you did Tin, till it comes to an Ash-colour'd Calx: This Ashy Calx being put to reverberate three or four Hours longer, becomes red, and is called *Red-Lead*, or *Minium*. The *White-Lead*, or *Ceruse*, is made of Plates of Lead, by the Steam of *Vinegar*, after this manner: They put into a glaz'd Earthen-Pot, Plates of Lead, so that they may lie hollow, either by hanging them upon a Wire, or otherways, and setting them in a Bed of *Horse-Dung*, (with a sufficient quantity of *Vinegar* in the Pot) for three Weeks or a Month's time: when they are taken out, beat off what is calcin'd, and put the rest into the Pots again with *New Vinegar*, and order them as before, till all is brought into *Ceruse*. *Lead* is also calcin'd by Spirit of Nitre,
Aqua

Aqua Fortis, Aqua Regis, Spirit of Salt, or any other Corrosive.

Litharge is made by the Refiners, when they refine great Quantities of *Silver*; that which is of a pale Colour, they call *Litharge of Silver*, and that of yellow or red, *Litharge of Gold*. And these have their Colour, according to the Degrees of Fire they have pass'd.

Burnt Lead, or *Plumbum Ustum*, is made by mixing two Parts Lead, and one Part Sulphur (the Lead in Filings, and Sulphur in Powder) put into a Pot, and set in a Fire to burn, as long as any combustible Sulphur is left.

Sugar of Lead.

TAKE of *Litharge*, red or white Lead, what quantity you please; powder it, and put it into a Pewter-Glass or Earthen Vessel, and put to it eight times its Weight of distill'd Vinegar; an Ebullition will appear upon their Mixture: stir them well about; then set them upon a digesting Furnace in Sand; let them stand in Warmth three or four Days, two or three times in a day stirring them well with a clean Stick. When the Vinegar has acquired a Sweet-

ness, pour off the impregnated Vinegar by gentle Inclination, and filter it; then put it to evaporate in a Pewter-Bason, till a Film appears upon the Surface of the Liquor; then put it into a Glafs-Funnel (the small End being stoppt with a Cork) and set it in a cool Place to shoot: When it has stood so twenty-four Hours pull out the Cork, and let the Liquor, which is not coagulated, run from the Sugar of Lead.

This Liquor is called *Honey of Lead*, which you may make into Sugar, by Evaporation and Chryftallization; or keep to make the Balsam or Magiftery, as followeth:

Drop Oil of Tartar, by Dissolution, into the Honey of Lead, and a white Powder will fall to the bottom; which Powder must be washed sweet, and kept for Use: which is the same with Magiftery of Tin.

The Balsam or Butter of Lead, is made by mixing the Honey of Lead with its equal Weight of Sallad Oil; beat them well together, till they are united in the Consistence of a Balsam.

It is used in Scalds and Burns.

The Use of the Sugar of Lead is now universally known. Its Dose internally to half a Scruple.

The Balsam of Lead, with Oil of Turpentine.

PUT what quantity of Sugar of Lead you please into a Matrafs; put upon it four times (some say three times) its Weight of Oil of Turpentine; let them stand in a gentle Heat of Digestion forty-eight Hours, shaking them about three or four times a day: In that time the Oil will be well tinged; pour it off from what remains undissolved, by gentle Inclination: put the impregnated Oil of Turpentine into a Retort, and draw two thirds off in a gentle Heat of Sand; that which remains in the Retort is the Balsam, which keep in a Vial well stoppt for Use.

It is accounted an excellent Medicine for healing and cicatrizing Ulcers: It is also used with good Success in Cancers, they being touch'd with it once in twelve Hours.

The Burning Spirit of Lead.

MI X what quantity of Sugar of Lead you please, with three times its weight of Fuller's-Earth, Powder of
D 3 Bricks,

Bricks, or Tobacco-pipes clean burnt, and beaten to Powder; put them into a coated Retort, of which one third must be empty; place it in an open Furnace, fit a Receiver to it without luting, and make a very gentle Fire under it, to draw off the Phlegm. When the Drops begin to taste, lute well the Joints of the Receiver, and increase the Fire a little, till whitish Clouds come into it; and as you find the Fumes to abate, increase the Fire to the most extreme Degree, till no more Fumes appear in the Receiver; then take off the Receiver, and put all the Liquor into a clean Retort, or a Body with its Head placed in Sand. Lute the Joints well, and make under it a gentle Fire, which will drive over its ardent Spirit in an imperceptible subtle Vapour; after that will rise a Liquor (a little ting'd) which some call *the Yellow Oil of Saturn*, and will appear in little oblique Veins: after that the Phlegm will rise in strait Veins, and in the bottom will remain that which is call'd *the Red Oil of Saturn*. These Substances ought to be separated, by changing the Receiver in the Rectification.

The Burning Spirit is diaphoretick, and is given in the *Plague, Burning Fevers,*
Small-

Small-Pox, and Venereal Pox, and in Hypochondriack Melancholy.

Its Dose is from ten to twenty-five or thirty Drops.

Observations.

THE pouring it into hot Water, is *Purification.* to separate the Fat from it.

It gains weight by *Calcination,* because a greater quantity of igneous Particles *Calcination.* insinuate themselves into the Lead, than the sulphureous ones, the Fire drives out: for in *Calcination,* the Acid of the Fire, joins itself to the Alkali of the Lead, and having driven away its combustible Sulphur, makes a new and incombustible Body.

White Lead also gains in its weight by the acid Particles of Vinegar; and burnt Lead by those of Sulphur.

Any of these Saturnine Calxes will *Salt.* make Salt; but I have found the *Flake-Lead,* as they beat it off the corroded Flakes, to serve best. You may have it at the *Colour-Shops* for 6 *d.* per *lib.*

Pewter Vessels are best both to evaporate and digest the distill'd Vinegar and Lead in; earthen Vessels suck up too much of the Liquor, and in Glass

Vessels it requires more time, and they are in danger of breaking. Besides, its Evaporation in a Pewter bason, makes it shoot better into Chrystals.

*Burning
Spirit.*

I mix Bole with the Salt, to keep it from melting; so it will the better emit its Spirit.

All Calxes of *Lead* may be reduced into solid *Lead* again, by melting with Charcoal-dust and Nitre.



CHAP. V.

Of IRON.



A R S, or *Iron*, is a foul, imperfect Metal, generated of impure Mercury and Sulphur, full of Earth, and strongly united by the nature of its Parts; but wanting Fusion and Weight. However, when it is well prepared, it yields many excellent Medicines, both for internal and external Use.

Preparations of Iron.

Dr. Willis's Preparation of Steel.

TAKE clean Filings of Iron, and Cream of Tartar in fine Powder, of each a like quantity; mix them well, and make them into a Paste, with White-wine. Then set them to dry in the Sun, or other gentle Heat; break it, and if it has not acquir'd a greenish colour, powder it, moisten and dry it again, as before.

Crocus Martis Aperiens.

TAKE Filings of Iron, what quantity you please, moisten them with Rain-water, and dry them in the Sun, or at a gentle Fire; when they are dry, moisten them again, and dry as before: Repeat this five or six times, and the Filings will be in a subtile Powder, which is call'd the opening Saffron of Mars.

You may expose Filings of Iron to the Air, where the Dew may fall upon them, and dry them, as before: this being repeated fourteen or fifteen times, the Mars will be converted into a subtile Powder, which is call'd *Crocus Martis*.

Both these Powders are opening, and given with good Success in the *Green-Sickness, Stoppage of Terms,* and in *Dropsies.*

Its Dose from five Grains, to two Scruples, or fifty Grains.

An opening Crocus with Sulphur.

THis opening *Crocus* is prepared with Sulphur; by mixing equal parts of Filings of Steel, and Sulphur in Powder, and burning them in a flat-bottom'd earthen or iron Pan, continually stirring them with a Spatula, till they come into a subtle Powder, which will be black, and is Steel prepared with Sulphur. This prepared Steel being mix'd with more Sulphur, and fir'd, as before, and continued in Agitation, will acquire a Saffron-colour.

Its Use and Dose, as the former.

A third Aperitive Crocus Martis, is thus made.

TAKE the *Cap. Mort. of Ens Martis,* put it into a large Crucible, set it in a melting Furnace, with a good Fire about it; keep stirring till it has done fuming.

Any

Any of the aforesaid *Crocus's*, after being sprinkled with Vinegar, and being reverberated three or four Hours, are accounted binding, and are given in *Diarræba's*, *Spitting of Blood*, *immoderate Hemorrhoids* and *Terms*.

The *Dose* from fifteen Grains to fifty, or one Dram.

Crocus Martis Astringens.

IT is made by reverberating Filings of Iron, in the Flame of a Wood-Fire, for sixteen or twenty Hours. Some advise to stir it once in two or three Hours; but this is troublesome, and after all, it is no better than those which went before, and useful generally for the same Purposes.

Salt, or Vitriol of Steel.

TAKE four Ounces of Iron, and sprinkle upon, or moisten them with two Ounces of Oil of Vitriol; put them into a Matrass, and let them stand a quarter of an Hour; then put to them twelve Ounces of Fountain-Water by degrees: when all is in, set them in a gentle Heat, to stand twenty-four Hours; then decant
and

and filter the Liquor, which must be evaporated in an Earthen or Glafs-Vessel, till you see a Scum appear: then take it from the Fire, and if you see any yellow Powder in the bottom of the Vessel, decant the clear Liquor from it, into a wide-mouth'd Glafs, and set it in a cool Place, where it may stand twenty-four Hours, to shoot into Chrystals; then pour the Liquor from the Chrystals, to be further evaporated; and so on, till it all shoots into Chrystals.

It is used in all Diseases caused by Obstructions.

Its Dose, from five Grains to one Scruple.

Salt of Steel, by the Sweet Spirit of Vitriol.

TAKE a flat Iron-Pan, turn'd up at the Edges, and put into it so much *Spiritus Vitrioli Dulcis* as will fill it two Fingers: let it stand quietly in some warm Place, till it is coagulated into a Salt; then dry it gently, and keep it in a Vial well stopp'd.

Its Use and Dose is the same with the former.

Ens Martis.

TAKE Filings of *Steel*, one Pound, Sal Armoniac in Powder two Pounds; mix them well, and put them into a Retort, which set in a Sand-Furnace, and give gradual Fire to the fourth Degree: when all is sublimed, let out the Fire, and you will have in the Neck of the Retort, the Sal Armoniac impregnated with the Sulphur of Steel.

Its Operation is Diuretick, and a little Diaphoretick.

It is accounted a Specifick against the Rickets and Worms in Children; also against *Hysterick Fits*, and a great Opener of Obstructions.

Its Dose, from five Grains to one Scruple.

Diaphoretick Steel.

Dissolve the *Ens Martis* in a sufficient quantity of warm Water, filter the Dissolution; and by dropping leisurely the Oil of Tartar *per deliquium* (or Spirit of Sal Armoniac) into the filtred Liquor, a Powder will precipitate: let it settle, and decant the Liquor, and dry the Precipitate.

Its Operation is Diaphoretick and Diuretick, and is given to *Hypochondriacal* Persons, also in *Quartan Agues*.

Its

Its Dose, from ten Grains to half a Dram.

The Tincture of Steel.

TAKE that which remains in the bottom of the Retort, after the Sublimation of *Ens Martis*; powder it, whilst warm, in a warm Mortar; put it presently into a Matrafs, with so much Spirit of Wine as will cover it four Fingers high: let it stand five or six Hours in warm Sand, and it will be tinged of a red Colour. When it is cold, decant it from the Feces, and put it in a Glafs well stopped, for Use.

This *Tincture* is said to be a Specifick against Worms in Children, *Cachexia*, and *Dropsy*.

Its *Operation* is Diaphoretick and Diuretick.

Its *Dose*, from five to fifty Drops.

That which remains after the *Tincture* is extracted, may be reverberated a little; and it is one of the best opening Saffrons of Steel: But the Continuance of its Reverberation three or four Hours, makes it astringent, as 'tis commonly so call'd.

*Another Tincture of Steel, and its
Sweet Salt.*

TAKE half a Pound of Filings without Dust; put it to one Pound and a half of Spirit of Salt; let it stand upon warm Sand twenty-four Hours; then decant and filter the Liquor: Put to the remaining Steel, one Pound and a half more of Spirit of Salt; let it stand, as before, twenty-four Hours; shake it two or three times a day, and in that time, the Steel will be almost all dissolv'd; decant and filter, as before. Put both the filter'd Liquors into a Retort, which place in Sand, and draw off two Pound of the Liquor; then let the Retort cool as soon as you can; but before 'tis quite cold, pour the Liquor from the Sediment, into a Glass, and set it to shoot in a cold Place.

These Chrystals will have a sweetish Taste, and by three or four Dissolutions and Coagulations in the same Liquor, they will acquire a very sensible Sweetness.

This is accounted the best Salt of Steel, and more successfully answers the Intentions of all the rest, and is more pleasant for the Patient to take.

Its *Dose* is the same with the other Salts.

A third Tincture of Mars.

TO make this Tincture, you must draw the first Dissolution (made by Spirit of Salt) to dryness, or till such time the Drops which distil from it, appear yellow; then, to that which remains, put a Quart of distill'd Vinegar, and let it stand twenty-four Hours in warm Sand; in that time it will tinge. Then take off, and decant that red Tincture, and put upon it more distill'd Vinegar; let it stand, as before, and so proceed, till it yields no more Tincture; distil off the Vinegar, to the Consistence of a Syrup, and put to it so much Spirit of Wine, as will cover it four Fingers: set it in warm Sand twenty-four Hours, and it will be tinged; decant that tinged Spirit, and proceed, as long as it will give any further Tincture.

When you have done, take all the tinged Spirits of Wine, and put them into a Cucurbit; set it in a Heat of Ashes, and draw off all the Spirit of Wine, except sixteen or twenty Ounces; which will be a deep and clear Tincture: Put this, when cold, into a Vial, well stopped.

This

This far exceeds the other Tinctures, and is used in the same Cases and Dose.

The Tincture of Steel, with Tartar.

TAKE half a Pound of Rust of Iron; mix with it twenty Ounces of Cream of Tartar in fine Powder; put them into an Iron-Kettle, with eight or ten Pints of clean Water; set them over a Fire; cause them to boil for eight or ten Hours, and stir them often, still supplying hot Water, as it evaporates: Then let the Mixture settle; and whilst warm, filter it, and evaporate to the Consistence of a thin Syrup, in an Earthen Pan.

It is a good aperitive Medicine, and given in the same Cases the others are.

Its Dose, from one Scruple to five, in any proper Vehicle.

The Anodyne Sulphur of Steel.

TAKE of the aforesaid Tincture, extracted, with distill'd Vinegar, and drop upon it, either Spirit of Sal Armoniac, or Ol. Tart. *per deliquium*, so long till you see nothing will precipitate; then let it stand to settle, and decant the Liquor, which is of no use. Pour warm Water upon this Precipitate, and when

E

set

settled, shake it : decant that Water, and put on more ; and so proceed, till the Sulphur has no salt Taste ; then dry it gently, and keep in a Vial, well stopped, for use.

Its Operation is Sudorifick and Anodyne, and is successfully used in the *Gout*, *Rheumatism*, *Scurvey*, all *Fevers*, and the *Small-Pox*.

The Opening Extract of Steel.

TAKE any of the aforesaid Opening Crocus's, four Ounces ; of the Juice of Apples, (ordered as followeth) four Pound ; put them in an Iron-Pan, in a gentle Heat of Digestion in Sand, six or seven Hours ; augment the Heat in such manner, that it may boil very gently, three or four Hours : stir it every quarter of an Hour with an Iron-Slice ; and when you perceive it to be black, take it from the Fire, and let it stand to settle a little : whilst warm, pour it thro a Straining-Cloth, and by gentle Evaporation bring it to the Consistence of an Extract.

It is endued with the same Virtues other opening Chalybeats are.

Its Dose is from half a Scruple to two, or one Drachm.

You

You must put half a Pound of Tamarinds, bruised, to four Pound of the Juice of Apples, and mix them well in an Iron-Mortar ; let them stand twenty-four Hours, in a gentle Heat of Sand ; then strain it through a Cloth, for the Use above said.

The Binding Extract of Steel.

TAKE of the binding *Crocus Martis*, four Ounces ; put to it of Red Port-Wine (wherein half a Pound of the Pulp of ripe Sloes has been mixed and digested, as in the opening Extract) four Pound : Proceed in every thing as in the other Extract, and you have that which they call the *Binding Extract of Steel*.

It is given in *Bloody-Fluxes, Looseness,* and *immoderate Courses.*

The Martial Stiptick Water.

TAKE of our *Lapis Medicament.* two Ounces ; reduce it into a fine Powder ; put it into a Matrafs : pour upon it a Pint of Spring-Water ; set it in a gentle Heat twenty-four Hours ; shake it two or three times ; decant it. To every four Ounces of this clear Infusion,

add one Ounce of our *Tincture of Mars*, and keep it for use.

It cicatrizeth without Pain: The more it is known, the more it will be used.

Tinctura Anti-Phthisica.

TAKE Salt of Steel, and *Saccharum Saturni*, of each four Ounces; put them into a Matrafs with a Quart of good *French Brandy*: let it digest twenty Hours, and you will have a beautiful Tincture.

It is a Specifick in *Hectick Fevers*, and opens Obstructions in Women.

The Dose, from five to fifty Drops.

The Red Flowers of Mars.

Dissolve Filings of Steel in Spirit of Salt; filter the Dissolution; put it into a Retort placed in a Sand-Furnace: draw off the Spirit, till the Drops come yellow; then change the Receiver, and increase the Fire to the fourth Degree. Keep it so till the Drops cease, and no more Fumes appear in the Receiver. When all is cool, you will find a Volatile Sulphur, or Flowers of Steel, in the Neck of the Retort.

If you put half an Ounce of these Flowers into four Ounces of Spirit of Wine, you will have a clear and pleasant Tincture. The Dose, from ten to fifty Drops.

You may keep the Flowers, if you quickly scrape them from the Neck of the Retort, and put them in a Vial, and stop it close.

Elixir Martis.

PUT four Ounces of the *Caput Mortuum* (after raising the red Flowers of *Mars*) into a flat Pan; expose it to the Air, and it will run into a red Liquor. Take of this Liquor, of the Tinctures of Myrrh and Saffron, tartariz'd Spirit of Wine, of each a like quantity.

Purging Salt of Mars.

TAKE Filings of Steel, Sal Armoniac, and Flowers of Sulphur, of each one Pound; grind them well together, and put them into a Worm-red Crucible, Spoonful after Spoonful; keep them stirring with an Iron-Rod, till the blue Flame disappears. With warm Water extract the Salt from the *Crocus*; evaporate the Water, and keep the Salt for Use.

The Dose, from ten Grains to two Scruples.

Tincture of Mars, with Sal Armoniac.

TAKE half a Pound (thorough dried) of the Mass that remain'd, after making the tartariz'd Martial Tincture; add to it, as much Salt-Petre and Sal Armoniac, and two Ounces of Flowers of Sulphur: let them be well mixed and powdered; then put them gradually into a red-hot Crucible; keep them in a Fusion a full Hour; take it from the Fire, and reduce it to a fine Powder, which put quickly into a Matrafs, and pour upon it a Quart of tartariz'd Spirit of Wine. Digest it in a gentle Heat two or three Days, and extract a Tincture.

The Use and Dose, the same with other Martial Tinctures.

Another Tincture of Mars.

TAKE half a Pound of Filings of Steel; put to it (by little and little) Spirit of Nitre four Ounces; presently after, add Oil of Vitriol, three Ounces: Stir them with an Iron Spatula, till they come to a grey Powder; then add (by two or three Spoonfuls at a time) twelve Oun-

Ounces of Spring-Water ; stir it well, and put also (by degrees) into it, ten Ounces of Spirit of Wine. Shake the Vessel, and let it stand in digestion twenty-four Hours, and you will have a strong deep Tincture, that will neither precipitate, nor grow muddy.

The Use the same, but the Dose something less than the former.

Note, Take care the Vessel be large enough.

Epileptic Spirit of Steel.

TAKE *Hungarian* or *Roman* Vitriol, *French* Verdegrease, clean Filings of Steel, of each one Pound ; mix and powder them well ; put them into a glaz'd Earthen-Pan ; pour a Gallon of hot Water upon them, and stir them : when cold and settled, decant the Liquor. To the Matter in the Pan, put two Quarts more of hot Water ; stir and decant as before ; put the impregnated Waters together, and evaporate half : then, with a Lixivium of Tartar, precipitate the Sulphur, or Oker of the Vitriol and Steel ; wash it with hot Water, *f. a.* and dry it. Put this Sulphur into a Matrafs ; to each Ounce of which, add half a Pound of sweet Spirit of Verdegrease. Let it stand in digestion

fifteen Days, shaking the Matrafs two or three times every day; afterwards let it settle, and decant it for use.

The Dose from five to fifty Drops.

Observations.

*Choice of
Mars.*

SOME Authors are of Opinion that *Steel* is the better Subject to work upon, and others give the Preference to *Iron*; but I think 'tis indifferent which we take, since *Steel* is no other than a concentrated *Iron*. I have used them both very often, and never found any difference, either in their Preparation or Operation; only *Steel* (by reason of its Concentration) requires a little more time for its Dissolution.

*To clean
the Mars.*

Always wash the *File-dust* in several Waters, to separate the Dirt which has accidentally fallen into it; the Dirt will swim upon the Surface of the Water, and the clean Filings will sink to the bottom: they are best dried in the Sun.

*Aperitive
Crocus.*

Rain-water and Dew are accounted better than common Water, to moisten the Filings with, because they are impregnated with the Nitre of the Air, which causes a better Penetration, and is more aperitive.

In the Preparation of *Mars* with Sulphur, place the Vessel in a Chimney, the better to avoid those offensive Fumes it emits. Steel prepared with Sulphur.

This Operation requires nothing but diligent grinding, if there be occasion to moisten it a second time. Dr. Willis's Preparation.

Let the Dissolution of *Mars* for its Salt be always made in a Chimney, for the better Convenience of the unpleasant sulphurous Fumes which rise from it; nor fill the Vessel in which you dissolve it, above a quarter full, lest it should boil over. Salt of Steel.

Some prepare this Salt with equal Parts of Oil of Vitriol, and Spirit of Wine; but the Spirit of Vitriol dulcify'd produces a finer Salt. Salt of Mars, with sweet Spirit of Vitriol.

Of Sal Armoniac, we take two Parts to one part of *Mars*, the better to penetrate the Filings, and make a Separation of its volatile Sulphur. Ens Mart.

In this Precipitation of *Mars*, the Diaphoretick and Diuretick Operation proceeds from the Particles of Sal Armoniac which are mix'd with it. Therefore we do not wash this as we do other Precipitates. Diaphoretick Steel.

This Tincture is also impregnated with the Sal Armoniac, which makes it operate by Urine. Tincture of Mars.

*Tincture
of Mars
with Tar-
tar.*

In this Preparation some use crude Tartar, but I rather chuse Cream of Tartar, because its grosser and more earthy Parts are separated, and therefore it makes the better Penetration into the Iron.

*Sweet Salt
of Mars.*

Some there are who make a distinction of the Parts of Iron, affirming that the purer part of it dissolves first, and most easily in an Acid; but I have often try'd that Experiment, and could never find any sensible difference. Most Corrosives are capable of dissolving the whole Body of *Mars*, but the Spirit of Salt more kindly and readily than any other.

*The Tinct.
of Steel,
made with
Spirit of
Salt, di-
still'd Vin.
and Spirit
of Wine.*

This Tincture is thought to be more penetrating and noble than the foregoing ones, because the *Mars* is purify'd by three Dissolutions; (*viz.*) with Spirit of Salt, distill'd Vinegar, Spirit of Wine, and in each Dissolution it leaves new Fæces.

*Anodyne
Sulphur
of Mars.*

This is call'd the Anodyne Sulphur of *Mars*, because it gives ease by quieting the *Archeus*.

*The bind-
ing Ex-
tract.*

The deepest Red-Wine you can get, is best for this Preparation. The astringent Quality of the Sloes do much increase the Virtue of this Medicine.

Notwithstanding all those Preparations which are commonly call'd *Aperitive*, there are some who will not allow any
Pre-

Preparation of *Mars* to be truly such, but that meeting with their proper Acid, in great quantity, as in Diseases of the *Liver* and *Spleen*, they become opening, and sometimes violently purging.

It is made stronger or weaker by a greater or less quantity of Tincture of *Mars*. The Martial Stiptick Water.

If you expose them to the Air, they will run into a blood-red Oil. Both the Flowers and Oil are great Stipticks. The red Flowers of Mars.

Sweet Spirit of Verdegrease is made of equal Parts of Spirit of Wine, and Spirit of Verdegrease distill'd together, as the Sweet Spirit of Nitre. Epilep. Spir. of Steel.

CHAP. VI.
Of COPPER.

VENUS, or *Copper*, is a Metalline Body, foul, imperfect, and generated of an impure *Mercury*: Its Sulphur is earthy, combustible, and of an obscure Red; it wants Fixation, Purity, and Weight; but if handled by an expert Artist, is of great use both for internal and external Medicines.

Puri.

Purification of Copper.

TAKE Plates of *Copper*, of the thickness of a Shilling, lay them *stratum super stratum*, with Powder of Sulphur, in a large Crucible; let the first and last Lays be Sulphur: put them in the Arch of a Glass-maker's Furnace twelve Hours; then take them out, and when they are cold, scrape off what is calcin'd. The rest of the Plates, which the Sulphur has not penetrated, may be again stratify'd and calcin'd as before. This calcin'd *Copper* is called *Æs ustum*.

If you wou'd reduce it into *Copper* again, take the *Æs ustum*, and heat it red-hot in a Crucible, and cast it into an earthen Pan, wherein *Linseed-Oil* is; cover it presently to hinder it from flaming; let it lie in the Oil till it is pretty cool; then take it out, and heat it red-hot, and quench it as before: Do this nine or ten times, every third time putting new Oil. Then take the *Copper*, which looks very fine, and with Charcoal-dust, and Borax, put it into a Crucible; set it in a melting Furnace, give it a strong Fire of Fusion, till it is well melted, then cast it into an Ingot.

Another Purification of Copper.

STratify Plates of *Copper* with common Salt, in a Crucible; calcine it in a Glass-house Fire, as you did the other; scrape all that is calcin'd, and the remaining Plates stratify and calcine, as before: then mix this calcin'd *Copper* with Charcoal-dust, and Borax, put it into a Crucible, and with a very strong Fire, in a melting Furnace, reduce it into a Body, which you may either let cool in the Crucible, or cast into an Ingot that is heated and greas'd.

Chrystals, or Vitriol of Copper.

Dissolve the aforesaid *Copper* in Aqua Fortis, or Spirit of Nitre: To one part of *Copper*, you must put three parts of Spirit of Nitre, by little at a time. Put the Dissolution upon warm Sand, and evaporate one half; set that which remains in the Cucurbit, in a cold place to shoot into Chrystals: the Liquor which remains may be evaporated as the former, and again set to shoot. Dry the Chrystals between Paper, and put them in a Vial stoppt from the Air.

They are a good Caustick to consume proud Flesh.

Other

Other Chrystals of Copper and Verdegrease.

TAKE of Verdegrease in Powder, one Pound; put it into a Matrafs, with four Pounds of distill'd Vinegar; set them upon warm Sand the space of three or four Days, stirring them about three or four times every Day. When 'tis well settled, pour off the blue Liquor by Inclination, and put new distill'd Vinegar to that which remains undissolved, and keep it in the Heat again two or three Days, stirring it about as before; and if the second Extraction be as blue as the first, pour it off by inclination, and put two Pounds more of distill'd Vinegar upon that which remains in the Cucurbit, using the same Method as before. This third Extraction will take all that is dissolvable. This done, put all the impregnated Waters together, and filter them; put them in a clean Cucurbit, and evaporate one half of the Liquor; then take it from the Fire, and before it is quite cold, decant it into a clean Vessel, from the Fæces (which sometimes fall in the Evaporation) and set it in a cool place, where it may stand forty eight Hours, to shoot into Chrystals. Pour the remaining Liquor from
the

the Chryftals, and evaporate again, and fhoot into Chryftals, as you did before.

This is call'd *distill'd Verdegrease*, and is more used by Painters than by Physicians; it is very deterfive, and is sometimes used externally.

Spirit of Verdegrease.

TAKE the Chryftals of *Verdegrease*, with which fill a Retort half full; place it in Sand, giving it a gentle Fire till the Phlegm is distilled. As soon as you perceive the Drops to be acid, change the Receiver, and lute it well with Bladder; then increase the Fire, and the Receiver will fill with white Fumes: when you perceive those Fumes to decrease, augment the Fire, and at last lay kindled Coals round the Neck of the Retort, and keep up the Fire to the highest degree, till the Fumes cease, when the Receiver grows cool: then take off the Receiver, and put the Spirit into a clean Retort, and rectify it in a gentle Heat of Sand; put it out of the Recipient into a Bottle, and stop it close.

It is accounted a good Medicine in the *Palsy*, *Epilepsy*, and *Apoplexy*; and is also

also a good Menstruum to dissolve Pearl and Coral.

The Dose is from five to twenty-five or thirty Drops in a convenient Vehicle.

The Crocus of Copper.

LET the *Cap. Mort.* of the Spirit of *Verdegrease* be beaten to fine Powder, and in an unglaz'd Pot reverberated for ten or twelve Hours, often stirring it with an Iron-rod; then wash off the most subtle Powder from the gross. Dry it, and put it up for Use.

Its Operation is Diaphoretick and Diuretick. It stops bleeding, both internal and external. It is *Anodyne*, and successfully used in *Gonorrhœa's*, by Injection. It is also good against *Looseness* of the *Belly*, and *Dysenteries*.

Its Dose is from five to twenty Grains.

The Tincture of Copper.

TAKE of the reverberated *Crocus*, before it is washed, four Ounces; put it in a Matrafs with Spirit of Salt, twelve Ounces; set it upon warm Sand, to digest, forty-eight Hours; (shaking it about three or four times a day) in which time, the Spirit will receive a red
Tincture:

Tincture: decant the Tincture; put upon the Copper, half a Pound of new Spirit of Salt; digest and shake it, as before; put the tinged Spirit into a clean Retort, and draw to a dry bottom, in the second Degree of Sand-Heat. To that which remains in the bottom, put distill'd Vinegar, twelve Ounces; digest and agitate, as in the former Digestion, you will have a red Tincture, which pour off by gentle Inclination: put to that which remains, half a Pound more of distill'd Vinegar, and digest, as before; then put the Tinctures together, and filter them. Put the filter'd Liquor into a clean Cucurbit, with its Head and Receiver; set it in Sand, and in the second Degree of Fire, let it be drawn to the Consistence of Honey; then put to it, twelve Ounces of tartariz'd Spirit of Wine. Let this Digestion be made in a Circulatory or double Vessel, well luted; give it forty-eight Hours Digestion, with the same Agitation as formerly: decant the tinged Spirit of Wine, and put on more; and so do, till it will extract no more Tincture. Put all the tinged Spirits into a clean Cucurbit; and in a gentle Heat of Sand, draw all off, to about eight Ounces, which put into a Vial, well stopped, for use.

Its Operation is Diaphoretick: It is given in all Diseases of the Head, in Fevers, Small-Pox, and the Venereal Pox.

Its Dose is from ten to fifteen Drops.

Sulphur of Copper.

Dissolve Copper in Aqua Fortis, or Spirit of Salt; filter the Dissolution; precipitate the Sulphur with Oil of Tartar *per deliquium*. When settled, decant the Liquor, wash the Precipitate with warm Water, till it is inspid; then dry it for use.

Observations.

ALL the Feces from which you have drawn the former Tinctures you may save, and reduce them into very fine Copper, in a strong Fire, with Charcoal Dust, Nitre, and Borax.

Purification.

Such Salt, or Sulphur, as you shall find to lie loose between the cemented Plates, after you have taken them from the Fire, you may keep apart, and only scrape off such as stick to the Plates.

Dissolution.

Dissolve the Copper, and evaporate the Dissolutions always in a Chimney, to avoid the obnoxious Fumes.

To


To make the Spirit of *Verdegrease*, al-^{Spirit of}ways chuse the Chrystals; for crude ^{Copper.}*Verdegrease* being mixt with some parts of the Grapes (with which it is corroded) sends forth an Oiliness, from which the Spirit is not easily separated by Rectification.

Sometimes the Reverberation of the ^{Crocus of}Crocus, is as well performed in five or ^{Copper.}six Hours, as it is in twelve Hours, according to the diligence used in keeping up the Fire, and stirring the Matter.



CHAP. VII.

Of MERCURY.

 **M**ERCURY is no other than a Mineral, or a Metallick Water or Liquor, agreeable to all Metals, as their Mother, but more closely adhering to *Gold*, than to any other, by reason of its Purity; and philosophically opened, yields the true Metalline Menstruum, &c.

It is sometimes to be found running in the Veins of the Earth, in the perfect Form of *Quicksilver*; but much the greater quantity of it is drawn from a mine-

ral Stone call'd *Natural Cinnabar*. The Vivification of it into running *Mercury*, I shall give in one of the following Processes.

Purification of Mercury.

IT is separated from such Dirt as has accidentally falln into it, by forcing it through a clean Cloth, or Leather: It is better cleansed by grinding it with Salt and Vinegar, and washing it with warm Water, and continuing so to do, till it blackens not the Salt or Water. But there is yet a better way of purifying it, by putting what quantity of it you please into a Retort, with equal its weight of Salt of Tartar, and the same weight of Calx Vive upon it; place it in a Sand Furnace, and give a gradual Fire, till it is distill'd into the Receiver. Some fill the Receiver half full of Water; but this gives an unnecessary trouble, because the *Mercury* comes not over in Fumes, but drops out of the Neck of the Retort into the Receiver. If you repeat this three or four times, it makes the *Mercury* extreme bright, and pleasing to the Eye, and frees it from all its foul external Sulphur. It is also well purify'd by vivifying it from Sublimate, Cinnabar, or an Amalgama of Gold or Silver.

Artificial Cinnabar.

TAKE of Sulphur one Pound, melt it in an earthen Pan; then put to it by little at a time, three Pounds of crude *Mercury*, stirring them till no *Mercury* appears; then let them cool: powder the Mixture, and put them into an Oval Bolt-head luted, place it over a naked Fire, which increase gradually to the fourth degree, and the Cinnabar will be separated in a Cake above the Fæces.

The Vivification of Cinnabar.

TAKE of Cinnabar one Pound, calcin'd Tartar, or Pot-ashes, one Pound, Calx Vive two Pounds; grind them well together, and put them into a Retort, leaving at least one part of three empty. Place it in a reverberatory Furnace, and fit a Receiver; let it stand twelve Hours, and then kindle the Fire, increasing it gradually to the fourth degree; keep it so till the *Mercury* is rais'd into the Neck of the Retort and Receiver, which will be in seven or eight Hours time.

Then put all the *Mercury* into a clean Diaper Napkin, plac'd over a clean earthen Dish, and squeeze it through to separate from it any heterogeneous Matter

that may have ascended in the Distillation

It is also revived by mixing Cinnabar, one Pound, with one Pound and a half of Filings of Iron, and distilling as before.

The Corrosive Sublimate of Mercury.

TA K E of *Quicksilver* seventy Pounds; of corrosive Sublimate five Pounds; of common Salt, and Nitre, of each fifty Pounds; of rubify'd Vitriol one hundred Pounds; of Caput Mortuum of Aqua Fortis twelve Pounds and a half. The Mercury Sublimate, Common Salt, Nitre, Caput Mortuum, and rubify'd Vitriol, made into fine Powder, and kept each by themselves, are to be mix'd as followeth: The *Quicksilver* and Sublimate must first be mix'd with about a quarter part of the Salts, in a convenient Vessel, by Agitation. This Mixture will grow moist, and part of the *Quicksilver* will incorporate with the Salts. Proceed putting in the Salts (by a quarter part at a time) till all is in, continually stirring, till no part of the *Quicksilver* appear in a running Form: then put to it the Caput Mortuum, which will a little thicken it. When these Ingredients are equally and well mixt, they will become pretty dry, and then you may agitate them through

through a Sieve; and last of all, mix the sifted Powder, and rubify'd Vitriol. Put this Mixture, in equal Proportions, into four subliming Glassess; (the Figure of which, with the Furnace, you will see in the beginning of this Treatise :) Place them in Ashes, fit Heads and Receivers to them, and give a gentle Fire for twenty-four Hours, in which time the *Mercury* will be dissolved, and an *Aqua Fortis* will distil into the Receivers. After that, increase the Fire, and keep it in continually, till you perceive the Sublimate to rise in the Vessel above the Ashes, separated from the *Caput Mortuum*, in form of a Cake, which commonly happens about the fourth or fifth day. When all is cool, carefully remove the Glassess from the Ashes, and take out the Cake of Sublimate, which keep for use.

To make Corrosive Sublimate, in a small quantity.

TAKE two Pounds of Spirit of Salt, one Pound of Spirit of Nitre, put them upon two Pounds of crude *Mercury* in a Retort; place the Retort in a Sand Furnace, and fit a Receiver to it, then give a gradual Fire to the third degree. In eight or ten Hours you will

find two Pounds and a half of Sublimate in the Neck of the Retort.

The Spirit that comes off, will (if you add a third part of Spirit of Wine) serve again for the same Operation.

Mercurius Dulcis, or sweet Sublimate.

TAKE of Corrosive Sublimate one Pound, to which add of purify'd Quicksilver twelve Ounces; grind them well together in a Stone Mortar, with a glass or wooden Pestle, till no Quick-silver appear. Then fill one third part of a Bolt-Head with the Mixture, set it in a Sand Furnace; let the Sand lie half an inch thick between the bottom of the Bolt-Head and the Kettle, filling it up with Sand within an inch of the Neck: stop the Mouth of the Glass with a little Paper, or Cotton-wool; then give fire of the first degree two Hours; increase it to the second, in which keep it three Hours; go on to the third degree, three Hours more, and in that time the Sublimation will be performed. Take it out when cold, and wipe the Sand and Dirt from the Bolt-Head; break the Glass over a clean Sheet of Paper, and separate the Sublimate from the light Flowers at the top, and the
Dust

Dust which lies in the bottom. Afterwards, powder this grossly, and repeat the Sublimation the second and third time. If you sublime it six times, or more, it is called *Calomelanos*.

Its Operation is Cathartick, and is given to kill Worms, and in all Venereal Cases, even to the raising of a Salivation.

Its Dose is from five Grains to one Dram.

Red Precipitate of Mercury.

TAKE Crude Mercury, one Pound, of Aqua Fortis (made as at the end of this Process) two Pounds; let them stand in the Heat of Ashes, that the Aqua Fortis may simmer, till the Flowers begin to appear: then increase the Fire, till the Flowers rise red about the middle of the Glass, and proceed with the Fire to the highest Degree, for the space of three Hours; after which, let all cool, and take out the Precipitate.

It is rarely given inwardly, without Correction: It eats proud Flesh, and is used for the laying open of Shankers. Some Chirurgeons have in the Army used it internally with Success: And I have heard Gentlemen of Probity assert, that they knew an old Quacking Nurse

Nurse give a full Dram to very robust Fellows, in Venereal Cafes, and they have escaped.

The Prince's Powder.

TAKE of red Precipitate (made as before) half a Pound; grind it very well upon a Marble or Porphyry-Stone; put it into a Cucurbit, with two Quarts of Water; place it in a Sand-Furnace, and give it Fire to make it scalding hot: let it stand so twelve Hours, stirring it once in two Hours; then let it cool, and decant the Water. Put this Precipitate into Water a second and a third time, repeating the Operation as before: then dry the Precipitate, and grind it with double the Weight of the Salt, extracted from the Residence of the *Tinctura Metallorum*. Put them into a Cucurbit with Water, proceeding in all things as above, till the Precipitate remains insipid: then dry it, and boil it in Spirit of Wine. Decant the Spirit, when cool, and dry the Precipitate.

It is Emetick and Cathartick, and is given in most Venereal and Chronick Cafes. The Dose, from three Grains to half a Scruple.

Mercury Precipitated with Flowers of Antimony.

TAKE of Mercury (which has been distill'd with Salt of Tartar and Quick-Lime) four Ounces ; grind it with as much Flowers of Antimony as will saturate it ; put it into a Bolt-Head, or an infernal Glass, which place in a Sand-Heat. Continue it so, till it is converted into red Flowers ; which are much more Cathartick than Emetick, and are given in Venereal, and other Chronick Diseases.

The Dose, from three to eight Grains.

An excellent Precipitate of Mercury.

Dissolve four Ounces of Sal Enixum in one Pound of Spirit of Nitre : In this Menstruum, dissolve four Ounces of Mercury ; put it into a Retort, which place in a Sand-Heat ; give it a gradual Fire, till it ceaseth dropping : when cool, take the Retort out of the Sand ; in its bottom you will find a Mass of a pleasant golden Colour. Reduce this into a fine Powder, and put it into a fresh Retort ; then cohobate the drawn Spirit, with four Ounces of new Spirit of Nitre, and distil as before. Repeat it

a third time; take out the Precipitate, and wash it.

I have known this Medicine used with wonderful Success.

The Dose, from two to eight Grains.

The Red Panacea of Mercury.

TAKE what quantity you please of *Red Precipitate*; put it into a Cucurbit; and afterwards, eight times its Weight of Spring-Water: let it stand in a Heat of Sand twenty-four Hours, shaking it three or four times; pour off the Water, and keep it for use. Then dry the Precipitate, and put to it eight times its Weight of Spirit of Wine: fit a Glass to the Mouth of the Cucurbit; lute it well, and set it in a gentle Heat. Let it continue there fifteen Days: shake it often; and after it is cool, pour off the Spirit of Wine by Decantation. Then take the Precipitate, and put it in a *China-Dish*, with twice its Weight of Tincture of Sulphur. Set it on the Fire, and burn off the Tincture; and then put on fresh Spirit of Wine. Let it stand in a very gentle Heat two or three Hours; and after it is settled, decant. Dry the Precipitate, and put it up for Use.

It

It is one of the best *Mercurial Precipitates*, especially in the *Venereal Pox*.

Its Operation is Cathartick, and sometimes a little Emetick.

Its Dose is from two to twelve or fifteen Grains.

The White Panacea of Mercury.

GRIND *Calomelanos* to very fine Powder, and put it into a Cucurbit, with eight times its Weight of Spirit of Wine: place it in warm Sand; let it stand fifteen or twenty Days, and shake it every day two or three times: then fit a Glass to the Mouth of the Cucurbit, to make it a circulating Glass. Separate the Spirit, either by Decantation, or Distillation, and dry the Powder in a gentle Heat. This is called *Panacea Mercurii*.

Its Dose is the same with *Mercurius Dulcis*; and some think it a better and more safe Medicine, because the Spirit of Wine takes from it some of its Corrosive Salts, or at least corrects them.

White

White Precipitate.

Dissolve four Ounces of Mercury in eight Ounces of Spirit of Nitre : when it is all dissolv'd, put it into a wide-mouth'd Glass, in which is a Pint of Spring-Water ; shake them together, and pour on filter'd Brine, by little and little : let the Brine be as strong as you can make it ; to a Pint of which, put in two Ounces of Spirit of Sal Armoniac ; stir the Matter about, and let it settle ; then put on more Brine : stir, and let them stand to settle as before ; and so continue putting on Brine, till you perceive no more will precipitate. Then let it stand five or six Hours to settle, and pour off the Water by Inclination. Put on common Water, stir it about ; and, when settled, decant as before ; and so proceed, putting on fresh Water, stirring and pouring off, till you find the Precipitate insipid. Then lay a clean Paper upon a Chalk-stone ; put the Precipitate upon it, and let it lie there, till the Chalk has absorb'd the Water : then remove it to a Board, and let it dry in the shade, between two Papers.

Its Operation is a little Cathartick, and Emetick sometimes ; it also procures Salivation.

It is given in the *French Pox*, Scurvy, and Yellow-Jaundice.

Its Dose is from five to fifteen or twenty Grains.

If you boil it two or three Hours in Spirit of Wine, it will free it from some of its Corrosive Salts, and render the Medicine more safe.

Turbith Mineral, or Yellow Precipitate.

TAKE four Ounces of Quick-silver; put it into a Retort, and to it, four Ounces of Spirit of Nitre: let it stand till it has done fuming; then add Oil of Vitriol, half a Pound: place the Retort in a Sand-Furnace, give it a gradual Fire to the fourth Degree, and the Operation will be performed in six or seven Hours time. Then take out the Retort, and break it: pulverize the white Mass, either in a Glass, or Marble Mortar; put it into a wide-mouth'd Glass, and pour to it three Pints of warm Water: let it stand two Hours, and shake it three or four times; when it is settled, pour off the Water by Inclination, and keep it by itself. Put more Water to the yellow Powder; stir it well about, and when settled, pour off, as before; and so proceed with several
Ab-

Ablutions, till the Powder has no taste; dry the Powder upon a gentle Heat of Sand, and put it up for use.

The first Washings are good to touch old and stubborn Ulcers with, and to mix with any sweet Water to cure the Itch.

The *Turbith* is Cathartick and Emetick, and is chiefly used in *Veneréal Cases*.

The Dose is from two to eight Grains.

Green Precipitate.

PUT four Ounces of *Mercury* into a Matrafs, to which put of Spirit of Nitre, or double Aqua Fortis; eight Ounces. In another Glas put half an Ounce of fine Copper, which dissolve in an Ounce and a half of Spirit of Nitre, or Aqua Fortis. Put both the Dissolutions together, place them in Sand, and abstract the Aqua Fortis. In the bottom of the Vessel there will remain a blackish Mass, which must be powdered in a glass or marble Mortar. This done, put it into a Cucurbit, and pour upon it four Pints of distill'd Vinegar; set it in a Heat of Sand, where let it continue forty-eight Hours, shaking it once in two or three Hours: at last, augment the Fire to make the

the distill'd Vinegar boil; let it continue so at least one Hour, and when cold, pour off the distill'd Vinegar by inclination, and you will find it tinged of a green Colour; put upon that which remains, more distill'd Vinegar, and proceed as before: filter the tinged Vinegar, and put it into a Cucurbit; set it in a Heat of Sand to evaporate gently, to the consistence of Honey, or that it begins to sparkle; then take it from the Fire, and let it cool; when 'tis cold, it will be an hard Mass, which make into fine Powder, and keep for Use.

Its Operation is cathartick and emetic.

It is a Specifick in *Gonorrhœa's*, and is given in all *Venereal Cases*.

The Dose is from two to six Grains.

Æthiops Mineralis

TAKE Flowers of Sulphur, and crude clean *Mercury*, of each half a Pound; let them be ground together in a clean Iron-mortar, till they are incorporated into a black Powder. It will take up four or five Hours time to grind it.

The Coralline Secret of Mercury.

TAKE four Ounces of *Red Precipitate*, put it into a Retort, and put to it eight Ounces of Spirit of Nitre; set it in a Sand-Furnace, and draw off the Spirit in a gradual Heat, to the fourth degree. This Operation will be perform'd in five or six Hours; return that Spirit of Nitre, with four Ounces of new Spirit upon the Precipitate, and draw off as before: repeat the same Operation, with four Ounces of new Spirit; and at last let it continue at least two Hours, in the fourth degree of Fire: then let all cool, and you will have a very red and subtile Powder; which put into a Crucible, and set in a Fire of Charcoal, but not exceeding a Worm-red, half a quarter of an Hour. Then put it into a Matrafs, and put to it three Pints of distill'd Fountain or Rain-water; set it in a Sand-Furnace, and give it a gradual Fire till it boils; and so keep it half an Hour: pour off that Water by Inclination, and dry the Powder gently; then put to it twelve Ounces of tartariz'd Spirit of Wine, and in a gentle Heat draw it off, and so proceed by two Cohobations: then put to it twelve Ounces of new tartariz'd Spirit of Wine, fit a Glafs to the Mouth
of

of the Cucurbit, to make it circulatory; let it stand in a gentle Heat of Sand forty-eight Hours; and at the last of all, let it simmer a little; then let all cool: decant the Spirit of Wine, and dry the Powder, which is called *Arcanum Coralinum*.

Its Operation is chiefly cathartick.

It is given in the *Gout*, *Dropsy*, *Scurvy*, and the *Pox*; and is one of the best *Precipitates* commonly made.

Its Dose is from three to ten Grains.

Oil of Mercury.

EVaporate the first Washings of *Mineral Turbith* to a Salt, set it in a cold moist place, and it will dissolve into a strong corrosive Liquor, which is call'd *Oil of Mercury*.

It is of excellent Use to touch *Venerereal Shankers*, if you apply to them Pledgets dipt therein.

Another Oil of Mercury.

TAKE four Ounces of Corrosive Sublimate, and of sublimated *Sal Armoniac* half a Pound; make them both into fine Powder, and mix them well;

put them into a Retort, place it in Sand, with a Receiver to it; make a Fire, which raise gradually to the fourth degree, and in seven or eight Hours time the Operation will be done.

Take all that is distilled and sublimed, grind it in a glass or marble Mortar, and afterwards set it in a Cellar, in a flat Glass, to dissolve into a Liquor, which is call'd *Oil of Mercury*.

It is endued with the same Vertues the preceding Oil is.

Observations.

Cinnabar. TAKE care you place the Mixture in a Chimney, that the Stench of the Brimstone do not offend you. And *Note*, that it is sufficient if the Sulphur be kept in just so much Heat as to be fluid, till such time the *Mercury* be incorporated with it.

Revificat. of Cinnab. The Mixture is left twelve Hours without Fire, to give the Calx time to swell gradually, which otherwise might endanger cracking the Retort; and also that the Alcalical Salt may have mortified the acid sulphureous Spirit, by which the *Mercury* was coagulated: which done, the

the *Mercury* will separate more easily. As for putting Water into the Receiver, 'tis a trouble to no purpose; for I have several times reviv'd *Mercury* from an Amalgama of Cinnabar, Sublimate and Precipitate, without one drop of Water in the Receiver.

The Mixture of *Crude Mercury*, Sublimate, Salt, and Nitre, becomes moist, and of a pappish Substance; to which, if you put the rubify'd Vitriol, it would presently grow hard as a Stone, which wou'd be very troublesome to reduce again into Powder: But the Caput Mortuum of Aqua Fortis, or (if you have it by you) some Caput Mortuum of Mercury Sublimate, answers the same end, and brings the Mixture to a temperate Dryness, which by Agitation comes into a Powder of itself. With this Powder the rubify'd Vitriol may conveniently be incorporated, and the Operation ought always to be performed in a Chimney, to avoid the nitrous Fumes, which are very suffocating. You may make the Composition in any quantity your occasion requires; the less your quantity of Mixtures, the less Time and Fire will finish the Operation.

When you grind the Sublimate and crude Mercury together, muffle yourself with a Napkin or Handkerchief, to

*Corrosive
Sublimate.*

*The sweet
Sublimate.*

keep the volatile Atoms, which will rise from the Sublimate, out of your Mouth and Nostrils; and be careful not to make the Fire too big, for too fierce a Fire makes it rise black: and if so, you must sublime it again; and if that Sublimation does not bring it to its Colour, mix with every Pound of *Mercurius Dulcis*, one Ounce and a half of decrepitated Salt, and sublime it again.

*Precipitate
Red Subli.*

The Aqua Fortis which you save in making of Sublimate, is best for this Operation, which also ought to be perform'd in a Chimney. If you take double the quantity of this sublimated Spirit, the *Mercury* will sooner dissolve.

*Red Panacea of
Mercury.*

The Red Precipitate must also be ground very fine before it is wash'd, for the Reason aforesaid. Mr. Barton, an eminent Surgeon of London, kept this as a Secret.

*White Panacea of
Mercury.*

Before you put the Spirit of Wine to it, you must reduce it into a most impalpable Powder, which must be pass'd through the finest Sieve, that so the Spirit of Wine may the better act upon those minute Atoms, and wash off part of the corrosive Salt which keeps it in a dry Form.

*White
Precipitate*

Put not above two Ounces of the Spirit of Nitre at a time upon the Crude
Mer-

Mercury; and when it has acted upon the Mercury, and the Fumes begin to cease, put on two Ounces more; and so do, till the Mercury is all dissolv'd. If you should put all the Spirit of Nitre on at once, the Action would be so violent, that it would heat too suddenly, and endanger the Glass. Be as cautious as you can; the Fumes will rise with some Violence, and therefore this Operation ought always to be done in a Chimney, that the ill Fumes may be avoided.

The Oil of Vitriol does not dissolve *Mineral Turbith.* the Mercury, it only calcines it; but the Spirit of Nitre dissolves it, and produces a Turbith more subtile than that made with Oil of Vitriol alone.

Here is nothing worthy of remark, *Æthiops Mineral.* but to chuse clean and good Ingredients, and to grind so long, till the Medicine becomes very black.

You ought to observe the same Pre- *Green Pre-* caution here, as in the white Precipitate. *cipitate.* viz. to put the Spirit of Nitre upon the Mercury by little and little; and also to perform the Operation in a Chimney.

You may take clean crude Mercury, *Arcanum Corallinum.* instead of red Precipitate, if you please; the first Dissolution and Exsiccation makes it red Precipitate: then you may freely put all the Spirit of Nitre upon

the Precipitate at once; because the Action of the Mercury and Spirit of Nitre is over in the first Dissolution of the Mercury. In all things else, proceed as the Process directs.

Oils of Mercury.

These Oils are Mercury coagulated by the corrosive Spirits of Vitriol, common Salt, and Sal Armoniac, which afterwards will dissolve again like a Salt: It ought to be evaporated in Glass, because Earthen Vessels will suck in too much of the Salt, and it will prey upon the Lead with which the Vessel is glaz'd.

Corrosive Sublimate, in small quantity.

If you desire to make Mercury sublimate in a small quantity, dissolve one Pound of Crude Mercury in eighteen or twenty Ounces of Spirit of Nitre: distil off that Spirit, break the Glass, and take out the Mass; beat it into Powder in a Glass or Marble Mortar; and afterwards, take of Vitriol calcin'd and powder'd, and common Salt, *ana* one Pound: grind them all well together; fill a Matrafs not above half full, and set it on a Sand-Furnace: Increase the Fire gradually to the third Degree, and the Sublimate will all arise in seven or eight Hours.

C H A P. VIII.

Of Bismuth, or Tin-Glass.

IT is a smooth, white, metallick Matter, brittle, and breaks in large Flakes, like *Regulus Martis*. It is artificial, and compos'd of Tin, Tartar, and Arsnick; not made in any quantity in *England*, but in the Northern Parts of *Germany*, from whence we have it.

Preparations of Bismuth, or Tin-Glass.

Flowers of Bismuth, or Tin-Glass.

BEAT the Tin-Glass into very fine Powder; and to four Ounces of it, put half a Pound of Nitre also, in fine Powder: put in that Mixture, by half a Spoonful at a time, into an Earthen Body, perforated in the Side. When the Body is red-hot, and when the Operation is over, take away the Aludels, and wipe off the Flowers with a Feather.

These Flowers are very white, and esteemed an excellent Fucus.

Ma-

Magistery of Bismuth.

PUT one Pound of Spirit of Nitre (made with Oil of Vitriol) into a quart Body uncut and add to it, as much Powder of Tin-Glass, by an Ounce at a time, as the Spirit is capable of dissolving, which will be about seven or eight Ounces: then take two Gallons of Water, and dissolve it in four Ounces of common Salt; filter the Whole, and put it into a clean Earthen Pan; pour upon it the Dissolution of Bismuth, and immediately it will turn milky, and a Precipitate will fall: Permit it to stand, till settled, and by gentle Inclination pour out the Water from the Magistery. Put on more fresh Water; stir it well, and when settled, pour it off: and so continue the Ablutions, till the Magistery is insipid, which dry gently, and keep for Use. And that is the same with the Flowers.

Observations.

Flowers of Bismuth. **L**ET all be sublimed, which will rise from one half Spoonful, before you put in another, which you may know

know by the ceasing of the little crackling: Wash the Salt from that which remains in the bottom of the Subliming-Pot, and it is not only a good Fucus, but also a good Diaphoretick, especially if the Spirit of Nitre be once or twice distill'd from it after its washing.

Its Dose and Virtue is the same with Mineral Bezoar.

Be sure to place the Cucurbit (in ^{Magistry} which you make the Dissolution) in the ^{of Bismuth.} Chimney, the better to convey the Fumes, which are bad for the Breast, Lungs, and Brain: And if you see a black Surface upon the Scum of the Water, when you make the Precipitation, take it off with a Spoon.

C H A P. IX.

Of ANTIMONY.

ANTIMONY is a Mineral Body, nearly related to Metals, but more approaching to the Nature of *Saturn*: It is composed of a Mineral Sulphur, partly pure, and of a Solar Nature;

ture; and partly combustible, like other Sulphurs.

It is full of an indigested fuliginous Mercury, but more fixed than the common. It is a most excellent Subject both for internal and external Medicine, &c.

Regulus of Antimony.

TAKE of Antimony, one Pound; Tartar, twelve Ounces; Nitre, six Ounces; powder them finely, and mix them exactly; then put your Crucible in a melting Furnace: let the Fire increase gradually, till the Crucible is red-hot, before you put in your Mixture; which do by a small Spoonful at a time, till all be in: then increase the Fire, and stop the Door of the Wind-Furnace; and there let it continue in Fusion, half or three quarters of an Hour, till its sparkling in the Crucible is well spent: then pour it into a little Mortar, being first made clean, and afterwards heated, and greas'd with a little Butter, Tallow, or Wax. Let it stand, till cold, and then turn it out; beat off the Scoria, and put it by in an Earthen Pan, to make the *Sulphur Auratum* with; then melt your *Regulus* again, and project one Ounce of Nitre in Powder. Let it stand

stand in a Fusion a quarter of an Hour, and cast it out into the Mortar, heated and greas'd as before, and it will be more pure.

If you would have it yet more pure, repeat the last Operation once more, still saving the Scoria together. This *Regulus* you may form into Cups, Pills, or infuse it in White-Wine ten or twelve Hours, and it will have the same Operation with the Infusion of *Crocus Metallorum*.

Different Quantities are used in the making this *Regulus*: Some take equal Parts of Antimony, Nitre, and Tartar; others, Antimony, one Pound; Tartar, one Pound and a half; and Nitre, two Pounds: But I have found no Composition produce more, or better *Regulus*, than this I have given you.

The Golden Sulphur of Antimony.

BOIL the Scoria of the *Regulus* in twenty times its Weight of Fountain-Water, the space of one Hour; stir it often, and, whilst hot, run it through a fine Straining-Clout; then put distill'd Vinegar to it, and there will precipitate a red Powder: let it stand to settle, and drop more distill'd Vinegar into it; and if it turn the clean Liquor muddy, let it

it

it settle, and drop yet more distill'd Vinegar again into it; and so proceed, till you see the subsiding Liquor will not turn muddy, by putting distill'd Vinegar to it: Wash it with many warm Waters, till it is without Taste or Smell; then put it into a Coffin of Paper, to drain off as much of the Water as you can; and lastly, put it into a flat Earthen Dish, and set it in a gentle Warmth to dry.

It is Emetick and Cathartick, and endow'd with the same Virtues other Antimonial Emeticks are.

Its Dose is from one to six or eight Grains.

The Martial Regulus of Antimony.

TAKE of small Nails, one Pound and a half; put them into a large Crucible, placed upon a Tile in a melting Furnace: let the Fire kindle about them gradually, till the Nails are ready to melt; then project (by a good Spoonful at a time) of Antimony, one Pound; Nitre, four Ounces; and two Ounces of Tartar, powder'd and well mixed: bury the Crucible in Charcoal, shut the Door of the Furnace, and let it stand in the strong

strongest Fusion, till it has done sparkling: then take it from the Fire, and pour it into an Iron-Mortar, hot, and greas'd as usual: When it is cold, beat off the Scoria, and melt it again; and put to it (by a Spoonful at a time) two or three Ounces of Nitre in gross Powder: let it stand in strong Fusion, as before, till it cease to sparkle; then remove it from the Fire, and pour it into a warm Mortar as before. Repeat the same Operation the third and fourth time, always casting in two Ounces of Nitre; but the fourth time, let the *Regulus* melt well, before you put in the Salt-Petre. When cold, beat off the Scoria, and you will see a perfect Star upon the Surface of the *Regulus*.

Its Operation is as the *Regulus Antimonii*, but more Cathartick: Some say it is altogether Cathartick, but I have not found it so.

It is given in the Venereal Disease, Dropfy, and Scurvy.

Its Dose is from two to eight Grains.

*Regulus Jovis, or Regulus of Antimony
with Tin.*

TAKE good *Regulus* of Antimony, four Ounces; melt it in a Crucible, with four Ounces of Tin, a quarter
of

of an Hour; in which time put in one Ounce of Nitre; and when the Flame is spent, and the Matter well flux'd, take it from the Fire, and cast it into a warm greas'd Mortar.

In the same manner you make the *Regulus* of Gold, Silver, Copper, or Lead.

It is usually given in the Suffocation of the Womb, and to open all Obstructions.

Its Dose is from three Grains to a Scruple.

Crocus Metallorum.

TAKE of Antimony, one Pound; Nitre, fourteen Ounces; and common Salt, two Ounces; powder them finely, and mix them well: set a Crucible in the Fire; when it is red-hot, put in the Mixture by a Spoonful at once; when all is in, shut the Door of the Furnace. Let the Matter stand in a strong Fusion half an Hour; then take it from the Fire, and cast it into a warm greas'd Mortar.

Its Operation is Emetick; but the Infusion of it, in White-Wine or Canary, is generally used thus; *viz.* one Ounce of the Crocus in fine Powder, to a Quart
of

of Wine; of which is given, from half an Ounce to four Ounces.

Its Dose is from two to eight Grains.

Diaphoretick Antimony.

TAKE of Antimony, one Pound; of Salt-Petre, three Pounds; powder, and mix them exactly: then put them into a red-hot Crucible, by a Spoonful at a time, and let it stand half an Hour. Remove it before it is quite cold, and put it into a large Earthen-Pan, almost full, either of hot or cold Water: let it remain there ten or twelve Hours, to dissolve the Salt; then take it out, and if any of the calcin'd Antimony adheres to the Crucible, scrape it off with a Knife: stir the white Matter about with a clean Stick; and when it is settled, decant the Water into a clean Pan, and keep it to make the Antimonial *Sal Prunella*. Put on more warm Water, and decant it as useless; repeat the Ablution till the Antimony is insipid. When this is done, put more fresh Water; stir it about, and presently pour it off into another Pan: put on more, and pour off as before; and so do, till all the finest Part of the Preparation is washed off: and by this means, you may separate it

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from the gross dirty Part. Having thus separated the finer Part, let it stand to settle, and pour off the Water by Inclination: put the *Antimonium Diaphoreticum* upon a clean Sheet of whited-brown Paper, and lay it upon a Chalk-Stone, to suck in the Moisture: remove it in a very gentle Heat to be perfectly dried, and put it up for use.

Its Operation is Diaphoretick, and is given in Venereal Diseases, Dropsies, Scurvies, Malignant Fevers, and the Small-Pox.

Its usual Dose is from five Grains to twenty-five, but I have known it given with good Success, by half an Ounce at a Dose, and repeated two or three times in a day, and that for several Days successively.

The first Washing which you put by, may be evaporated, and you will have the *Antimonial Sal Prunellæ*, which is endow'd with the same Virtues as *Sal Polychrestum*.

Tincture of Antimony, with Antimonium Diaphoreticum.

TAKE of *Antimonium Diaphoreticum*, one Pound; of pure Salt-Petre, three Pounds: let them be finely
pow-

powder'd and well mix'd ; then, by a Spoonful at a time, put them into a red-hot Crucible : let it stand half an Hour in a strong melting Heat ; then pour it into a warm Iron-Mortar ; beat it to Powder, and before it attracts the Air, return it into a Matrafs, and add three Pints of tartariz'd Spirit of Wine. Let it digest three Days and Nights, and you will have a glorious Tincture, pleasant to the Taste, very fragrant, and far excelling all other Tinctures of Antimony.

The Dose, from ten to sixty Drops.

Cerufs of Antimony.

IT is made with the Regulus of Antimony and Nitre, in the same Proportion and Manner as you made the *Antimonium Diaphoreticum*.

Its Use and Dose the same.

Or thus :

TAKE of Regulus of Antimony, finely powder'd, four Ounces ; put it into a Retort, and add (by an Ounce at a time) twelve Ounces of Spirit of Nitre ; then shake it, place it in a Sand-Furnace, lute on a Receiver, and give it a gentle Fire, till it begins to drop :

then increase the Fire gradually to the fourth Degree; keep it so till no Drops fall from the Nose of the Retort, or Fumes fly into the Receiver: let it cool, and take out the Remains from the Retort; powder and wash it sweet as you do the other Ceruss, and dry it.

It is Diaphoretick, and is look'd upon to equal Bezoar Mineral in Virtue

The Dose, from ten to fifty Grains.

Antibecticum Poterii.

IT is made of one Part of *Regulus Jovis*, and three Parts of Nitre, beaten into fine Powder, and mixed; and in all things proceed as you did with *Cerussa Antimonii*.

It is administred in the Pox, Hectick Fevers, and Consumptions.

Its Dose is from five Grains to half a Drachm.

The Medicinal Antimony.

ANtimony five Ounces; Salt of Tartar, one Ounce; common Salt, four Ounces; powder and mix them well, and let them stand in the Crucible half an Hour melted; then turn out the

the Compound into a warm greas'd Cone, or let it stand in the Crucible, till cold: beat off the Scoria, and powder the purer Part which remains in the bottom. Give it several Lotions of warm Water, till the Salts are all washed from it; then dry it and keep it for Use.

Some attribute only a Diaphoretick Quality to it; but it will, in some Constitutions, both vomit and purge.

Its Dose is from three to fifteen Grains.

The Magistery of Antimony.

TAKE four Ounces of Antimony, in very fine Powder; put it into a large Matrafs; pour upon it one Pound of Aqua Regis, by four Ounces at a time; set it upon a Sand-Heat in a Chimney, that the Fumes may ascend without Offence: Make a small Fire, and let it stand in a Heat of Digestion ten or twelve Hours, shaking it once in two or three Hours; then let it cool, and put to it a Gallon of Fountain-Water, which you must pour off before it settles. Put to it more Water; stir it, and pour it to the other before it settles. Repeat this Operation, till nothing remains in the Matrafs but a yellow Powder, which is the combustible Sulphur of Antimony. Let the white Powder settle, and decant the

Water, and, by several Ablutions, make the Magistery insipid; dry it and keep it for Use.

Its Operation is more Cathartick than Emetick; sometimes it operates by Sweat.

It is used in Apoplexies, the Palsy, and Hypochondriacal Distempers.

Its Dose is from five to fifteen Grains.

Poterius's *Cordial*.

TAKE *Regulus Martis* in fine Powder, four Ounces; of Gold dissolved in *Aqua Regis*, one Ounce and an half; let the *Aqua Regis* be drawn from the Gold; then mix it with the *Regulus*. Put to the *Gold* and *Regulus* twelve Ounces of Nitre; mix all exactly, and put it into a red-hot Crucible by a spoonful at a time: let it stand in a melting Heat an Hour; then let it cool, and proceed as you did in the *Antihæcticum Poterii*, or *Cerussa Antimonii*: I have made it both with Gold, and the Anodyne Sulphur of *Mars*; and the latter has been approv'd of as the better Medicine.

Its Operation is Diaphoretick, and it is said to be a Purifier of the Blood, a Strengthner of the Heart and Stomach,
good

good against Malignant Fevers, the Small-Pox, and the Plague.

Its Dose is from six Grains to two Scruples.

If to one Ounce of this Magistery you put twelve Ounces of *Spiritus Nitri dulcis*, and let them stand three Days in Digestion in a Matrafs, shaking them now and then, after which draw off the *Spiritus Nitri dulcis*; and if you afterwards put upon it one Pound and a half of Spirit of Wine tartariz'd, and let it stand twenty-four Hours on warm Sand, and decant the Spirit of Wine; and lastly, set it in an Arch of a Glass-House five or six Days; it will have acquired a red Colour, and be more Diaphoretick.

Its Operation is then Diaphoretick, and sometimes a little Cathartick; and I have heard, it has cured the Venereal Pox and Gout, King's-Evil, and Leprosy.

Its Dose the same as before.

The Glass of Antimony.

TAKE a Pound of Antimony, and reduce it into fine Powder, and set it over a gentle Fire; calcine it in an unglaz'd Pan, till it comes to be of an

Ash-Colour, and ceases to fume: you must keep it continually stirring; and if it should run into Lumps, you must powder them again, and then proceed to finish the Calcination. When that is done, put the calcin'd Antimony into a Crucible; set it upon a Tile in a Wind-Furnace; put a thin Tile on the top, and cover it all over with Coals; and when it is brought to Fusion, keep it so in a strong Fire for an Hour; then put in to it an Iron-Rod, and when the melted Antimony which adheres to it, is transparent, pour it upon a smooth hot Marble, and when it is cold, put it up for Use. This is *Vitrum Antimonii*, or *Stibium*.

Its Operation is Emetick, and one of the strongest that is prepared.

Its Dose is from two to eight Grains. It is used in Infusion like *Crocus Metallorum*, and given in the same Cases.

Purging Antimony.

TAKE four Ounces of the Glass of Antimony, finely powder'd; put to it gradually, twelve Ounces of Oil of Vitriol; let it digest forty-eight Hours; distil it in a Sand-Heat; let it cool; then

then wash the Powder *s. a.* till all its Acrimony is lost: dry it, and grind it with an equal Weight of Sal Mirabile, and of Sal Enixum a double Quantity. Put this Mixture into a Crucible, which place in a Wind-Furnace: after it has stood a quarter of an Hour in a gentle Fusion, take it from the Fire; when cold, wash the Powder, dry it, and keep it for Use.

'Tis the most certain Antimonial Purge I ever met with. I have indeed try'd many Processes, which have been confidently delivered to us by several Authors of no small Reputation; but, till I invented this, I never met with one that answer'd my Expectation.

It operates without nauseating the Stomach.

The Dose, from two Grains to half a Scruple.

By the Use of this Powder only, I have known three confirm'd Poxes cured within these two Years.

The Tincture of Metals.

TAKE half a Pound of Regulus Martis; of Spittle-Dust (which is the Scoria, that falls from hot Plates of Cop-

per, quenched in Water) four Ounces; (or the like quantity of Caput Mort. of Spirit of Verdegrease) of Salt-Petre, two Pounds; of Tartar, half a Pound. Powder and mix them well, and put them into a red-hot Crucible by Spoonfuls: after it has stood melting half an Hour, remove it from the Fire, and powder it in a clean warm Mortar. Before it attracts the Air, return it into a Matrafs, and add two Pound of tartariz'd Spirit of Wine: Make a circulating Vessel of the Matrafs, and let it digest two Days; when cool and settled, decant the Tincture.

The Dose, from twenty to an hundred Drops.

White Flowers of Antimony.

PRepare a Set of Subliming Pots, and let the lowermost be of the shape of an Earthen Body; it must be twelve or fourteen Inches high, and its Mouth three Inches diameter: In the middle of this Body must be a Perforation of an Inch and a quarter diameter, exactly fitted with a Stopple of good Earth. Place this upon an Iron-Bar in a naked Furnace, nine or ten Inches above the Grate, and close the Body to the Perforation,

ration, with Lutes and Tiles, only leaving three or four Registers of an Inch and a quarter diameter, at an equal distance. Then fit to it three or four Aludels of Earth, one above another; and upon the uppermost Aludel, fit a Glafs-Head with a Beak: lute the Junc- tures of the Aludels, Body and Head; and to the Beak, fit a small Receiver un- luted.

Kindle the Fire, and when the lower Pot is red-hot, put in of Antimony in Powder, about a Spoonful, with a Latin- ware Scoop made for that purpose: keep up the Fire well, and when you perceive no more Fume to arise into the Head, put in another Spoonful; and so continue, till you have as many Flowers as you desire. When all is cold, take off the Aludels carefully, and with a Feather wipe off the Flowers upon a Sheet of Paper, and put them up for Use.

It is a strong Emetick, and its Violence is such, that it is seldom given without Correction.

It is given to Lunaticks, also in Agues.

Its Dose is from two to five or six Grains.

*Flowers of Regulus of Antimony, with
Sal Armoniac.*

TAKE Regulus of Antimony, and clean Sal Armoniac, *ana* half a Pound; powder and mix them well; and in all things proceed as in making the other Flowers. When you wipe the Flowers from the Aludels, put them into clean Water, to dissolve the Sal Armoniac, and wash the Flowers from the Salt; dry them, and put them up in a Vial for Use.

They are not so violent as the former, and given in the same Cases.

*Antimonium Resuscitatum, or Antimony
Reviv'd.*

TAKE the Flowers of Antimony and Sal Armoniac, without separation; put them into a Cucurbit, and to every four Ounces of these Flowers, put of distill'd Vinegar, one Pound: let them stand upon warm Sand in Digestion, eight Days; then exhale the distill'd Vinegar, and by Ablution sweeten the Flowers, which then will be of the pristine Colour of Antimony, and is accounted a very good Medicine.

Its Operation is Emetick, and sometimes Diaphoretick.

It is administred in the Scurvy, Dropsy, Jaundice, Agues, Fevers, and Consumptions.

Its Dose is from four to ten Grains.

Dr. B's Panacea of Antimony.

TAKE of Antimony, six Ounces; of Nitre, ten Ounces; of common Salt, one Ounce and a half; and of Charcoal, an Ounce: let them all be made into fine Powder and well mixed, and be put into a red-hot Crucible, by half a Spoonful at a time. Continue the Fire a quarter of an Hour after; then either put it into a Cone, or let it cool in the Crucible, and you will find three Substances; *viz.* in the bottom, a little Regulus; above that, a Compact Matter, something like the Liver of Antimony; upon the Surface, a more spungy Mass: separate them from one another, and put by the Regulus. Powder the other two, and wash them apart, till they have no Taste of the Salts: dry them gently, and keep for Use.

The uppermost Substance is accounted the best, and is of a fine Golden-Colour,

lour, when it is washed. The middle Subitance is not of so pleasant a Colour, and works more churlishly. The Regulus is equal with the Regulus of Antimony.

Its Operation is Emetick and Cathartick, and it is given in the Venereal Pox, Gout, Dropsy, Scurvy, and all intermitting Fevers.

Its Dose is from two to five or six Grains.

Note, This is that which Mr. Lockyer aimed at in the Composition of his Pill, by which he got a good Estate.

The Panacæa of Antimony without Fire.

TAKE four Ounces of Antimony; grind it to a most subtile Powder; put it into a Matrafs, and pour it upon one Pound of strong Capital Lees of the Soap-Boilers: set them to digest on warm Sand four or five Days, and shake them often; then add some warm Fountain-Water; shake it well about: let it stand two or three Seconds of Time, and pour it off into a clean Pan. Repeat that Ablution, till all the brown Powder is separated from that which appears like crude Antimony; to which put more
Capi-

Capital Lees, and so proceed in all things as before, till all the Antimony is brought into a subtile brown Powder, which wash well from its Salts; dry it, and keep it for use.

Its Operation is sometimes Diaphoretick, other times Diuretick; and also Cathartick and Emetick.

Its Virtues are the same with other Antimonial Preparations; and it is frequently given as a Succedaneum to that call'd *Russel's Powder*.

Its Dose is from five to twenty or thirty Grains.

*The Butter, or Icy Oil of Antimony,
and its Cinnabar.*

TAKE of Antimony and Mercury Sublimate *ana* two Pounds; powder and mix them well; put them into a coated Retort, which must not be charged above a third part; set it upon an Iron-bar, in a little flat Dish with some Sand in it, in an open Furnace: make a small Fire at first, but increase gradually in the second degree, and the Butter will rise into the Neck of the Retort, which melt into the Receiver with live Coals. Keep the Fire still in that degree,
till

till you perceive the Neck of the Retort tinged red: then change the Receiver, and increase the Fire to the third degree, where keep it two Hours; after that, give two Hours Fire of the fourth, and it will raise the Cinnabar into the Neck of the Retort. When all is cold, take it out of the Furnace, break the Retort, and take out the Cinnabar.

The Butter is only used externally as a Caustick, and is a noble Secret to stop Mortifications.

The Cinnabar is a Diaphoretick; the Dose from six Grains to one Scruple.

The true Cinnabar of Antimony is scarce to be found even amongst Chymists. The Composition of the spurious Cinnabar is as followeth:

Take fifteen Pounds of crude Mercury, five Pounds of common Sulphur, crude Antimony in subtile Powder one Pound and a half, mix them well, *s. a.* and sublime them in a luted Bolt-head in a naked Fire.

This Cinnabar is of a finer Colour, and more easy to be pulveriz'd than native Cinnabar.

Mercurius Vita.

LET the Butter be melted, either by the Air, or a gentle Heat: Put it into a clean Retort, set it in a Sand-Furnace, and by a Fire of the second degree distil it; the Butter will be made more white and pure, and by this Rectification be separated from some dirty Fæces, which will remain in the bottom of the Retort. Melt all the rectify'd Butter into the Receiver, and put to it warm Fountain-water; stir it well with a clean Stick: when 'tis settled, pour off by inclination, and keep the first by itself. Put on more Water, stir, and let it settle; and so do till the Powder is freed from all saltish taste; then dry it gently, and keep for use.

Its Operation is Emetick.

Its Virtues are the same with the Flowers of Antimony.

Its Dose from two to eight Grains.

Mineral Bezoar.

TAKE four Ounces of rectify'd Butter of Antimony; put it into a Retort, and to it twelve or sixteen Ounces of Spirit of Nitre, or Aqua Stygiæ,
I by

by two or three Ounces at a time. Place the Retort in a Chimney, to avoid the hurtful Fumes. When all the Spirit of Nitre is in, and the vehemence of its Action over, put it in a Sand-Furnace; fit and lute a Receiver to it, and give gradual Fire to the third degree. When it ceases to drop, let out the Fire, and when cold, take it out, and keep it in a Glass well stop't from the Air.

Its Operation is Sudorifick; which Operation it performs more sensibly than Antim. Diaphoret.

It is accounted a great Resister of Poison, and given in all Pestilential Distempers.

Its Dose is from ten Grains to two Scruples, even to a Dram.

Some calcine it in a Crucible, after it is taken out of the Retort: Others think it is better to let that part of the Spirit of Nitre it holds, to remain with it.

Oil of Antimony, with Sugar-Candy.

TAKE of Antimony and Sugar-Candy, of each one Pound; let them be well powder'd, and mix'd with three Pounds of clean dry Sand; put them in a Retort, leaving it above half empty; set

set it in a Sand-Furnace, and with a Bladder dipt in the White of an Egg: increase the Fire to the second degree, and so keep it one Hour; then to the third, in which continue it two Hours; and so proceed to the fourth two Hours more, which will finish the Operation. When all is cold, take out the Liquor, and keep for use.

It cleans Ulcers and Tettars; it also kills the Itch.

The Essence of Antimony.

TAKE the Flowers of Antimony, or *Mercurius Vita*, and *Sal Mirabile*, of each one Ounce; of clean Chrystals of Tartar two Ounces; of Sugar-Candy four Ounces; powder and grind them well together, put them in a clean Pan, with three Pints of Spring-water; let them simmer over a Fire for eight or ten Hours, and stir them often. Filter the Liquor while it is warm, and evaporate it in a gentle Heat, to the Consistence of a Syrup: then put to it a Pint of Spirit of Wine; let it stand in Digestion in a Matrafs well stoppt, three Days; in which time it will be well tinged: then by gentle inclination pour off the Tincture into a Body, to which

fit a Head and Receiver, and draw off one half of the Spirit of Wine; that which remains in the Body put into a Vial, and keep for use.

Its Operation is emetick and cathartick, and is given in all Diseases wherein Antimonial Medicines are proper.

Its Dose from five to fifty Drops, in Ale, Wine, Milk, or Water.

The Tincture of Antimony.

PUT half a Pound of Salt of Tartar into a Crucible; set it in a melting Furnace, and heat it till it melts; then put to it (by a spoonful at a time) four Ounces of Antimony in powder; let it stand in a strong melting Heat, the space of one Hour: take it from the Fire, and put it into a warm Mortar; beat it to powder, and whilst warm, put it into a Matrafs; pour upon it tartariz'd Spirit of Wine one Pound, and invert a Glass into the Mouth of the Cucurbit; lute it well, and set it in Digestion three or four Days, in which time the Spirit of Wine will be tinged: take it from the heat, set it on one side to settle, and decant it into a dry Vial, which keep well stop't for use.

Its Operation is Diaphoretick and Diuretick, it opens the Obstructions of Women, is good against Hypochondriack Melancholy, Small-Pox, and malignant Fevers.

Its Dose is from ten to fifty or sixty Drops.

Tinctura Regalis.

TAKE of Copper in little pieces two Ounces, put it into a Crucible, set it in a melting Furnace; when it is red-hot, put to it (in gross Powder) fourteen Ounces of *Regulus Jovis*; let them melt well together the space of a quarter of an Hour; then cast them into a warm greas'd Cone: when cold, beat them into Powder, which must be put (by a Spoonful at a time) into double its weight of melted Salt of Tartar. When it is all in, shut the door of your melting Furnace, and keep it in the strongest Fire you can give for two or three Hours: then take it from the Fire, and pour it into a clean warm Iron Mortar; beat it to Powder whilst warm, and before it attracts any Air, put it in a Matrafs where there is one Pound of Spirit of Wine tartariz'd; lute it as you did the *Tinctura Antimonii*, and in all things proceed as in that Tincture.

Its Operation is Sudorifick and Diuretick; some think it almost an universal Medicine, and indeed I have known it successfully used in several Distempers.

Its Dose is the same with the Tincture of Metals.

The Sulphur of Metals.

TAKE four Ounces of Nitre, of Sulphur two Ounces, and one Ounce of Salt of Tartar; powder and mix them well, then take of the *Regulus* of *Mars* and *Venus* (purify'd by repeated Fusions) four Ounces; powder the *Regulus* also very finely, and mix it exactly with the other Powder. Put the Mixture into a red-hot Crucible, by a quarter of a Spoonful at a time. When it has stood half a quarter of an Hour in Fusion, remove it, and when cold, reduce it into a fine Powder: then put it into a Glass Body, and add two Quarts of Spring-water, set it in a Sand-heat to dissolve the Salt and Sulphur. Filter the Dissolution, and precipitate the Sulphur with any Acid; wash and dry it *s. a.* for use.

This is a true Sulphur of Metals, it is Anodyne and Diaphoretick.

The Dose from five Grains to one Dram.

Obfer-

Observations.

THE melting Furnace must be placed in a Chimney, and have a care you do not bring any Spark of Fire along with the Spoon you project the Mixture with; if you do, it will set all the Composition on fire. *Antimon. Regulus.*

If you do not pass the Liquor through the Strainer while it is hot, it will coagulate when it has past the Filter: and when you precipitate the Sulphur, remove it into some place wherein the Stench may not offend you. You must wash it very often with warm Water, to dissolve the Salts which adhere very strictly to it. *Sulphur Auratum.*

Nails are better than Filings of Iron, because they lie more hollow, giving way for the Antimony to mix and melt more easily with the *Mars.* *Regulus Martis.*

If you give this *Regulus* two or three Fusions more, and in each Fusion cast one Ounce and half of Nitre into it, and do so as long as the Nitre meets with any Sulphur to cause a Flame; the *Regulus* will be as white as Silver. *Regulus Jovis.*

*Crocus
Metal-
lorum.*

I lessen the usual quantity of Nitre, and in its place substitute common Salt, which both helps Fusion, and causes a better Separation of the Crocus from the Scoria.

*Antimon.
Diaphoret.*

You must in this, as in most Calcinations of Antimony with Nitre, be careful not to bring a Spark of Fire from the Furnace to the Mixture; and after Calcination, beware you put not the Crucible into Water, when it is too hot, lest it fly all about your Face.

*Cerussa
Antimon.*

In the *Ceruss* there is no danger of firing the Mixture, because the combustible Sulphur is spent in making the *Regulus*. From this, or any other Antimonial Diaphoretick Powder, you may extract Tinctures.

*Antibeet.
Poterii.*

The *Jupiter* gives it a bluish Colour; and that is all in which it differs from the *Cerussa Antimonii*.

*Antimoni-
cum Medic.*

Let the Salts be very dry when they are mixt with the Antimony, and after they are sufficiently melted together, and become cold, make them into a subtile Powder before you wash off the Salts.

Make

Make the Dissolution in a Chimney, ^{Magister.} and in a large Vessel; because the Ebullition is so violent, that if the Vessel be not large, the Matter will boil over. ^{Antimonii.}

If you will not be at the Charge of ^{Poterius} Gold, in this Preparation, the Anodyne ^{his Cordial,} Sulphur of *Mars* is a good *Succedaneum*.

Its Calcination requires Care and Pa-^{Vitrum} tience; the Fusion must be strong, and ^{Antimon.} the Quantity propos'd in the Process, requires at least two Hours Fire.

This Operation requires Attendance; ^{Flores} for if you let the Heat slacken, you will ^{Antimon.} lose both Time and Fire considerably, before you raise the Flowers again.

If you desire but a small quantity of ^{Flor. Reg.} these Flowers, you may perform the ^{Antimon.} Operation in a Sand-Furnace, by putting the Matter into a Retort, fitting to it a Receiver, and proceeding with gradual Fire, as you do in the Preparation of *Ens Martis*.

If you make this Medicine of the ^{Antimon.} Flowers of Regulus, it will be milder ^{resuscitat.} than that made of crude Antimony, because much of its foul Sulphur is evaporated

porated in the Preparation of the Regulus.

Dr. B's Panacea Antimon.

If you mix ten Grains of the finer sort of this Preparation, with one Ounce of white Sugar-candy, in impalpable Powder, and will make them up into a Mass, you may divide them into an hundred Pills; and one, two, or three of these will work gently by Stool and Vomit. The Mucilage of Gum. Tragac. is proper to make up the Paste.

Panacea sine Igne.

Reduce the Antimony into most subtile Powder, and see that the Capital Lees and Vessel be clean, and you cannot err in this Operation.

Butyrum Antimonii.

When you mix the Sublimate with the Antimony, muffle yourself for a Defence against the Steam of the Sublimate; and also carefully avoid the Fumes of the Butter, when you change the Receiver.

Mercurius Vita.

If you have a Pound of Butyrum, put not above four Pounds of Water to it, for the first Ablution: stir it often with a clean wooden Spatula, to break its Coagulum; then let it stand to settle, and carefully pour off the Water; of which,
by

by Rectification, is made the Philosophick Spirit of Vitriol.

Lute not on the Receiver, till the Violence of the Fumes are over, left when the Fire augments its Motion, it break the Retort or Receiver. Do not exceed the third Degree of Fire, nor let it stand long in, after the Spirit of Nitre is drawn off, to prevent discolouring the *Bezoardicum Minerale*. The Spirit of Nitre being now impregnated with the Spirit of common Salt, which was in the Butyrum, is become an Aqua Regia, and will dissolve Gold, and is called, *Spiritus Nitri Bezoardicus*. *Bezoard.
Mineral.*

The Sand is mixed with the Antimony and Sugar, to hinder the Matter from boiling over, which it would be very apt to do without the Sand: If you would have it freed from its Empyreuma, and fit for internal Use, weigh the Oil and Spirit, and put to it a third part of its Weight of *Spiritus Nitri dulcis*. Set it in a Matrafs, upon warm Sand, in Digestion, four or five Days; then put it into a long-bodied Retort, or Cucurbit, with its Head and Receiver: lute the Joints; give gradual Fire to the third degree, which keep, till it leaves dropping; then put up the Spirit for Use. *Ol. Ant.
cum Sac-
charo.*

It

It is accounted an excellent Remedy against all intermitting Fevers, especially Quartan.

Its Operation is gently Emetick and Cathartick.

Its Dose is from five to fifty Drops.

*Essentia
Antimonii.*

As the Liquor evaporates in boiling, take care to supply it with clean warm Water, till it is fit to be filtred,

*Tinctura
Antimon.*

If you would produce this Tincture in less time than the Process directs, let it stand in such a Heat as will keep the Spirit of Wine simmering, five or six Hours, and the Tincture will be extracted.

In the place of two Ounces of Copper, if you put two Ounces and a half of the Scoria of Copper (which the Brasiers call Spill-dust) you will have a more glorious Tincture.


Some are of opinion, That the Emetick Quality of Antimony is not to be so far destroyed by any Preparation, but that it will return again, when it has been kept for some time, or exposed to Air : but I have kept several of the foregoing Preparations, and especially the
Tinc-

Tinctures, many Years, without any sensible Alteration.



CHAP. X.

Of Lapis Calaminaris.

 T dries, binds, and cleanses; fills Ulcers with Flesh, and is a good Ophthalmick; it incorporates with Copper, and makes Brass. It is found in the North Parts of *Germany*, in the North of *Wales*, and in the West of *England*. Internally it is not much used; although it affords one of the best Emeticks and Diaphoreticks, commonly known.

Preparations of Lapis Calaminaris.

The Magistery of Lapis Calaminaris.

TAKE four Ounces of *Lapis Calaminaris*, beat into fine Powder; put it into a Matrafs, and pour upon it, one Pound of Spirit of Salt: let them digest upon warm Sand forty-eight Hours; filter the Dissolution, and precipitate the Magistery with Spirit of Urine;

Urine ; free it from its Salts, by several Ablutions ; dry it gently, and keep for Use.

Its Operation is Emetick and Cathartick, and is used in all Cases wherein Antimonial Emeticks are proper.

Its Dose is from three to eight Grains.

Diaphoretick Calaminaris.

BEAT four Ounces of *Lapis Calaminaris* into fine Powder ; put it into a Matrafs (which place in a Chimney) and put to it (by three or four Ounces at a time) one Pound of Spirit of Nitre : let it stand, cover'd from Dirt falling into it, twenty-four Hours ; then decant the Liquor, which put into a Retort ; set it in a Sand-Furnace, and give it gradual Heat to the third degree ; and so keep it, till no Drops fall from it. When all is cold, take it out of the Retort, and keep for Use.

It is a good Sudorifick, and answers the Purposes of Antimonial Diaphoreticks. It is also an excellent Collyrium, one Ounce of it being infused twenty-four Hours in half a Pint of White-Wine, and a Drop or two of that Infusion put into the Eye, three or four times a day.

Its

Its Dose is from ten Grains to half a Dram.

Observations.

LET the Spirit of Salt be rectify'd, ^{*Magister.*} because in the first Distillation ^{*Lapis Cal.*} there is mixed with it, a foul Sulphur or Flower, which may discolour the Magistery.

Some Persons will wash the Diaphoret. ^{*Calamin.*} when taken out of the Retort; ^{*Diaphoret.*} others will put to it three times its Weight of tartariz'd Spirit of Wine, and let it stand in Digestion twenty-four Hours, shaking it often, and then let it simmer one Hour, and when cold, pour off the Spirit of Wine, and dry by a gentle Heat the Diaphoretick, which they keep for Use.

It is a good Diaphoretick.

Its Dose is from ten to forty or fifty Grains.

C H A P. XI.

Of VITRIOL.

AT *Friburg* in *Germany*, they take the Ore, out of which *Brimstone* hath been melted, and burn it again in open Air; then putting it into a large Fat, they pour Water upon it, so as to imbibe and drink in the *Vitriol*: This Water is afterwards boiled to a sufficient height, and let out into Coolers, where Sticks are set in it, as in the making of *Sugar-candy*: the purest chrystaliz'd *Vitriol* sticks to the Wood, the rest to the sides and bottom. *Vid. Dr. Brown's Travels*, p. 170, 171.

Of *Vitriols*, we have six sorts vendible among us; *viz. Hungarian, Dantzick, Roman* or *Cyprus, English* and *German*, and likewise *White Vitriol*. It is said, they are all composed of an acid Salt, and *Sulphureous Earth*; but it is most certain, that there is a Proportion of Metal in them, as it evidently appears by rubbing *Dantzick, Hungarian, Roman*, and *White Vitriol*, upon the Blade of a Knife, which they will leave tinged

ged of a Copper-colour. And in *London* it is well known, that most of the old Iron which is gather'd by many poor People, is sold to the Copperas-Houses at *Rotherith* and *Deptford*, which they boil up with the Dissolution of the *Marchasite Pyritis*, or Fire-stone.

In Colour, the *Hungarian* and *Dantzick* are green, but the first is the deeper: The *Roman* or *Cyprus* is blue; the *English* is yet of a paler green than either. The white takes its Name from its Colour. There is also a red Vitriol, which is that of *Germany*, and yet of no great Use amongst us: It is suppos'd to be a green Vitriol, calcin'd by a Subterranean Heat.

The Purification of Vitriol.

ALL Vitriols are made pure by Dissolution, Filtration, Evaporation, and Coagulation, or ChrySTALLIZATION. If you would purify them to the height, you must so often repeat the Operations, that by ten days Digestion between each Dissolution, there will settle no Fæces.

Calcination of Vitriol.

PUT what quantity of green Vitriol you please into an Earthen Pot ; make a gradual Fire under it, and as it heats, it will dissolve : continue the Fire, and increase it, till the Liquor is again coagulated, and the Mass of a greyish Colour.

This is calcin'd Vitriol, fit for some Uses : but if you design it for the Distillation of its Oil, or for *Calcanthum Rubefactum*, you must continue it in a strong Fire, till it is very red.

It is used to stop Blood, being apply'd to the Wound.

The Distillation of Oil and Spirit of Vitriol.

BEAT the Colcothar to Powder, and sift it through a coarse Hair-Sieve ; then put into those Pots called Long-Necks, five or six Pounds a-piece of calcin'd Vitriol, and place them in a Reverberatory Furnace : lute on the Receivers, with Lutes made of Clay, Sand, and cut Flax ; then make a small Fire under the Grate, with Charcoal and Smallcoal ; stop the Fire-hole of the Furnace, and the Ash-hole slighty : let the
the

the Fire smother so six or eight Hours to dry the Furnace and Junctures of the Receivers: then put the Fire upon the Grate, and keep it in the first degree six or eight Hours; increase it to the second, four or five Hours, and so to the third, which will raise white Clouds into the Receiver: continue it so long as you see white Clouds come over; when they begin to abate, augment it to the fourth degree in its Extremity, and continue it till the Vitriol emits no Fumes.

Then let all cool, and carefully take off the Receivers, and put the Distillation into a Retort, which place in a Sand-Furnace; fit a Receiver without luting; make a gentle Fire, which will raise a little insipid Phlegm, which has a sulphureous Smell; put that into a Vial, and stop it. Put on the Receiver again, and continue the second degree of Fire, and so pass on to the third, which continue till Fumes rise into the Receiver, and you perceive the Oil in the Retort to be clear and white as Rock-water: then let all cool, and put the Spirit by itself, and the Oil left in the Retort by itself also.

The sulphureous Spirit is given in Pal-

Spirit is commonly mixt with Juleps. In Physick, the Oil is of the same Use as that of the Spirit, in an eighth or tenth part the Dose.

Gilla Vitrioli, commonly call'd, Salt of Vitriol.

Dissolve what Quantity of white Vitriol you please in warm Fountain-water, filter it, and let it stand warm twenty-four Hours to settle its Fæces: decant it off from the Sediment, and evaporate it to a Pellicle in an earthen Pan. If you see still some yellow Fæces at the bottom of the Pan; pour it out into a clean Vessel by gentle inclination, and set it two or three days in a cold place to shoot into Chrystals.

Its Operation is Emetick.

Its Dose from ten Grains to one Dram.

There is a Salt extracted with warm Water out of the Caput Mortuum of the Oil of Vitriol, which is very little (if at all) in use.

*The Compound Cathartick Salt of Vitriol,
and its Sulphur.*

Dissolve what quantity you please of common Martial Vitriol; filter the Dissolution, and put it into a Matrafs; set it in Digestion fifteen Days: if any Fæces fall in that time, carefully decant the Liquor from them into a clean Vessel, and drop into it as much Oil of Tartar, as will precipitate all its Sulphur, which you will see fall in a brown Powder. Let it settle, and pour off the clear Liquor. Evaporate it to a Pellicle, and set it by in a cold place to shoot into Chrystals.

The Operation of the Chrystals is Cathartick and Diuretick.

Its Dose is from ten Grains to two Scruples, or one Dram. It is a very aperitive and cleansing Medicine. The Sulphur is the same with that of *Mars* before mentioned.

Aqua Stiptica.

TAKE Colcothar, burnt Allum and Sugar-Candy, *ana* one Dram; Urine of a sound Person, and Rose-water *ana* one Ounce; Plantain-water four Ounces;
K 3 grind

grind all well together in a Mortar till it is without the least Lump; then put it into a Matrafs, and let it stand in Digestion twenty-four Hours; let it settle, and pour it from the Fæces. If you would have it more *Stiptick*, put one Dram of the Liquor left after the last shooting of *Sal Chalybis*, or *Vitriolum Martis*, to it.

Spiritus Vitrioli Dulcis.

PUT into a Matrafs, Spirit of Wine two Pounds, and pour into it one Pound of Oil of Vitriol, by an Ounce at a time; fit and lute on a Head and Receiver; kindle the Fire, which increase gradually to the third degree, till no Drops fall from the Nose of the Head; then take it from the Fire, and put what is distilled into a Vial well stopt. Some will return the Spirit upon the black Matter left in the Body, and draw it over again; and so do three or four times, till nothing is left but a dry black Crust.

Its Operation is Diaphoretick and Diuretick.

Its Dose from twenty to an hundred Drops, in a large quantity of Liquor.

The Diaphoretick Spirit of Vitriol.

TAKE of Salt of Tartar, and burnt Harts-horn, *ana* two Ounces; put them into a Matrafs, and add to them, by little and little, half a Pound of the foregoing Spiritus Vitrioli Dulcis; set the Mixture in a Sand-Furnace, fit to it a Head and Receiver, lute well the Junc-tures, and draw it off to a dry bottom, in a Fire of the second degree: then take off the Spirit, and put to it Saffron and Cochineal *ana* one Ounce, Virginia Snake-root half an Ounce, stop the Vef-sel well; set it upon warm Sand to di-gest twenty-four Hours, sometimes sha-king it: afterwards let it settle, and keep it in a Vial well stopt.

Its Operation is Diaphoretick and Di-uretick.

It is given in all Fevers, and even in the Plague itself, with good Success: Also in Dropsies and the Jaundice. It powerfully opens Obstructions, and cleanses the Lungs.

Its Dose is from thirty to one hun-dred and twenty Drops.

The Medicinal Stone.

TAKE common Green Vitriol half a Pound, and the same quantity of White Vitriol, of Allum twelve Ounces, Anatron or Sandiver, and common Salt, *ana* one Ounce and a half, Salt of Tartar two Ounces; beat them grossly, mix them with four Ounces of Vinegar, and put all into an Earthen Pan, which will contain three times their quantity: set them in a Fire to melt, and stir them often; when they begin to thicken, mix diligently of *Venice Ceruss* four Ounces, and of *Armenian Bole* two Ounces, both in fine Powder; keep them in the Fire, continually stirring till they grow hard; then let all cool, break the Pot, and put up the Stone for use.

It fastens Teeth, preserves the Gums, heals and dries up Ulcers and Wounds, and is also used in Injections and Eye-waters.

The Sympathetical Powder.

TAKE good *English Vitriol*, such as we call *Bow-Copperas*; purify it as before directed, by two or three Dissolutions, Filtrations, and ChrySTALLIZATIONS;

tions; set those Chryftals in a clean Pan in the Sun, either of *June*, *July*, or *August*, so long till they are calcin'd to Whiteness: when one side is calcin'd, turn the other, and in a few Days the Chryftals will crumble into Powder; if they do not, you may beat, and expose them again to the Sun, stirring them three or four times every day. At last beat them into very fine Powder, and again set them in the Sun, stirring as before, for two or three days more, in which time they will be very White: then take in the Matter while the Sun shines hot upon it, and keep it from the Air in Glasses well stopt, and in a dry Place.

It is a mild, but powerful *Stiptick*, always successfully apply'd in the stopping of Blood, either at the Nose, or Wounds; and, where there is no Fracture of the Bone, will heal.

The Royal Stiptick.

UPON four Ounces of Sympathetick Powder, infuse half an Ounce of good Oil of Vitriol; stir them well in a Glass Mortar, with a Pestle of the same, and let them stand twenty-four Hours on warm Sand, in a wide-mouth'd Glass:
grind

grind this Mixture again with a little Spirit of Wine, and put it into a Matrafs; pour upon it more Spirit of Wine, to make that already used, a Pint. Lute it well, and let it stand forty-eight Hours in Digestion, often shaking it; then let it stand to cool and settle, and decant the Spirit of Wine, which keep well stoppt. Remove the Cucurbit or Matrafs, into a Sand-Furnace; lute on its Head and Receiver, and drive over the Helm, and that will rise in the third degree, which also keep by itself: let all cool, and take out what is left at the bottom; powder it, and put it into a Cucurbit; pour upon it distill'd Rain-water one Pound; set it on warm Sand forty-eight Hours, and shake it often; then let it settle, decant, and keep it for use.

The impregnated Spirit and Water may be used apart, or mixed; and if you would add strength to the Mixture, you may put some of the acid Spirit drawn off, after the Spirit of Wine was decanted: but if you would make the best *Stiptick Powder*, put equal Parts of the impregnated Spirit of Wine and Water, and evaporate to Dryness.

It is both a powerful Stiptick, and one of the best Vulneraries in the World.

A Stiptick Water with Mars and Vitriol.

Dissolve one Pound of common *Roman Vitriol*, and precipitate its Oker with Oil of Tartar *per deliquium*; when it is settled, decant the Liquor, and dry the Powder in an Earthen Pan over a gentle Fire. Take of this dried Powder, and Filings of Iron, of each four Ounces; mix them well, and put them into a wide-mouth'd Glas: pour upon them (by one Ounce at a time) three Ounces of Spirit of Nitre; then add two Ounces of Oil of Vitriol, by half an Ounce at a time. Stir them well, and gradually pour upon them ten Ounces of Spring-Water. Let all stand in a gentle Heat forty-eight (stirring them every twelve) Hours. When settled, pour off the clear Liquor, which is a very good and indolent Stiptick.

Observations.

IN the Calcination begin with a very ^{Calcina-} gentle Fire, till the Vitriol is melted; then increase leisurely, till it begins to crust about the sides of the Vessel; otherways you may crack the Pan, and the

the Liquor will run out ; but after it is coagulated about the sides of the Pan, you may increase the Fire boldly.

Distillation.

If the Vitriol be only calcin'd to Grey-ness (as some direct) it will coagulate in the Pots, and become a hard Mass, so that the Fire (though ever so vehement) is hindred from acting upon its Particles, by the Compactness of the Matter, and will never raise the full Strength of the Spirit in twenty Days time ; therefore it ought to be calcin'd to Redness, and beaten into Powder, and put into the Pots before it attracts Air.

Gilla Vitri. The *Gilla*, or (what we call) Salt of Vitriol, ought to be dissolved in no more Water than will keep it from chrystallizing whilst it stands to settle, *viz.* two Pounds, or two Pounds and a half of Water to one Pound of Vitriol, and that filter'd while it is warm.

*Cathartick
Salt of
Vitriol.*

The long Digestion is to make the more gross Metallick Part settle to the bottom ; the better it is separated from that Metallick Part, the less emetick, and more cathartick it is rendred. The Precipitate Matter must, by many Ablutions, be rendred tasteless, and gently dried. The

The Liquor, left after the shooting of *Vitriolum Martis*, is both more ^{Stiptick} and ^{Water.} Vulnerary (by its Impregnation with the Sulphur of *Mars*) than the Oil of Vitriol is of itself.

If you cohobate the *Spiritus Vitrioli* ^{Spiritus} *dulcis*, upon the black Residue left in ^{Vit. Dulcis.} the bottom of the Retort, it exalts its Virtue.

Let the Salt of Tartar be clean, and the Hart's-Horn well burnt, and put not ^{Diaphoret.} above one Ounce of the dulcify'd Spi- ^{Spirit of} ^{Vitriol.} rit of Vitriol to the Salt and Calx at a time.

The Vessel in which you make it, ^{Lapis Me-} must be three or four times bigger than ^{dicament.} will contain the Ingredients, by reason of the great Ebullition which will arise from the mingling of the Acid of Vitriol and distill'd Vinegar, with the Salt of Tartar and Calx of Lead; but especially when you put in the Cerufs, you must do it warily, and keep it down by continual stirring.

You must so expose it to the Sun, that ^{Sympathe-} the Rain may not fall upon it, lest it ^{tical} should wash it away. Some think it suf- ^{Powder.} ficiently

ficiently calcin'd in six or seven Days, exposing it only six or eight Hours in a day; but it has been observ'd, That it is better perform'd, by giving it thirty or forty Days Sun.

*The Royal
Stiptick.*

I have known some direct the putting of distill'd Vinegar to the Dissolution of Vitriol, to cause a Precipitation; but I could never find so great a Disagreement between them, as to be capable to effect it. I fear such have either wrote after others, or foisted in their own Conceits, without consulting an Elaboratory; and it has cost me much Time and Money, to follow them to no purpose.



C H A P. XII.

Of Sulphur, or common Brimstone.

IT is brought to us from *Italy*, and some of the *West-India* Islands, being generated of a fat resinous Substance, full of an acid vitriolick Spirit, as appears by its Spirit made with a Glass Vessel, resembling the Shape of a Bell, from which it takes the Name
of

of *Spirit of Sulphur per Campanam*; differing very little from that of Vitriol.

We have it in three Forms; *viz.*

First, Sulphur Vive, which comes to us as it is dug out of the Earth, and valued at the dearest Price of the three, for no other Reason, but that it is less vendible than the other

Secondly, Mineral Rough Brimstone, which by melting, is separated from a great deal of insignificant Earth, which the Sulphur contained.

Thirdly, That cast into small Rolls, commonly sold by Grocers and Chandlers, which is said to be mixed with *Resin* or some other bituminous Substance, and by experience found to be the worst sort for the making either Flowers or Oil. The rough Mineral Brimstone is best, for the aforesaid Uses, as having less Earth than *Sulphur Vive*, and not being mixed with any Heterogeneous Particle.

*Preparations of Sulphur.**Flowers of Sulphur.*

TO make this to any advantage, it must be sublimed in an arched Room, instead of a Glass or Earthen Receiver, and one, two, or three hundred Weight (according to the Magnitude of the Room) may be put in at a time. You must have a great thick Iron-Pan, called a Tampin, to put the Sulphur in; which must be placed immediately over the Grate, and about a third part of the Diameter of the Tampin left open above its brim, to suffer the Fumes to come into the Arch where they condense into Flowers. The Arch ought to be at least eighteen, or twenty-two Inches thick; and that cramp'd together with Iron, to resist the Force of the Fumes.

If you design your Furnace to sublime one hundred Weight of Flowers at a time, your Pan must be capable of holding one hundred and a quarter; your Arch five Foot high, three Foot broad, and five Foot long; and its Inside and Floor to be set with glaz'd Tiles. In the End, or Side of the Furnace, you must have a Door, which must be two
Foot

Foot square ; it must be strongly barricado'd, and a little Hole in it, of a quarter of an Inch Diameter, which must be exactly stopped with a Plug, by which you may know when all is sublimed. For when you think the Operation is almost at an end, pull out the Plug, and if the Fume come not forcibly out, the Operation is over ; but if you find a strong Fume, with some Noise, continue the Fire till all is over.

Then let it cool twenty-four Hours, before the Door is open'd ; and then go in, and with a Wing or clean Brush wipe the Flowers into a heap, and take them out for Use.

It may be made in less quantity in Vessels of another Form : A Description of both, you will see in the Plates at the beginning of the Book.

It is a good Pectoral Medicine, and used in other Physical Preparations.

Its Dose from ten Grains to a Scruple.

The White Flowers of Sulphur.

TAKE of Salt-Petre, fix'd with Charcoal (as hereafter) half a Pound, or but four Ounces ; of clean Mineral Sulphur, twice its quantity ; grind and
L mix

mix them well together; then put them into a Retort, and set it in a Sand-Furnace: fit to it a Receiver, but lute it not; make a gentle Fire under it, which gradually increase to the third Degree; and so keep it, till all the Flowers rise; which you will know by the upper Part of the Retort above the Sand being clear.

The Use and Dose is the same with the other: But some are of opinion, that these far exceed the other Flowers in Virtue.

The Milk of Sulphur.

TAKE clean Salt of Tartar, one Pound; of Flowers of Sulphur, six Ounces, (some use but four Ounces;) grind them well together in a Stone-Mortar; then put them into a strong Earthen-Pan, and add of Fountain-Water eight Pound: Set this Mixture over some Live-Coals, and by degrees make it boil, till the Liquor is very red, which will require three or four Hours: (as the Water wastes, supply it with new warm Water.) Take it from the Fire, and before it is quite cold, filter it; then drop into it distill'd Vinegar, which will cause the red Liquor to be muddy, and

a white Powder will precipitate. When the first Precipitation is fallen, drop in more Vinegar, and so proceed till you see the Vinegar will not make the Liquor muddy any more. After this, let all settle, and by gentle Inclination pour off the Liquor; put Fountain-Water to the Magistery; stir it well about, and let it settle: pour it off, as before; and so proceed with six or eight Lotions, till the Powder is insipid, and free from its urinous Taste.

Its Operation is the same as that of the Flowers.

Its Dose from one Scruple to one Dram.

The Milk of Sulphur, with Quick-Lime.

TAKE one Part Sulphur, and two Parts of Quick-Lime; grind them well together; put them into an Iron-Kettle, with six Quarts of Water to every three Pounds of the Mixture, and boil it till the Liquor be as red as Blood: strain it (whilst it is warm) into a Vessel, either of Glass or Earth, and let it stand to settle. What is not very clear, filter; but if it be clear, decant it into a Glass-Vessel, and drop into it some warm Urine, which will precipitate the

Dissolution: Wash it as you did the former, and it answers to the same Purposes.

Balsam of Sulphur, with Oil of Olive.

TAKE of the Flowers of Sulphur, four Ounces; Sallad-Oil, one Pound; put them into a Pipkin which will contain about three times their quantity: set them over a Fire, and make the Matter to boil gently; keep it continually stirring with a wooden Spatula, for the space of an Hour and a half, till it is quite cool, and put it up for Use.

It is given in Coughs, Asthmas, and Wheefings; Phtisicks and Consumptions; and externally to heal and dry Ulcers: It eases the Pains of the Gout.

The Dose from ten to forty Drops.

Balsam of Sulphur, with Oil of Turpentine.

TAKE four Ounces of Flowers of Sulphur, and one Pound of Oil of Turpentine; place the Mixture in a Sand-Furnace; stop the Matrafs loosely with another Glafs; give a small Fire for one Hour; then increase it, till the Oil boils gently, in which Degree keep it three

or

or four Hours; then let it cool, and pour off the impregnated Oil from that which is not dissolved.

It is a nauseous, but an excellent Medicine for the Ulcers of the Lungs.

Its Dose from five to fifteen or twenty Drops.

The Balsam of Sulphur, made with Oil of Anniseed, is performed after the same manner, and is more grateful to the Palate; also that with Oil of Amber, Juniper, &c.

Balsam of Sulphur with Linseed-Oil.

PUT four Ounces of Linseed-Oil into an earthen glaz'd Body; set it in a Sand-heat, till it boil gently; then add one Pound of Flowers of Sulphur; stir it till it swells and subsides; then remove it from the Fire, and when cold, pour upon it five Pounds of tartariz'd Spirit of Wine: mix them well, and put them into a Glass-Body, and by a gentle Fire in a Sand-Furnace, draw off the Spirit of Wine. When the Balsam is cold, put it into a Bottle for Use.

The Use and Dose the same with the other Balsams of Sulphur; but this is most grateful.

Balsam of the Sulphur of Mars.

TAKE the clean Filings of Iron, or broken Needles, one Pound; put them into a Cucurbit, with Spirit of Salt five Pounds; let it stand in a Digestive Heat five or six Days; in which time the Iron will be almost dissolved: filter and remove it into a Glass Retort; place it in the Furnace with a great deal of Sand about it; give Fire of the first degree for one Hour, augment it to the second, which continue till you cannot perceive any more Drops to fall: Then change the Receiver, and increase the Fire to the third degree for one Hour, and so pass on to the Extremity of the fourth, and keep it there four or five Hours, in which time you will have red Flowers ascend into the Neck of the Retort, and some yellow Spirit come into the Receiver. Let all cool, and remove the Vessels. In the Receiver you will have about four Ounces of a yellow Spirit: And (if you have proceeded regularly) about four Ounces of foliated red Flowers in the Neck of the Retort. Take of the Flowers three Ounces, of the yellow Spirit one Ounce; put them into a Matrafs; infuse upon them eight Ounces of Oil of Turpentine; let them digest

digest upon warm Sand twenty-four Hours; then augment the Fire, so as to make the Matter simmer for two Hours: Let all cool, and put it carefully from the Fæces for use.

I have heard it affirm'd to be one of the best Vulneraries in the World, and seen wonderful Effects of it, both internally and externally.

It is given in all Distempers of the Breast and Lungs, the Stone, and Ulcers of the Reins; and all other internal Ulcers whatever. It also cicatrizes and heals external Ulcers.

Its Dose is from ten to fifty or sixty Drops.

Liver of Sulphur.

TAKE Flower of Sulphur four Ounces, pure Salt of Tartar two Ounces; mix and melt them in an earthen Dish; keep them stirring till they are as red as Blood, without any white Specks. Take it out of the Dish, and put it into a Glâs, and stop it close.

Of this is made the Tincture, Syrup, and vulnerary Balsam, as followeth.

The Blood of Sulphur.

GRIND four Ounces of Liver of Sulphur, and two Ounces of Oil of Tar, very well in a Mortar; put them into a Matrafs, and pour upon them twelve Ounces of sweet Spirit of Nitre: shake the Matrafs; then stop it close, and let it digest seven or eight Days; when cool, decant the Liquor for Use.

The Dose from five to sixty Drops, mixed with a little Syrup, and drank in Canary, Malaga, or Ale.

It is Pectoral, Carminative, and Diuretick.

Tincture of Sulphur.

BEAT four Ounces of the Liver of Sulphur (while it is warm) in a warm Mortar; put it presently into a Matrafs; put one Pound of Spirit of Wine to it; set them in a Digestion twenty-four Hours, and you will have a very red Tincture, which put up in a Vial stopt for Use.

It is given in all Distempers of the Lungs, and said to be a Preservative against contagious and pestilential Air.

Its

Its Dose from fifteen to twenty-five or thirty Drops.

Another Tincture of Sulphur.

TAKE of Philosophical Soap, (made with Oil of Turpentine and Salt of Tartar) four Ounces; mix well with it, one Ounce of Balsam of Sulphur; put them into a Matrafs, and pour upon them one Pound and a half of tartariz'd Spirit of Wine; make a circulating Vessel of your Matrafs, and let it digest twenty-four Hours in a gentle Heat; when cool, decant the Tincture.

This is esteemed a more pectoral Tincture than the other, though the Dose is the same.

A Vulnerary Balsam of Sulphur.

TAKE of *Hepar Sulphuris*, four Ounces; of Aloes Succatrine, one Ounce and a half; and of Myrrh, one Ounce, all in fine Powder: put them into an Earthen Pot, and pour upon them one Pound of Balsam of Turpentine, with two Drams of Saffron; set them over a gentle Fire in Sand, which increase by degrees, till the Oil simmer, and the Ingredients are dissolved; then let them cool,

cool, and strain the Balsam through Flannel, into a Glafs, which keep for Use.

It is said to be one of the best of Balsams, for the Cure of Wounds and Ulcers.

Oil of Sulphur by the Bell.

IT is made of the yellow Mineral Sulphur: There is requir'd to this Operation two wooden Frames, one Earthen Dish, with a Hole in the middle; a flat Gally-pot an Earthen Porringer; to burn the Sulphur in; a wide-mouth'd Glafs, for a Receiver; and the Bell, or Campana Glafs.

Set one of the wooden Frames upon two Bricks, and put the Dish, with the Hole in its middle, upon it, and the flat Gally-pot in the middle of the Dish, with the bottom upwards; upon which, set the Porringer which contains the Sulphur. Support the second wooden Frame upon two Bricks more, as you did the first, in which Frame, a Hole must be made, fit for the Bell-Glafs to rest in, so that the Edges of the Bell be clear of the Wood.

When

When the Porringer (charged with Sulphur) is fitted, set the Sulphur on fire, with a red-hot Iron; when it is all melted, stir it with a clean Tobacco-pipe, or Iron-wire, to make it burn clear: then cover it with the Bell, and in three or four Hours time you will perceive the Oil to condense about the sides of the Bell, and drop into the Dish, and so into the Receiver.

When you perceive the Sulphur to burn dull, take off the Bell, and stir about the Sulphur with an Iron-Wire, as before: then set the Glass again, and so proceed, till you have as much Oil (or rather Spirit of Sulphur) as you desire.

Its Operation is Diuretick, and it is given in Juleps, to give them an agreeable Acidity to qualify the Heat in continued Fevers: Some ascribe greater Virtues to it, than is given to Oil of Vitriol; but I never could distinguish any Difference more, than that one is the Vitriolick Spirit of Sulphur, and the other the Sulphureous Spirit of Vitriol.

Salt of Sulphur.

PUT four Ounces of *Sal Polychrestum*, (prepared as hereafter in the Chapter of Nitre;) powder it in a Glass-Mortar, with a Pestle of the same: put it into a flat wide-mouth'd Glass, and put to it two Ounces of Spirit of Sulphur; stir them well together with a clean Tobacco-pipe, and set them in a gentle Heat of Sand to evaporate; you will have a pleasant acid Salt, which put up in a Vial for Use.

Its Operation is Diuretick and Cathartick.

Its Dose from one Scruple to one Dram and a half, in Broth, or any proper Vehicle: I have known it given to five or six Drams; and then it has given four or five Motions *per inferiora*, as most Salts will.

Observations.

Flowers of Sulphur. **T**HE yellow rough Mineral Brimstone is best for this Operation; you may have it at the refining Brimstone-

stone-House in *Petticoat-Lane*. For the first twelve or sixteen Hours, give a gentle Fire, so much as to make the Fumes rise, but not to boil over.

You may make use of Salt of Tartar, *White Flowers of Sulphur.* and Nitre powder'd, mixed and melted in a Crucible, instead of fix'd Nitre, or Salt of Tartar; but you must not put into the Crucible above a Spoonful at a time, as you will see in the Chapter of Tartar.

You ought to make the Precipitation *Milk of Sulphur.* in some place, where the noisome Scent has a good Convenience; either in a large Chimney, or in the open Air: for though it is not dangerous, yet it is very offensive.

The Vessel ought not to be filled above *Balsam of Sulphur, with Sal-lad Oil.* one third, lest it should boil over, and take fire with violence, and put you in confusion. Have also a fit Cover to the Vessel ready, that you may smother it, if it should take fire within the Pipkin.

This ought to be placed in a Chimney, *Balsam of Sulphur, with Oil of Turpentine.* because the Steam which comes from it, is as offensive, as that in the Precipitation of Sulphur.

This

Martial Balsam of Sulphur. This might have been placed with the Martial Preparations; but being a Sulphur, and of the Nature of these Medicines, I have given it here.

The Liver of Sulphur. This Operation ought to be performed in a Chimney: you must keep it, after it is melted, continually stirring, till it is red as Blood, and have a Cover ready to stifle the Flame if it should take fire.

Tincture of Sulphur. You ought to make the Liver of Sulphur into fine Powder, in a warm Mortar, and put it into the Matrafs as warm as possibly you can, before it attracts any Air; then presently put the Spirit of Wine to it, and fit a Glass to the Mouth of the Cucurbit; lute the Joint well, and set it to digest.

The Vulnery Balsam of Sulphur. The Pot in which you make this Balsam ought not to be fill'd above a third part; carefully stir it when it begins to heat, lest it should boil over, and take fire, which it is apt to do: have a Cover and wet Cloths ready against such an Accident.

Oil of Sulphur by the Bell. After the Sulphur burns clear, and the Bell set over it begins to work, it will


will burn, and work well for five or six Hours: when the Flame begins to decrease, take off the Bell, and place it upon an earthen Dish (which you must set by the Frame for that purpose) put in more Sulphur, and when it is all on fire, stir it with a clean Pipe, and put on the Bell again; and so continue till all the Sulphur you design for Spirit be burnt.

This is not really the Salt of Sulphur, ^{*Salt of Sul-*} but Nitre fix'd by Sulphur, and after-^{*phur.*} wards impregnated with its Spirit.



C H A P. XIII.

Of ARSENIC.

 T is a Juicy Combustible Mineral Substance, consisting of Sulphur and Corrosive Salts; of which there are three sorts, *viz.* Yellow Arsenic, called *Orpiment*; Red Arsenic, called *Sandarach*; and the White, properly called *Arsenic*. It is made of the Red, by mixing equal parts of *Sandarach* and *Common Salt*, and subliming them together.

The

The *White* is most used in Physick, the *Yellow* less, and the *Red* very little. It is one of the most pernicious of Poisons, and so great an Enemy to the Balsam of Life, that it produceth strange Symptoms, as Convulsions, Swoonings, Gripes, Vomitings, Palpitation of the Heart, intolerable Heat and Thirst, with Mortification of the part where it comes.

Preparations of Arsenic.

To Sublime Arsenic.

THE common way is to mix equal Parts of Arsenic and Salt decrepitate, in fine Powder; put them into a Matrafs, in a Sand-Furnace, within a Chimney, stopping the Mouth of the Matrafs loosely with Cotton or Paper; make a gentle Fire, which increase gradually to the third degree, and so keep it till all is sublimed: six or seven Hours time will be sufficient to raise the Mixture of half a Pound each. This you may repeat as often as you think convenient, every Sublimation separating the light Flowers, and taking only the Chrystalline part. This Sublimation cleanses it, but in my Opinion makes it
the

the more corrosive, by carrying up some of the sharp Spirit of Salt with it.

To Sublime Arsenic for Physical Use.

TA K E of the aforesaid Sublimate one Pound, put it into a Crucible; set it in a melting Furnace, in such a Fire as will just keep it melting, where continue it for two Hours, in which time a great deal of the most corrosive poisonous Part will be exhaled.

Let it cool, and that which remains in the Crucible make into Powder, and grind it with equal its weight of fine Filings of Iron; set them in a Sand-Furnace to sublime, as you did before, observing the same Degree of Fire, and Space of Time, proportionable to the quantity: repeat this Operation twice more, every time separating the light Flowers, and then you have a sublimed Arsenic, pretty well freed from its corrosive Poison, and fit for farther Preparation. Some have ventur'd to give the Infusion of this Arsenic inwardly, and say it is a great Antidote against Poison.

Its Operation is emetick and cathartick.

Its Dose from three to eight Grains, infused in Wine.

Diaphoretick Arsenic.

TAKE of the aforesaid sweet Sublimate of Arsenic, four Ounces, bring it into fine Powder; put it into a Retort, put to it twelve Ounces of Spirit of Nitre; set it in a Sand-Furnace; make to it a gentle Fire, which increase gradually to the third degree, and so keep it till no Drop falls from the Nose of the Retort: let it cool, and take out and grind the Arsenic again; put it into a new Retort, and put to it twelve Ounces more of fresh Spirit of Nitre: proceed, as you did before, to the third degree of Fire; and when you perceive no Drop to fall from the Nose of the Retort, increase the Fire to the fourth degree, and so keep it for two Hours; then let all cool, take out the Medicine, which make into a very subtile Powder; put it into a Matrafs; put to it tartariz'd Spirit of Wine half a Pound; invert a fit Glass into the Mouth of the Matrafs; lute well, and let it stand upon warm Sand twenty-four Hours, often shaking it about: take it from the Sand, let it settle, and decant the clear Spirit of Wine; put to the Medicine half a Pound more of fresh Spirit of Wine; let it stand as before, twenty-four Hours; then let it cool,

cool, and when settled, decant it; dry the Powder gently, and keep for use.

Its Operation is Diaphoretick.

Its Dose from five to twenty-five or thirty Grains.

I remember it to have been oftentimes used with good Success in the *Plague*, in the Year 1665.

Regulus of Arsenic.

TAKE Arsenic, eight Ounces; Salt of Tartar, made of Tartar and Nitre, six Ounces; Filings of Steel four Ounces, Charcoal-dust one Ounce; beat and mix them, and by a Spoonful at a time, put them into a red-hot Crucible: when it is in, make a Fire all over it, and let the Matter stand in good Fusion half an Hour, then take it out, and pour into a warm greas'd Cone, or Mortar, knocking it about the sides to make the Regulus settle: you may purify it that of Antimony.

There is also a Regulus of Arsenic, made of Arsenic one Pound, Pot-ashes six Ounces, and soft Soap one Pound; mix, and put them into a Crucible, covered with another that has a Hole in it, and so bring it to Fusion gradually in a melting Furnace.

Spirit and Butter of Arsenic.

TAKE Arsenic half a Pound, Mercury Sublimate one Pound; mix them well, and put them into a Retort; place it in a Sand-Furnace; lute on its Receiver, and give it gradual Fire, as in the Butter of Antimony, and you will have a thin Fuming Spirit, and a Butter. When all is cold, take off the Receiver; pour the Spirit into a Glass well stop'd: the Butter you must keep by itself.

The Spirit, some say, will radically dissolve Iron: The Butter is a great Caustick.

If you put on a new Receiver, after you have taken off the Spirit and Butter of Arsenic, urge the Fire strongly, and the crude Mercury will distil in Drops, which serves for any use that other Quicksilver can be put to: there is no need of putting Water into the Recipient; the Mercury will condense without it. And if you desire more dissolving Spirit, put the Butter and Spirit into a new Retort, and distil it again: and by repeating that Operation you will make (almost) all the Butter into Spirit.

Arsenical Magnet.

TAKE of Chryftalline Arsenic, Yellow Sulphur, and Crude Antimony, of each three Ounces; these all being made into subtile Powder, and mixed, put them into a Retort; fit a Receiver without luting, and give it gradual Fire to the third degree, where keep it three Hours; augment the Fire to the fourth, for an Hour more; then let all cool, and in the bottom of the Retort you will find a pellucid Mass, of a dark red Colour.

In the time of the Plague, 1665, I made this Magnet, and it was much used both in Plaisters and Amulets.

A Ponderous Oil of Arsenic.

TAKE Arsenic, and Corrosive Sublimate of Mercury, of each one Pound, powder and mix them well, and put them into a Retort; and place it in a Sand-Furnace: keep it one Hour in the first degree of Heat, two Hours in the second, three in the third, and four Hours (or till no Fumes ascend) in the fourth. When cold, you will find in the Receiver a Sublimate, a Spirit, and a

ponderous black Oil, which will not mix with the Spirit. Rectify them in a clean Retort, and the Oil and Spirit will come clear, but not incorporate. Return the Spirit and Oil upon the red Mass remaining in the first Retort, and distil them again in Sand, and you will have a much more ponderous Oil than the former.

For this Process I have receiv'd the Thanks of a great Pretender to Alchymy, with an account of what Wonders he could work with it.

To fix Arsenic.

POWDER and mix one Pound of pure white Arsenic, and two Pounds of Nitre; put them into a Retort, and pour upon them two Pounds of Oil of Vitriol: Place the Retort in a Sand-Furnace; fit to it a large Receiver, and for the three first Hours give it a gentle Heat; then increase the Fire till the red Fumes are near spent. Lastly, let it stand in the fourth degree of Heat, till neither Fumes nor Drops appear. When it is cold, you will find a Milk-white Mass (well fix'd) in the bottom of the Retort. If you would have it more fix'd, powder it, and return it into a Retort
with

with the Spirit of Nitre you drew off, and one Pound of rectify'd Oil of Vitriol; place it in a Sand-Furnace, and give gradual Fire till no Fumes appear in the Receiver: and this Operation you may repeat at discretion.

I know not whether it be useful in Physick; but if the Arsenical Calx be wash'd from the Salts by the ponderous Oil (in the former Process) I am sure it may be made fusible, and truly fixed.

Observations.

LET all your Operations be performed in a Chimney, that the pernicious Fumes may freely ascend without prejudice to the Operator; and when you grind the Arsenic, muffle your Mouth and Nostrils.

*Sublimate
of Corrosive
Arsenic.*

The Filings of Steel being an Alkali, absorb the Corrosive Salt of Arsenic, and keep it from ascending with its more sulphureous Part.

*Sublimate
of Sweet
Arsenic.*

Put not above four Ounces of Spirit of Nitre at a time upon the Arsenic, and dispose the Mouth of the Retort so, that

*Diaphoret.
Arsenic.*

the Fumes may best go up the Chimney; when the Fumes are well wasted, put on four Ounces more of Nitre; and so the third time.

Regulus of Sulphur. When it is melted, and fit to take out of the Fire, let the Cone, or Mortar, be placed in the Chimney, so that you may keep from the Fumes it emits.

Spirit and Butter of Arsenic. When the Butter is all rais'd, you may melt it down out of the Neck of the Retort into the Receiver, by holding a kindled Charcoal under it, as you do in the Butter of Antimony; then take off the Receiver, put on another, and distil the running Mercury.

Magnet of Arsenic. Some order it to be done in an Earthen Vessel, and kept stirring till it is well mixed; and whilst soft, to form it into Amulets: but to do it in a Retort, is more safe from the Obnoxiousness of the Fumes, and renders the Magnet as useful.

Fix'd Arsenic. If you cohobate the Spirit three or four times upon the Arsenic, it will stand a very great Heat in the naked Fire.

C H A P. XIV.

Of SALT-PETRE.

IT is a Salt, though extracted out of the Earth, yet abundantly impregnated with the Spirit of the Air. It also cleaves to Stone-Walls, Rocks, Clefts, and Caverns under ground. That which is extracted out of fat Earth, is made in most Countries of *Europe*; but our greatest Quantities come from the *East-Indies*.

It is composed of near an equal quantity of fix'd and volatile nitrous aerial Salts, bitterish in taste: It is the Product of the Elements, deposited in the Bosom of the Earth, for the Generation and Nourishment of Vegetables, and may not be improperly call'd, The Universal and Un-specifick Mercury; which I shall leave to quick and fit Souls, to reflect and philosophize further upon.

Purification of Salt-Petre.

TAKE what quantity you please of Nitre; dissolve it in warm Water; filter, evaporate, and chrystalize, as you do

do other Salts. This is an Operation not absolutely necessary amongst us ; our Refiners of Salt-Petre giving it well purify'd to our hands. Some esteem the Chrystalline Nitre best ; and others, the Lump : but I could never observe any difference in them ; the one being the top, and the Lump the bottom of the Pan, in which the Nitrous Liquor was put to shoot.

Chrystal Mineral.

MELT what quantity you please of Salt-Petre in an Earthen-Pot, or very clean Iron-Kettle ; when it is well melted, cast a little Flower of Sulphur upon it ; when that is burnt, put on more, and so do, till the Nitre flows clear as Rock-water, without any Scum : then with a clean Iron or Brass-Ladle, take it out of the Pot, and put it into a warm Brass-Pan, or Mould. When that is coagulated, put it by, and with the Ladle take out more ; and so do, till all the melted Salt is cast, which keep for Use. It is also called *Sal Prunellæ*.

If you desire it yet more pure, dissolve it in clean warm Water ; filter the Dissolution, and evaporate, till a thin Skin appear upon its Surface ; then set

it to chryftallize: And this is called, Chryftal Mineral, or Sal Prunellæ Chryftallifatum.

Its Operation is diuretick and cooling: It is given in Fevers, Quinseys, Gonorrhæas, and in pestilential Diseases.

Its Dose from ten Grains to one Scruple, or half a Dram; and so on to an Ounce.

Sal Polychrestum.

MIX equal Parts of Sulphur and Nitre in fine Powder, and put them into a red-hot Crucible by a Spoonful at a time; as soon as the Flame of one Spoonful is consumed, put in another; and so continue it, till all your Mixture is in: Put a Tile over the top, cover it all over with Coals, and keep it in Fusion four or five Hours, and then pour it into a warm Copper-Vessel, and when cold, powder and dissolve it in warm Water: filter the Dissolution, and evaporate till it is dry.

If the Salt be not so white as you desire it, put it into a Crucible, and set it in a strong Fire three or four Hours longer, continually stirring it, till it is very white: Then again dissolve, filter, and
co-

coagulate, and you will have a pure Sal Polychrestum.

Its Operation is Cathartick and Diuretick.

Its Dose is from half a Dram to one Ounce.

If to six Ounces of Sal Polychrestum, you put one Ounce of sublimed Sal Armoniac, and half an Ounce of Sal Mirabile Glauberi, and then dissolve, filter, and chrySTALLIZE them together; the Composition will be much more agreeable, and better deserve the Name of Polychrestum, than before.

The Purging Salt of Nitre.

PUT one Pound of Nitre into a Crucible; set it in a Wind-Furnace; give it a gradual Fire, till it melts; then put into it a live Charcoal, about a quarter of an Inch diameter; when it has done flaming, put in another, and so continue to do, till the Coal causeth no Flame: This is called fixed Nitre. Pour this into a warm Mortar; beat it to powder, and dissolve it in distill'd Vinegar; filter and evaporate in a wide-mouth'd Glass: dissolve it again in fresh distill'd Vinegar; filter and coagulate
the

the third time; then dissolve it in high rectify'd Spirit of Wine; which distil from it, and you will have a Salt, easy of Fusion, pleasant in Taste and Operation.

It is Cathartick and Diuretick, and opens Obstructions in all the chief Bowels.

Its Dose is from two Scruples to four or five Drams.

The fix'd Nitre being expos'd to the Air, dissolves into an Oil of Nitre *per deliquium*.

Spirit of Nitre.

TAKE one Pound of Nitre in fine Powder, and four Pound of clean Tobacco-pipes, or Fuller's-Earth, also beaten to fine Powder; mix them well, and put them into a good Earthen or Coated Glass Retort; place it in an open Furnace; lute a Receiver, and kindle a Fire under it; which keep in the first Degree, till you see some reddish Fumes appear in the Recipient; neither augment it, till those Fumes disappear: then increase to the second, which will raise more red Fumes; when they begin to decrease, raise it to the third, and so on
to

to the fourth, and most extreme Degree of Fire, till no more Clouds come over; then let out the Fire, and as soon as it is cool enough, take off the Receiver, and put the Spirit into a Glass, with a Glass or Wax Stopple.

Its chief Use is to dissolve Minerals, which it performs as well, and some think better than Aqua Fortis.

But it is also a noble Diuretick: The Dose from ten to fifty Drops.

Spirit of Salt-Petre, with Oil of Vitriol, and the Sal Enixum of Paracelsus.

PUT one Pound of Salt-Petre into a Glass-Retort, and pour upon it, one Pound of Oil of Vitriol, and twelve Ounces of Spring-Water; mix them, and avoid the Fumes; then place the Mixture on a Sand-Furnace: lute on a Receiver, and give a Fire of the first Degree, two Hours; advance to the second, where keep it two Hours longer, and so on to the third and fourth, giving two Hours to each Degree; in which time, the Operation will be ended. When all is cold, take off the Receiver, and put the Spirit in a Vial stopped with Wax, or a Glass-Stopple. This Spirit answers all the Ends of the former.

In the Retort you will find a white Mass of a pleasant acid Taste.

Its Operation is Diuretick, and a powerful Opener of Obstructions.

Its Dose is from one Scruple to one Dram, in Water-gruel, Broth, or Water.

The sweet Spirit of Nitre.

PUT into a Retort, half a Pound of Spirit of Wine tartariz'd; to which add four Ounces of Spirit of Nitre, by half an Ounce at a time: a crackling will ensue upon the Mixture; and when that is over, put in more, and so proceed, till all is in. Then shake them well together, and place the Retort in a Sand-Furnace; fit a Receiver, not luted, or but slightly; make a Fire of the first Degree; proceed from thence to the second; where keep it one Hour and a half; and then, one Hour more of the third will finish the Operation.

It is Diaphoretick and Diuretick; also a great Expeller of Wind, and Opener of Obstructions.

Its Dose is from ten Drops to two hundred.

Single Aqua Fortis.

TAKE of crude Vitriol, three Pounds; of Nitre, two Pounds; beat and mix them well; put the Mixture into an Earthen Pot, called a Long-Neck; place it in an open Fire; fit to it a Receiver, which lute well with Clay, Sand, and cut Flax, wrought together; give a Fire of the first Degree for three Hours; in that time you will see some red Fumes in the Receiver, which will again disappear: then raise the Fire to the second Degree; where keep it three Hours longer: go on to the third and fourth; where keep it, till the Receiver is free from Fumes. When all is cold, take the Receiver off carefully, and keep the Aqua Fortis for Use; which is chiefly by Dyers, Refiners, and Varnish-makers; and is also a good Menstruum to be used in the Preparation of other Medicines.

Double Aqua Fortis.

TAKE of Vitriol, calcin'd almost to a Redness, four Pounds; of Nitre, two Pounds, both made into fine Powder, and well mixed; put the Mixture into an Earthen Long-Neck, or Glass
Re-

Retort luted; set it in a reverberatory Furnace; fit and lute on a Receiver to it; kindle the Fire, and proceed, as in the single Aqua Fortis. Some mix Clay with the calcin'd Vitriol and Nitre; but it is altogether unnecessary: And if you desire its Caput Mortuum washed, it is inconvenient.

Tincture of Salt-Petre.

TAKE of Nitre, fixed with Charcoal, as directed in the purging Salt of Nitre, one Pound; put it into a Crucible, and give it a strong melting Heat, for three or four Hours: then put it into a warm Mortar; powder it, and whilst warm, pour upon it half a Pound of tartariz'd Spirit of Wine: set the Mixture in a Matrafs, upon warm Sand, gradually increasing the Fire, till the Spirit of Wine simmer, and so continue it two or three Hours; in which time, the fixed Nitre will have communicated its Tincture to the Spirit of Wine: decant, and put on more, and digest so long as it yields any Tincture.

Its Operation is Diaphoretick and Diuretick.

It purifies the Blood, and is a great Anti-scorbutick.

N

Its

Its Dose is from twenty Drops to a Dram.

A pleasant Purging Salt.

TAKE one Pound of Salt-Petre; grind it well with half a Pound of Flowers of Brimstone; put it by Spoonfuls into a hot Crucible: when it has stood melted a quarter of an Hour, pour it gradually into a large Pan of hot Water: then add Oil of Vitriol, and pulveriz'd Sal Armoniac, of each four Ounces; boil it up to a Salt, which beat into Powder, and keep for Use.

The Dose from one to three Drams.

Fulminating Powder.

IT is compos'd of Nitre, three Parts; Salt of Tartar, two Parts; and Sulphur, one Part; mix them diligently, and keep the Powder dry for Use.

Its Operation is Diaphoretick and Diuretick.

Its Dose is from ten Grains to one Dram.

If you put one Dram of this Powder into a Spoon, Fire-shovel, or on the Point of a Knife, and hold it over a gentle Fire, half a quarter of an Hour, it will then be-

gin to melt, and give a report like a Musquet.

Observations.

THIS differs not much from pure *Sal Prunel.*
Nitre; the burning of Sulphur *or Chrystal*
upon it, consumes the accidental Dirt, *Mineral.*
which may have fallen into it, and evaporates a little of its Humidity and Spirit: but whether this makes the Medicine more or less effectual, the Physician is the best Judge.

This ought to be made of pure Nitre; *Sal Poly-*
because what is impure, or of the nature *chrestum.*
of common Salt, fixes with the Medicine in its Preparation; which some (with good reason) think not to answer the Intent of the Medicine.

You ought to dissolve the fix'd Nitre *Nitrum Ca-*
so often in Vinegar, till it comes off as *thartic.*
sharp in its Distillation from the Nitre, as it was when put to it.

The Nitre, for this Operation, ought *Spir. Nitri*
to be pure and dry; for if it be not separated from the common Salt, which is in all our unrefined Nitre, it will produce

an *Aqua Regia*. If it be not dry, it cannot be made into such fine Powder as is requisite to keep it from melting together, by which the Emission of its Spirits would be hindred.

Spir. Nitr. This Spirit is made with less trouble
Ol. Vitr. than the former; and to answer the Charge of the Oil of Vitriol, you have the Salt which some have observ'd to be endued with all the Virtues of *Tartarum Vitriolatum*.

Aqua Fortis simplex. For this Operation you need not take the trouble of making the Nitre so fine, as in the Spirit of Nitre; the Crude Vitriol and Nitre melting together in the Retort, sufficiently mixes them.

Aqua Fortis duplex. The Nitre ought to be finely powder'd, the better to mix the calcin'd Vitriol and Nitre, before they are put into the Retort, for the Reason recited in the Spirit of Nitre.

Tinct. Sal. N:tri. You may put the first and second Tinctures together in a Retort, and draw off so much Spirit of Wine as is necessary to leave the remaining Spirit of Wine well charged with the Tincture.

Observe but the Proceſs, and no other *Spir. Nitri*
Caution is required. *Dulcis.*

Let the Nitre, Salt of Tartar, and *Pul. Ful-*
Sulphur, be all very dry, and grind *minans.*
them in a warm Mortar, with a warm
Peſtle: for if you let them attract Air,
it leſſens the Crack.

Note, That in the Rectification of
theſe, and other acid Spirits, the Phlegm
comes firſt; whereas in all vinous and
urinous Spirits it comes laſt.

C H A P. XV.

Of Common Salt.

Common Salt is the Quinteſſential
Part of Salt Water, (*viz.*) of the
Sea, or of Fountains, which re-
mains after a full Evaporation of the
inſipid Humidity of the ſaid *Marine* or
Fountain-water. Of it there are three
ſorts, (*viz.*) *Sal Gem*, ſo call'd from its
Transparency, and Similitude of preci-
ous Stones; that made by Evaporation
of the Water of Salt-Fountains, and of

Sea-water. The *Sal Gem* we have from the North-east Countries, as *Poland*, &c. where there are large Rocks of it; the Fountain-Salt out of *Cheshire* and *Worcestershire*, and that of the Sea from all Parts of the World near the Sea: and of it there are two sorts, that made by Evaporation with Fuel, and that dried by the Sun, the last of which is the strongest. The *Sal Gem* is the most penetrating, as appears by its dissolving and volatilizing Gold, more powerfully than the other.

Purification of Salt.

IT is separated from its Earth, and accidental Dirt, by Dissolution, Filtration, and ChrySTALLIZATION.

Decrepitation of Salt.

PUT what quantity of Common Salt you please into a Crucible, (or any other Earthen Vessel which will endure the Fire) give it such a Heat as will make it crackle, but not melt; continue it in that degree of Fire (now and then stirring it with an Iron-hook) till it cracks no more: and this you may do either before, or after Purification.

Spirit of Salt.

TAKE of Common Salt one Pound and a half; of burnt Tobacco-pipes, or Fuller's-Earth, four Pounds and a half; let the Salt and Bole be well dried, and beaten into very fine Powder; then mix them exactly, and put them into an Earthen or Glass Retort luted, which ought not to be quite two thirds full: place the Vessel in a reverberatory Furnace, cover it with its Dome, fit and lute on a Receiver; make under it a Fire of the first degree, and continue it about two Hours, in which time the Lute will be dry: then increase the Fire to the second degree, and continue it so three Hours, and so proceed to the third, and there keep four Hours; urge it further to the fourth, for five Hours longer; in which time (the Fire being exactly managed) the Operation will be ended, which you will perceive by the Disappearance of the white Clouds in the Receiver; let it cool, and take off the Spirit.

Put the Spirit into a clean Cucurbit, or Retort; place it in Sand, in a gentle Heat, fit a Receiver not luted; give it gentle Fire, to raise the insipid Phlegm: when you perceive the Drops to have

an acid Taste, put away that which is in the Receiver, which put on again, and lute; keep it in a Fire of the second Degree, till there is a Minute's space of time between the falling of each Drop. Then take off the Spirit, and keep for use. It is more grateful in taste than it was before its Rectification.

In the Retort will be left the heavy Spirit of Salt, which is improperly call'd its Oil; which may also be rectify'd, and render'd more grateful, by increasing the Fire to the third and fourth Degree, till nothing is left in the Retort, but a Stiptick Yellow Earth.

Its Operation is Diuretick, and it is used in any Vehicle, to make it of a pleasant Acidity. It is given in Fevers, Obstructions of the Liver and Spleen, Dropsies, Jaundice, and to quench Thirst.

Its Dose is from ten to sixty or seventy Drops.

Spirit of Salt, made with Oil of Vitriol, &c.

TAKE of clean Common Salt, and Fountain-water, *ana* two Pounds; of Oil of Vitriol the same quantity; and mix them thus: First, put the Water into an Earthen Vessel; then put the
Oil

Oil to it by two or three Ounces at a time; if you put in more, it will endanger breaking the Vessel by its violent Heat.

Then put the Salt into a Glass Retort, and put the Oil and Water to it; set it in a Sand-Furnace, fit a Receiver to it, and make a Fire of the first degree for one Hour, and advance to the second, where keep it three Hours; increase to the third four Hours, and so to the fourth, till no more Fumes or Drops come into the Receiver. This Spirit (without any Rectification) is more grateful than the former, and equal to, if not exceeding it in Virtue.

Sal Mirabile.

TAKE the Salt left in the Retort, after the Distillation of the aforesaid Spirit of Salt; dissolve and filter it; evaporate part of the Water, and set the other in a cold place to chrySTALLIZE. In cold Weather it will shoot in forty-eight Hours, and in warm Weather in three or four Days.

Its Operation is Cathartick and Diuretick, and answers all the Uses of most of the purging Waters.

Its

Its Dose from half an Ounce to an Ounce, in a Pint or a Quart of Purging or Spring-water.

Spirit of Sal Gem.

SPirit of Sal Gem is made in every respect as that of Common Salt, either with Bole, or Oil of Vitriol.

Its Use and Virtues are the same as Common Salt, but 'tis a more powerful Dissolver of Gold.

Observations.

*Spirit. Salt.
com.*

YOU may put one part of Crude Tobacco-pipe-Clay, to two Parts of Bole, and work it well with the Bole or Clay moist; make it into little Pellets, which dry, and then distil, as you are directed.

*Spirit. Sal.
cum Ol. Vit.*

About the middle of this Distillation, the Matter in the Retort will bubble and make a noise; then be careful that you do not augment the Fire too fast, lest the Retort or the Receiver break.

If the Retort perform the Operation *Sal. Mirab.* without cracking, you may put Water to the Salt which is in it, and dissolve and filter, and so save the Retort. The Evaporation may be made in a clean Iron Kettle, or an Earthen one.

C H A P. XVI.

Of *A M B E R.*

IT is supposed to be a bituminous Juice and Rosin of the Earth, soft and viscous, for in it we often find Flies, Ants, &c. It is called *Amber, Succinum, Carabe, and Glessum.* It is found in the *Persian Gulph, or the Italian Shore;* also in the Currents near the *Baltick Sea,* in the Dutchy of *Prussia.* It is of different Colours, *viz.* White, Yellow, and Black: but those who work it into Beads, and other things, make a distinction of twenty or thirty sorts.

The White is most esteem'd for Physical Use, as being best digested, and of the most odoriferous Smell, containing the greatest quantity of Volatile Salt. The Yellow is next in goodness, and most

most valued by the Amber-workers, by reason of its Transparency. The Black is least in esteem. *Amber*, by agitation, sends forth an agreeable Smell, and being ground into fine Powder, is given in *Gonorrhoea's*, Spitting of Blood, the Bloody-Flux, and the immoderate Flux of the Hemorrhoids, Terms, &c. Also to stop the Violence of Catarrhs, if the Fume of it be received up the Nose.

It is found in pieces of different sizes, from the bigness of a great Pin's Head, to those of five, six, or seven Inches diameter; the greater pieces are wrought into Cabinets, Cups, and several Figures, and are valued according to their Bigness and Transparency.

That we meet withal in the Shops, is by the Druggists generally disposed into two sorts, by separating the White and Yellow Pieces, from those that are full of Scurf and Black, which they distinguish by the Names of Fine and Coarse Amber: The Fine levigated is for Physical Use, and the Coarse for Distillation.

Preparations of Amber.

Oil, Volatile Salt, and Spirit of Amber.

TAKE of coarse Amber, in fine Powder, one Pound; of Tobacco-pipes, Bricks, Sand, or other Bole, also in fine Powder, three Pounds; mix them well, and with the Mixture fill a Retort half full; set it in a Sand-Furnace, fit to it a Receiver, (not luted;) make a Fire of the first Degree for one Hour; increase it to the second, and so keep it two Hours, and then to the third; in which keep it four Hours. In the first Degree, some of the acid Water we call Spirit, with a little of the finest Oil, will distil. In the second, the Spirit and Oil will continue dropping, and some of its volatile Salt will rise into the Neck of the Retort. In the third, you will elevate more Salt with the Balsamick Oil; and if you will urge the Fire to the fourth Degree, it will raise its thick Balsam. As the Salt rises into the Neck of the Retort, you ought to scrape it out with a clean flat Stick, and put it upon brown Paper, to suck up the Oil: The Salt, by this means, will be white, and if you desire it more fine, you may dissolve, filter, and evaporate it, and you will

will have a very white Salt. When the Distillation is over, and all cool, separate the Oil and Spirit, by a Funnel, or other separating Glass. If you would rectify the Oil, you may put it into a long-bodied Retort, and set it in Sand, and by gradual raising the Fire to the second Degree, there will distil a fine yellow and clear Oil: But if you would have a pure white and ethereal Oil, you must put it into a Cucurbit, with three times the quantity of Water to that of Oil, (with which the Vessel must not be quite half full;) and then fit on the Head and Receiver, and gradually bring up the Fire to the second Degree, or so as to make the Oil and Water bubble, and you will distil a pure ethereal Oil, which must be separated as before. Separate the Water from the Oil left in the Retort, and you will find it impregnated with some of the Salt; and therefore put it into the Receiver, into which you made the first Distillation, and shake it well, to rince out the Salt. Then pour all into a Cucurbit; fit to it a Head and Receiver; give a gentle Fire to evaporate the Water, till the Drops fall a little acid: then let it cool, and put it to the Spirit which you separated in the first Distillation; rectify them together, and you have the Spirit of Amber.

The

The Operation of the Oils, Spirit, and Salt, is Diaphoretick and Diuretick.

The Dose of the rectify'd Oils, is from one to twelve or fifteen Drops; of the unrectify'd Oil, from one to six or seven Drops. The Dose of the Spirit, is from ten Drops to one Dram; and that of the Salt, from two Grains to one Scruple.

The rectify'd Oil is given in Hysterical Distempers, in the Palsy, Apoplexy and Epilepsy: The Salt and Spirit are given in the Stone, and Gravel in the Kidneys and Bladder, Stoppage of Urine, Ulcers in the Neck of the Bladder, &c. The Balsamick Oil is most used externally, but often given with good Success in old Gleets; a Disease which frequently puzzles the best Physicians and Surgeons.

The Compound Oil of Amber.

TAKE Amber finely powder'd, Olive-Oil, of each, one Pound; put them into a Retort; place it in a Sand-Furnace, and give it a gradual Fire, till all is distill'd. When cold, take off the Receiver, in which you will find an Oil with a stronger Gas than that from Sulphur:

phur : put it instantly into a Bottle, very close, for Use.

This is a wonderful Paralytick.

The Dose from five to fifteen Drops.

For internal Use, some successful Practitioners mix one Dram of this Oil with one Ounce of compound Spirit of Lavender, and give from ten to forty Drops at a Dose. Externally, they order six Ounces of camphorated Spirit of Wine, and half an Ounce of this Oil to be well shaken together ; and with it foment the Parts affected.

Tincture of Amber.

PUT four Ounces of Amber (in very fine Powder) into a Bolt-Head ; pour upon it twelve Ounces of Spirit of Wine ; invert a small Bolt-Head into the Mouth of the bigger ; lute well the Juncture, and set it to digest upon a Heat of Sand four or five Days, shaking it about two or three times in a day : when the Spirit is well tinged of an Amber-colour, pour it into a Vial, and put half a Pound more of Spirit of Wine. Digest as before, which also will extract a Tincture ; both which put into a Matras, and in a gentle Heat of Ashes draw

draw off one half of the Spirit of Wine, which will serve again for the same Use; and put the Tincture into a Vial well stopped.

Its Operation is a little Diaphoretick: It is given to Hysterical Women, and is good for the Apoplexy, Palsy, and Epilepsy.

Its Dose from ten to seventy or eighty Drops in any proper Vehicle.

The Powers of Amber.

TAKE Oil of Amber, one Ounce; the volatile Salt of Armoniac, half an Ounce; grind the Oil and Salt well together in a little Mortar; pour to them, Spirit of Wine tartariz'd, half a Pound; and put them afterwards into a Bolt-Head: invert a little Glafs to make it fit for Circulation. Lute well the Joint, and put it on warm Sand, to stand in Digestion four or five Days, shaking it two or three times every day; in which time, the Spirit of Wine will have imbibed the Oil and Salt: set it by, and when it is cold, put it in a Vial, well stopped, and keep for Use.

Its Operation is Diaphoretick and Diuretick: It is of the same Use with the Oil, Spirit, and Salt of Amber; and is

an excellent Medicine against the Cholic in Stomach or Bowels.

Its Dose from ten Drops to half a Dram or two Scruples.

Observations.

THE Oil, Spirit, Salt, and Tincture, require no other Remarks than what are given in the Processes: If you put the Salt of *Sal Volatile Oleosum*, instead of the *Sal Volatile Armoniacum*, it will be more acceptable to some Persons.


I must not omit to instruct you how to discover the various Adulterations of Salt of Amber, which being now much used by our learned Physicians, some dishonest (as there are some in all Professions) Chymists, for filthy Lucre sake, mix it with Sal Armoniac; others, with Cremor Tartar; and others, with Salt of Coral: If with the first, you'll soon perceive a strong vinous Scent, when you grind it with a little Salt of Tartar. The second shews itself by being put into clear Water; for the Salt of Amber will dissolve long before the Cremor
Tar-

Tartar: And the last Cheat is discover'd by trying this Salt upon a red-hot Iron; for the genuine Salt will fly away, the Vinegar the Coral had absorb'd, will be destroyed, and nothing but an insipid Earth left upon the Iron.



C H A P. XVII.

Of CORAL.

T is a petrefy'd Plant, which shoots out from Rocks in the bottom of the Sea: There are three sorts of it; *viz.* *Red*, *White*, and *Black*. The *Red* is most in esteem and use; the *White* next: but of the *Black*, I have never met with any Preparation. The *Red* is found in the Seas of the *East-Indies* and the *Mediterranean*: Some say it is green and soft under Water, and by the Air, is presently turn'd red and hard. The *Black* is often upon the same Branch with the *Red*. The *White* is found in the *West-Indian* Sea, upon the Coast of *Spain*, and in the West of *England*, upon the Coast of *Cornwal*. The Chymical Preparations of the *Red*, are the Tincture, Magistery, and Salt; and of the *White*,
O 2 the

the Magistery and Salt: But some prefer the Use of Coral, brought into an impalpable Powder, by grinding only, before any other Preparation whatsoever.

Preparations of Coral.

Salt and Magistery of Coral.

TAKE what quantity you please of red or white Coral, in fine Powder; put it into a clean smooth Earthen Dish, or wide-mouth'd Glafs; mix with it distill'd Vinegar, and there will arise presently a strong Ebullition: when it is over, put more distill'd Vinegar to it; and so continue to do, as long as you perceive any Fermentation: then set it upon warm Sand, stirring it now and then with a clean Tobacco-pipe, till you see the Heat excites no Effervescence; then filter the Liquor, put by the Moie-ty of it for the Magistery, and the other part evaporate to dryness in a gentle Heat; which is the Salt of Coral.

N.B. After the same manner you may make Salt of Crabs Eyes, or of any testaceous Powder.

Its Operation is Diaphoretick and Diu-
retick, and is said to revive and fortify
the

the Heart, stop Bloody-Fluxes, and all other Hæmorrhages, and to resist Poison.

Its Dose from ten Grains to one Dram.

Upon the other part of the Liquor, drop Oil of Tartar *per deliquium*, upon which will arise a white Curd, and will in a little time precipitate to the bottom: when the Liquor is clear, drop in more; and if it turns the Liquor white as before, let it settle; and so continue, till the Liquor will not curdle by the Oil of Tartar. When the Magistery is all settled, decant the Liquor, and put clean Water to the Magistery; shake it about, let it settle, and decant as before; and so do five or six times, till the Magistery has lost all its salt Taste: dry it gently, and keep it for Use.

It is endued with the same Virtues as the Salt.

Its Dose may be augmented to four Scruples.

The Tincture of Coral.

IT is made several Ways, and with divers Menstruums, which by Time and Heat becoming red, it is thought (with good reason) that the Tincture

proceeds more from the Spirits than from the Coral: I will therefore give you one, which I think to be the most genuine Tincture of Coral.

Reduce half a Pound of Red Coral into impalpable Powder, and mix it with equal its Weight of sublimed Sal Armoniac, also in Powder: put the Mixture into a Retort, which place in Sand; fit to it a Receiver, and having luted well the Junctures, make fire of the first Degree, one Hour; proceed to the second, which continue two Hours; go on to the third, and keep it there three Hours, or till all the Sal Armoniac is sublimed. It will be tinged with variety of Colours, as red, green, blue, &c. and contain in it the true Tincture of Coral; which is apparent by its Body being left white in the Body of the Retort. Pul all these sublimed Flowers into a Matrafs; and to every four Ounces. of the Flowers, put ten Ounces of the tartariz'd Spirit of Wine: set them upon warm Sand, in a double Vessel, to digest, for three or four Days, and shake them every day two or three times: when the Spirit of Wine is well tinged, put on more, and let it stand as before. Then put the tinged Spirits together (being twenty Ounces) into a Matrafs; draw off twelve or fourteen Ounces, and the
fix

six or eight remaining, will be deeply tinged with the Sulphur of Coral.

Its Operation is Diaphoretick and Diuretick.

Its Dose from ten Drops to one Dram.

Observations.

MAKE the Evaporation in a Glass-^{Sal Coral.} Vessel, with a wide Mouth, and in a gentle Heat of Sand: An Earthen-Vessel will suck up a great deal of Salt, and too strong a Heat will discolour it.

When it is well settled, and washed ^{Magist.} sweet, you may drop it upon a clean ^{Coral.} Chalk-stone, to absorb the Humidity, and then dry it further, between Paper, in the shade.

The Sal Armoniac ought to be pre-^{Tinct. Co-}pared by Dissolution and Sublimation, ^{ral.} so that no heterogeneous Matter may be elevated with the genuine Sulphur of Coral.

C H A P. XVIII.

Of Japan Earth.

T is brought from *Japan*, and by the Natives called *Catechu*: in Colour and Weight it differs; some make nine or ten distinct sorts of it. But be it of what Colour it will, that which is lightest, breaks smooth, and is most stiptick on the Tongue, is best. In taste, it is something bitter, but not unpleasant; prepares the Palate to receive Wine with much Pleasure. There are several Compositions of it made into Troches; that most in esteem, is called *Catechu*.

Catechu.

MAKE what quantity you please of *Japan Earth* into Powder; dissolve it in Barley-Cinnamon Water; pour off the Dissolution from the Fæces, and dry it gently: when it is dry, mix two Ounces of it with three Ounces of Sugar-candy; Ambergrease, half a Scruple; Musk, fifteen Grains; and Butter, or (as they call it) Spirit of Roses, fifteen Drops: grind them all extremely well together,
till

till they are impalpable, and with the Mucilage of Gum Tragacanth, make them into little Pills of the bigness of Pearl-Barley.

One of these Pills held in the Mouth, causes a sweet Breath, and renders all Liquors very palatable: forty or fifty of them dissolv'd in the Mouth, and swallowed in a day, help Catarrhs, Fluxes of the Belly, the Bloody-Flux, and overflowing of the Terms: And it is also an excellent Medicine in a Gonorrhæa, and even old Gleets.

The Tincture of Japan Earth.

POWDER finely four Ounces of *Japan Earth*; of the best Cinnamon, one Ounce; of the Peruvian Bark, one Ounce and a half; let them be made also into fine Powder, with Musk and Ambergrease, *ana* six Grains: let the two last be well ground with one Ounce of Sugar-candy; put them all into a Matrafs, and put to them of Spirit of Wine, twenty-four Ounces: make of the Matrafs a circulating Vessel; lute well the Juncture; set it upon warm Sand to digest, four or five Days, shaking it about two or three times a day: then set it by to settle, and by gentle Inclination

nation pour it into a Vial, and keep for Use.

It is good for all the foremention'd Purposes, and also an excellent Anti-febrifick.

Its Dose from half a Spoonful to three or four, in Wine, or any other proper Vehicle.

These need no other Observation than adhering to the Processes.



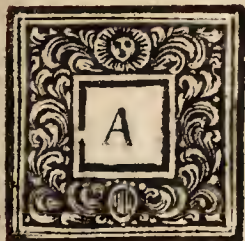


A
 Compleat Course
 OF
 CHYMISTRY.

PART II.

CHAP. I.

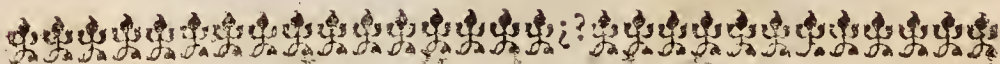
Of VEGETABLES.



ALL Plants proceed from Seed, in which they are for some time shut up, as in a Matrix, till the saline Humidity of the Earth and Heat has penetrated and softned the outer part of the Seed, enter'd its Pores, and given extension

sion to the young Plant, by which its Parts become perceptible.

Plants are nourished by their Roots, which receive their Nutriment by Pores, and are afterwards exalted by the Heat of the Sun, which distributes itself into the Fibres of the Plant, and causes such a Filtration and Circulation of the Juices, as give Nourishment to the Vegetable Parts: the most exalted and subtile Parts whereof, ascend to the Flowers and Fruit; the most aqueous and less rarefy'd, give Nourishment to the Leaves and Branches. From the more Oily Part proceed Gums and Resins; and from the more gross and terrestrial, is compos'd the Bark.



CHAPTER II.

Of JALAP.

J is a Root brought to us from *America*, sliced and dried; that which is most ponderous, and breaks with shining black resinous Veins, is best. It is a great Cathartick, and pur-

purges watry Humours: The Powder of it is given in White-wine, from ten Grains to one Dram and a half.

Resin of Jalap.

TAKE of select Jalap, one Pound; powder it, and put it into a Matras; put to it, six Pounds of rectify'd Spirit of Wine; invert a Bolt-Head, and lute it; set it upon warm Sand three or four Days, and shake it every day two or three times: when the Spirit is well tinged, decant it carefully through a Hair-Sieve into a Cucurbit; set it in a gentle Heat of Sand, or Balneo, and draw off the Spirit of Wine to one Pint, which you may return upon the Jalap, to make a second Extraction: decant the Spirit as formerly; lute on its Head and Receiver, and distil as before. Let all cool, and in the Cucurbit you will find the Resin in form of Turpentine; which wash in three or four Waters, and in a gentle Heat dry it, till it will beat into Powder.

Its Operation is Cathartick.

It

It is given to open Obstructions, and in Dropsies, made into Pills or an Electuary.

Its Dose from three Grains to one Scruple.



CHAP. III.

Of RHUBARB.

IT is a Purgative Root, brought to us from *Turkey* and *East-India*: It is the Product of some Parts of *China* and *Tartary*. The most compact, (not flinty) which cuts in Grains like Nutmegs, and is of a pleasant Flavour, is best: And observe, that generally the small Pieces exceed the great ones in Goodness, as being less subject to Corruption. After its Purgative Operation is over, it binds, and is therefore given in Fluxes.

Its Dose is from ten Grains to two Drams.

Extract of Rhubarb.

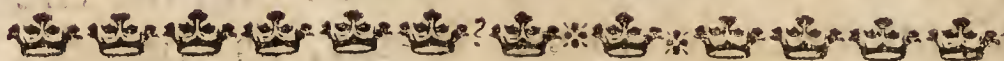
BRUISE, or cut into very thin Slices, what quantity of Rhubarb you please; steep it ten or twelve Hours in a sufficient quantity of distill'd Rain-Water, or any proper simple distill'd Water; let it just simmer, and then pass it through a Strainer: infuse the Remainder in more Water, as before; pass and press it hard through the Strainer; put the Infusions together, and let them settle: then, by gentle Inclination, pour off the clear Tincture from its Residence, and evaporate to the Consistence of Honey, and it is the Extract of Rhubarb.

Observations.

ALL Extracts made with Water, are apt to grow mouldy; therefore if you intend to keep them long, they ought to be made with Spirit of Wine.

After

After the same manner are all the Vegetable Extracts made, except Resins, which require Spirit of Wine to dissolve them: Also observe, when you make the Extract of any Aromatick Herb, Flower, or Spice, that instead of Evaporation, you distil the Water, and save it for Use, &c.



C H A P. IV.

Of *GUAIACUM*.

GUAIACUM is the Wood we call *Lignum Sanctum*, and *Lignum Vitæ*: It grows in several Places of the *West-Indies*, and is a Tree of great Magnitude. It is Sudorifick, and much used in Decoctions. That which is most compact, resinous, and ponderous, is best. Its Gum is both Sudorifick and Cathartick.

Spirit and Oil of Guaiacum.

FILL an Earthen Retort two thirds full, with such Dust of Guaiacum as you have at the Turners; place it in a Reverberatory, and lute to it a Receiver; give it a Fire of the first Degree one Hour; increase it to the second, and keep it there two or three Hours: go on to the third two Hours; and so to the fourth for two Hours more, or until you see no more Fumes will come into the Receiver: Let it cool, and take off what is distill'd, and put it into a Coffin of Filtring-Paper, in a Funnel; the Spirit will filter through the Paper, and the Oil will remain in it. Put the Spirit into a Glafs Retort, set it in a Sand-Furnace, fit on its Receiver, and give it a Fire of the first Degree, to raise the Phlegm: when you perceive the Drops to come acid, remove the Receiver, and put away the Phlegm as useless. Put on the Receiver again, and lute it, increasing the Fire gradually to the second and third Degree, and it will bring over all the Spirit, which put in a Vial for Use.

The Oil may be rectify'd in a Retort: It is generally used for the Tooth-ach, and to clean rotten Bones, without Rectification.

Its Operation is Diaphoretick.

Its Dose is from two to eight or ten Drops.

The Spirit is Diaphoretick and Diuretick.

Its Dose from twenty Drops to sixty or seventy.

You may calcine the Caput Mortuum to a white Ash, and then with warm Water extract the Salt, as you will see hereafter, of other Vegetable fixed Salts.



C H A P. V.

Of SASSAFRAS.

IT is a Tree affording good Timber: It grows in several of our Western Plantations, especially in *Virginia*, from whence we have it.

Its

Its Root is more fragrant than the Tree; and therefore it is most used in Physical Cases. The Bark, of both the Tree and Root, is more fragrant than the Wood of either, and yields more Oil considerably.

Oil of Sassafras.

TAKE of the Shavings, or the Wood in Powder, twenty-eight Pounds; put it into a Copper-Still; to which put of clean Water, twelve Gallons: Lute on the Head, and set a Spoul-Receiver to the Worm; make a gradual Fire, till it runs in a small Thread into a Receiver; in which Condition, keep it, till by holding a Spoon under the Nose of the Worm, you perceive no Oil to distil with the Water. When the Operation is ended, separate the Oil which sinks to the bottom, and put it up.

Its Operation is Diaphoretick and Diuretick: It is given in the Venereal Disease, Gout, Stone, Scurvy, and Dropsy.

Its Dose from three to ten or twelve Drops.

After the same manner you may make the Oils of Rhodium, Cinnamon, Cloves, Clove-Bark, all Aromatick Herbs and Seeds; and therefore I will not trouble you with any other Procefs of this kind.

Observations.

THE Oils of Cinnamon, Cloves, Sassafras, Guaiacum, and Box, sink in Water; but I cannot remember any other but what will swim.

As I shew'd you how to discern the genuine Salt of Amber from the spurious, so I shall here teach you how to discover when these Vegetable Chymical Oils are adulterated.

If they are mixed with Oil of Turpentine, you cannot take a Drop or two in Sugar, but you will soon perceive it. If with Oil of Balsam Capivii, the Frangency of the Vegetable will be much weakned.

But the common Way of sophisticating the dearer Oils of Cinnamon, Cloves, and Sassa-

Sassafras, is by adding a twelfth or sixteenth part of Spirit of Wine, which will quickly and intimately unite with them. But this Cheat also, you will easily discover, by dropping three or four Drops into a little Water, which will continue milky a considerable time; but if the Oils are true, they will sink to the bottom, without discolouring the Water.



CHAP. VI.

Of the Jesuits, or Peruvian Bark.

IT was brought to us from Peru
I in *New Spain*, and its Use first
taught us by the Jesuits: There
have been, for some Years, two sorts of
it; *viz.* the cultivated and the wild:
The cultivated is the best; and the best
of that kind, is that which is most com-
pact, bitter, and of a reddish Colour.

It is a certain Remedy to hinder the
Fits of an Ague, (if judiciously prescri-
bed, otherwise it is very pernicious;) and
is given either in Powder, or infused
in Wine.

The Infusion of Peruvian Bark.

TAKE of the Bark in Powder, two Ounces; put it into a Matrafs, and to it, two Quarts of White, or pale Red-Wine: fit the Matrafs for Circulation, and fet it upon warm Sand, or in Balneo, forty-eight Hours; shake it about two or three times a day: then let it cool, and pour off the Infusion (through a Strainer) into a Vial, and keep it stoppt for Use.

Two or three Ounces of this Infusion are given three or four times a day in Agues; but never in the Paroxifm. Dr. *Smith* of *Paris* (who was Sir *Robert Tabor's* Succellor there) made his Infusion in pale Red-Wine.

The Tincture of Peruvian Bark.

TAKE four Ounces of the Bark in Powder; put it into a Bolt-Head; put to it of tartariz'd Spirit of Wine, twelve Ounces: invert another lefs into the Mouth, to make it a double Veffel; fet it in a gentle Heat of Sand, Balneo, or Baln. Vapor. four or five Days, shaking it every day two or three times: then

then decant the tinged Spirit of Wine carefully into a Vial; which keep for Use.

Its Dose is from one Scruple to one Dram, or one Dram and a half; and in some Cases to half an Ounce; to be given in any convenient Vehicle, as a Febrifuge, beginning its Use immediately after the Paroxism.

The Extract of Peruvian Bark.

PUT half a Pound of *Peruvian Bark* in Powder, into a large Matrafs; put to it of the simple distill'd Water of Wormwood, Carduus, or any other proper Water, five or six Quarts; place it in Sand, and let it boil gently, two or three Hours: strain it; put more distill'd Water to the Bark; boil and strain as before; put the Infusions together, and in a Glass or Earthen-Vessel evaporate gently, to the Consistence of Honey. Put this Extract into a Pot for Use.

Its Dose is from fifteen Grains to one Dram, in Pills, or dissolved in Wine.

It is endued with the same Virtues as the former.

C H A P. VII.

Of SUGAR.

IT is the Essential Salt of a Reed, which grows in the *East* and *West-Indies*; That from *Brazil*, brought into *Europe* by the *Portuguese*, is accounted the best, which is called *Brazil* or *Lisbon* Sugar; but that which now we have from *Barbadoes* and *Jamaica*, is very good, and by the Refiners of Sugar is made equal to any other in Goodness. It is refined by Dissolution, and the Separation of its Earthy, Gross, Oily, and Molossus Part: That which is made most white and acceptable to the Eye, is refined by the help of Lime-Water; and being evaporated to a due Consistence, is put into Moulds of a Pyramidical Form, with a Hole in the bottom, to let the more feculent Part run out.

Sugar-candy is made of both refined and unrefined Sugar, by boiling of them in Water, and setting them to chrySTALLIZE in Vessels; in which they put little Sticks for the ChrySTALS to adhere to.

to. The white Candy is of the refined Sugar, and the brown of the unrefined,

Sugar-candy is accounted a good Pectoral, and given in Diseases of the Breast and Lungs.

Spirit of Sugar.

TO one Pound of powder'd Sugar, put three Pounds of Fullers-Earth, also in powder; or, in its room, put so much Sand, clean washed; fill a Retort half full of this Mixture, place it in a Sand-Furnace, and give it Fire of the first Degree for two Hours; then increase it to the second for two Hours more; proceed to the third, where keep it, till no Fumes appear in the Receiver: Then let all cool, and in the Receiver you will find a foetid Spirit and Oil, which separate as usual. Put the Spirit into a Retort, or Cucurbit; set to it a Receiver unluted; make fire of the first Degree, and there keep it, till you perceive the Drops have a little Acidity: put away the Phlegm; lute on the Receiver, increase the Fire to the second Degree, where keep it, till all is come off.

It

It dissolves Pearl and Coral, and is also accounted a good Medicine in the Stone and Gravel in the Bladder and Kidneys.

Its Dose is from ten to fifty or sixty Drops, in any appropriated Liquor.

The Compound Spirit of Sugar-candy.

TAKE of Sugar-candy (white or brown) half a Pound; of Sal Armoniac, four Ounces; both made into fine Powder, and well mixed: put them into a Retort, which must be two thirds empty; place it in a Sand-Furnace, and make fire of the first Degree for an Hour; increase it to the second, and there continue it as long as the Drops fall at the distance of one Second of Time: proceed then to the third Degree, and let it remain there, till no more Fumes appear in the Receiver. In it, you will find an Emphyreumatical Spirit, with a little Oil; take out this Spirit and Oil, put them into a clean Retort, and rectify in a gentle Fire of Sand, leaving the Oil in the bottom of the Vessel; and you will have a clear Spirit, more agreeable than that of the first Distillation.

It

It is more aperitive than the former, and its Use and Dose the same.

The Ardent Spirit of Sugar.

TAKE coarse Sugar, or Moloffus, *q. v.* put to it ten or twelve times its Weight of Water, and let them stand a sufficient time to ferment; as soon as the Fermentation is over, put the Liquor into a Copper-Still, with its Refrigeratory, and give it gradual Fire, till it begins to drop: Observe then so to manage the Fire, that the Spirit come from the Mouth of the Worm in a small Thread; and so continue, till that which distils is insipid: Then let out the Fire, and rectify the Spirit by a second Distillation, either in a Glass-Body and Head, or (if your quantity be great) in a Copper Vessel; observing to separate the Spirit from the Phlegm, as in the first Distillation; which may be farther rectify'd, till it burns all away.

It is of the same Use with Spirit of Wine, and is preferable to all but that of the Grape.

Obfer-

Observations.

THE Sand, or other Bole, is mixed with the Sugar, to hinder its boiling over.

The Vessel in which you distil it, ought to be at least half empty.

The insipid Water which comes over in the Rectification, ought to be kept by itself, changing the Receiver, as soon as you perceive the Drops which fall, to be of an acid Taste,

If you put a tenth part of dulcify'd Spirit of Salt, to the Spirit of Honey, or Sugar, in their Rectification, it will make them of a more grateful Smell, and not lessen, but rather increase their Virtues.

Lastly, urge not the Fire too strongly at the latter end, lest you raise some of the foetid Oil.

C H A P. VIII.

Of WINE.

WINE is made of the express'd Juice of the Grape, which immediately after the Pressure is called Must, and being fermented, becomes Wine. The Fermentation causes a Separation of the gross Tartar, and the viscous Parts of the Must from the pure sulphureous and oily ones, in which are the Spirit and essential Salt. The solid Part of the Tartar adheres to the sides of the Vessel, and the viscous falls to the bottom.

The sharp sprightly Wines, such as *Champaigne, Burgundy, Nants, Bourdeaux, &c.* being most impregnated with essential Salt, yield more Spirit than Sweet *Spanish* and *Muscate-Wines*; because they are more loaded with a viscous Substance.

Spi-

Spirit of Wine, or Brandy.

FILL a Copper-Still (which hath a Refrigeratory) two thirds full of *French-Wine*; lute on the Head, and put a Receiver to the Nose of the Worm; give it a gradual Fire, till the Spirit runs in a small Thread; keep it in that Degree, till that which comes over, being thrown into the Fire with a Spoon, will not burn: then let all cool, and remove the Receiver, which contains the weak Spirit of Wine, or Brandy, &c.

Rectified Spirit of Wine.

PUT into a long-bodied Matrafs, so much of the foregoing Vinous Spirit, as will fill one half of it; place it in a gentle Heat of Sand, and draw off one half, or till you see the small Veins expand themselves twice the breadth they at first appear'd: then remove the Receiver, and you will have a Spirit that will burn away to a Drop or two, if a Spoonful be set on fire, by the Flame of Paper or Candle.

This Spirit serves for making several Extracts and Tinctures.

But if you will have yet a more high and perfect Spirit of Wine, put what quantity you please of the foregoing Spirit into a Vessel: and to each Gallon, four Pounds of calcin'd Tartar, or the same quantity of Pot-ashes, in Powder, and very dry; shake them well, and let them stand a quarter of an Hour; repeat the Agitation two or three times, that the Salt may imbibe the Phlegm: when it is well settled, decant the Spirit into a long Body, in the Mouth of which, hang a clean Cloth, which contains in it one Pound of Salt of Tartar, proportionably to each Gallon: Place your Matrafs, or Body, in a gentle Heat of Sand; and the Spirit of Wine which distils into the Receiver, will be perfect; the Salt receiving and keeping back the Phlegm. This Spirit is fit for any Use in Chymistry, as a Menstruum, or for extracting Tinctures, &c.

It is sometimes taken inwardly, to the quantity of half or three quarters of a Spoonful, by Apoplectical Persons; and is externally used in Burns, also in cold Pains and Contusions, &c.

Spirit of Wine Tartariz'd.

TAKE Salt of Tartar, two or three times coagulated and dissolv'd, one Pound; give it a strong Fusion in a Crucible, for two Hours; powder it in a warm Mortar, and whilst warm, put it into a Matrafs, to two Quarts of the former rectify'd Spirit of Wine; shake them well together, and place them in a Sand-Furnace; lute the Junctures of the Head and Receiver; give Fire to such a Degree, as may make the Drops succeed each other very quickly. This Spirit of Wine volatilizes, and carries over with it some part of the Salt of Tartar, which is demonstrable, by the Salt sustaining the Loss of at least one Ounce of its Weight.

By this Operation, the Spirit of Wine acquires a more agreeable Scent and Taste than before, and it is more subtile, and given in a less Dose, and for the same Use as the former.

Spirit of Wine tartariz'd another Way.

TAKE the Salt of Tartar left in the bottom of the Matrafs, in the foregoing Operation; dissolve it in pure rectify'd distilled Vinegar; filter the Dissolution, and coagulate the Salt, which dissolve again in more distill'd Vinegar: filter and coagulate as before. Repeat this Operation so often, that no black Fæces remain, and that the distill'd Vinegar comes off as strong as it was put upon the Salt: then is this Salt prepared, which some call (but not truly) by the Name of Volatile Salt of Tartar.

If you will farther exalt this Salt, take of the foregoing Salt of Tartar, four Ounces; and put to it one Pound of the Spirit of Wine, which will readily dissolve it. Let the Dissolution stand quiet three or four Hours, and decant it gently from the Fæces; draw off the Spirit of Wine in a gentle Heat of Sand in a Retort; dissolve the Salt again in the same Spirit of Wine, and repeat the Operation till no Fæces remain: return the Salt again into the Spirit of Wine, in which it will totally dissolve.

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This

This is the true tartariz'd Spirit of Wine, with which I extract the Tinctures and Anodyne Sulphurs of Metals, and unite them with Vegetable fixed, and Animal Volatile Alkalies; which is one of the chiefest Ingredients in the Composition of that excellent Anti-Rheumatick Tincture, which, fifteen or sixteen Years ago, cured me of a violent Rheumatism, that afflicted me three Years successively: And I was not only freed then from those acute Pains that attended the Distemper, but have been preserved to this day without the least Symptom of them. Nor is its Virtues confined to the Cure of that Disease only, but even to the Gout, Scurvy, Dropsy, Jaundice, Cholick, Green-Sickness, Stone and Gravel in the Bladder or Kidneys, and in Fevers: In all these Distempers it has manifested its Virtue, and given relief to some hundreds, within these thirteen Years last past.

This tartariz'd Spirit of Wine is Cathartick, Diuretick, and Diaphoretick.

Its Dose is from fifty Drops to two Drams, in Wine and Water, or Water alone.

The Cephalick, or Head Spirit.

TAKE of the essential Oils of Cloves, Cinnamon, and Nutmegs, of each half a Dram; of Marjoram, Lavender, and Rosemary, of each two Scruples; of Oranges and Lemons, *ana* one Scruple and a half; of fine Benjamin in Powder, one Ounce: mix these all together in a Cucurbit, with three Pints of tartariz'd Spirit of Wine; place them in a Sand-Furnace, fitting and luting too, the Head and Receiver: kindle the Fire, which gradually increase to the second Degree, and in that Heat continue it, till three Pints are drawn off.

Then take off the Receiver, and put the Spirit into a clean Matrafs, to which, put of *Marum Syriacum*, and Lillies of the Valley, *ana* one Ounce; of *Sal Volatile Oleosum*, two Ounces; and of Essence of Ambergrease, one Dram and a half: shake them well, and invert a blind Head to the Matrafs, and keep it in a gentle Heat of Digestion three or four Days, and then put it into a Vial, well stopped, for Use.

It is a most pleasant and excellent Cephalick; three or four Drops of it being strongly snuffed up the Nostrils, and the Temples a little rubb'd with it, does immediately remove most Pains of the Head: It may also be taken from ten to thirty or forty Drops, in a little Glass of Wine or Water, and is a most effectual Pectoral Medicine.

This is that true *Spiritus Cephalicus* which I have made above thirty Years, and has by several Persons of late Years been counterfeited, and called by the Name of Liquid Snuff.

Spirit of Scurvy-Grass.

TAKE of Garden Scurvy-Grass in Flower, (or fresh and newly gathered, at any other time) twenty Pounds; bruise it grossly, and put it into a Copper-Still, tinned within; put to it three Gallons of the Grounds of Ale, with a Pint of new Yeast; stir them well together, lute on the Head, and kindle a little Small-coal under it, to give just a fermenting Warmth; let it stand twenty-four Hours; and then give fire to distil the Spirit. That which comes first

first is the best, and ought to be kept by itself: The second Running will serve to put to more Grass, when you distil it another time.

It is also made without Fermentation, with Spirit of Wine, thus: To twenty Pounds of Scurvy-Grass, bruised as before, put two Gallons of Brandy, or Distillers Proof-Spirit; make fire under it, and distil one Gallon, which will be strongly impregnated with the Virtue of the Herb. The second Running you may keep for the same Use as before: Some add to every ten Pounds of Grass, two Pounds of Horse-Radish, sliced or bruised, &c.

The Purging Spirit is made by dissolving one Ounce of Resin of Scammony, or Jalap, in one Pound of the Spirit.

The Dose of the plain Spirit is from twenty to an hundred Drops; and of the Purging Spirit, from twenty to sixty Drops, &c.

The Queen of Hungary's Water.

TAKE of the Tops of Rosemary, when full of Flowers, what quantity you please; put them into a Copper-Still, tinned within; pour upon them three times their Weight of rectify'd Spirit of Wine, with as much clean Water: lute on the Head, fit a Receiver to the Worm, and make a little Fire of Small-coal, but not so hot as to elevate any Spirit; and thus let it stand twenty-four Hours: then give it Fire to cause it to distil in a small Thread, and draw off the same quantity of Spirit, and half the Water: then let out the Fire, and take the Rosemary Tops out of the Still, and put one third part of the quantity of Flowers, to those already in the Still. Return all the former Distillation upon the Flowers; lute on the Head, digest as before, and draw off by gentle Fire, the same quantity of Spirit of Wine which at first you put on; which keep close stopped for Use.

Its Operation is Diaphoretick: It is given in Convulsions, Cramps, Palsies, Lethargies, Apoplexies, and Hysterical Maladies.

Its

Its Dose is from one Dram to two or three, in a proper Vehicle.

Observe, That after the same Method with the two foregoing Spirits, you may make the Spirits of all Herbs and Flowers, &c. adding so much Water as is sufficient to keep them from burning.

To make Cordial Waters.

TAKE of dried Orange-Peel, two Pounds; of the Tops of Clary, (in Flower) two Handfuls; of *French Brandy*, four Gallons; of Spring-Water, three Gallons: put them into a Copper Alembek, and draw off three Gallons and a half of the Spirit; then change the Receiver, and draw off one Gallon more; in which dissolve four Pounds of fine Sugar, and mix it with the first drawn, and clarify all with the Whites of Eggs.

After this manner you may make Cinnamon-Water, Citron-Water, &c. If you would draw Spirit of Saffron, you cannot allow less than two Ounces of Saffron to each Gallon of Brandy.

Observations.

*Spir. Vin.
Rectificat.*

IF you have a great quantity to rectify, you may put several Parcels to work in a digesting Furnace, in five or six Vessels, and you may have of pure rectified Spirit, two or three Gallons in twenty-four Hours time ; or it may also be rectify'd in a Copper-Still, with its Refrigeratory.

*Spir. Vin.
Tartarizat.*

If you let it stand thirty or forty Hours, upon the Salt of Tartar in Digestion, before you begin the Distillation, the Spirit will the better imbibe the more subtile Part of the Salt.

*Spir. Vin.
Tartar.*

The distill'd Vinegar you use in this Operation, ought to be rectify'd so often, till it leaves nothing in the bottom of the Vessel, in which it is rectify'd, but a little white Salt.

Spir. Cepha.

In this Operation, exceed not the second Degree of Fire, nor draw off above three parts of Spirit, before you take off the Receiver ; which you may do while the Fire is still under it : then put the Receiver on again, and without supplying

plying the Fire any more, let what will come off, till all is cold, which will be about a Pint more; and is a pretty Water to wash your Fingers and Mouth after Meals.

C H A P. IX.

Of VINEGAR.

WINE becomes eager by a second Fermentation; for that causeth the Loss of some of its most subtile sulphureous Spirits, by which Debilitation, the acid Salts predominate, and fix the rest of the Spirits remaining in the Wine.

Distillation of Vinegar.

PUT of good Wine-Vinegar into a large Retort, or Body fitted with a Head, what quantity you please, so that one third part remain empty; place it in a Sand-Furnace, and with a Fire of the first Degree draw off a fifth part, which keep by itself, for it will serve for some Uses; then increase the Fire
to

to the second Degree, and so continue till all is distill'd, except a small quantity left in the bottom of the Vessel, of the Consistence of Honey. When all is cold, take off the Receiver, and if you would rectify it, put it into a clean Vessel; set it in the same Degree of Fire, to separate more Phlegm, and in every thing proceed as before, till you come almost to a dry bottom; which, however, must not be urged too far, for fear it should give an Empyreuma to that which is already distilled.

Its chief Use is for the Dissolutions and Precipitations of several Bodies.

The Concentrated Spirit of Vinegar.

PUT distilled Vinegar upon Filings of *Venus*, or to that Scoria of *Venus* which the Brasiers call Spittle-Dust, and make it into a Paste; let it stand some time without Heat, to penetrate the *Venus*; evaporate over a very gentle Fire, till you begin to smell the Fumes of the Vinegar: then take it presently away, and imbibe it again; let it stand again to imbibe, without Heat, and then evaporate as formerly: do this so often, till you perceive an eager Scent at the beginning

ginning of the Evaporation, which signifies the *Venus* is fatiated with the distilled Vinegar: Put this fatiated Calx into a Retort, place it in a Sand-Furnace, fit to it a Receiver, and lute well the Joint with a wet Bladder; give it the first Degree of Fire for two Hours; then increase it to the second two or three Hours more; and so to the third three Hours longer, at last give it the fourth Degree for two Hours more: then let all cool, and in the Receiver you will have a concentrated Vinegar, which is called Spirit of Vinegar. You may still separate the more Phlegmatick Part by Rectification. It has all the Properties of distilled Vinegar, but will perform any Operation with more force, and in much less quantity.

Observe, That the same *Venus* will serve several times for the Concentration of more distilled Vinegar.

C H A P.

C H A P. X.

Of TARTAR

T is the essential Salt of Wine, which after Fermentation separates and adheres to the sides of the Casks. It is Red and White; the White contains less Earth than the Red; and is therefore preferable to the Red: the best white Tartar, is that of Rhenish-Wine, which comes from *Germany*. The Lees of Wine also contain much Tartar, which being dry'd and calcin'd, are call'd *Cineres Clavellati*; out of which, a Salt of Tartar may be extracted.

Chrystals, or Cream of Tartar.

TAKE of Crude Tartar, what quantity you please; boil it in Water, till the Parts which are capable of Dissolution, be entirely dissolved: run the Liquor, whilst it is hot, through a Flannel-Bag into an Earthen-Pan, and evaporate till a Pellicle appears: then set it in a cold Place, and suffer it to stand quiet two or three Days; afterwards, decant the
Liquor

Liquor, and you will find the Chryftals adhere to the fides of the Pan; fcrape them off, and evaporate the reft of the Liquor as before, and fet it again to fhoot into Chryftals: Repeat the Evaporation, till all the Chryftals are fhoot.

Its Operation is Cathartick and Diuretick.

It Dofe is from half a Dram to one Ounce.

The fix'd Salt of Tartar.

TA K E what quantity of Crude Tartar you please; calcine it in a Pot or Glas-Houfe: or you may put three or four Pounds of it in ftrong brown Paper, which tie up with Thread, and wet it with Water; then put it upon fome burning Charcoals, and bury it with more Coals: there let it continue, till all that is combuftible be confumed, and you will find the calcin'd Tartar in an entire Lump. Diffolve it in warm Water; then filter and evaporate it to drinefs, in a clean Iron or Earthen-Pan, and that which remains, is the fixed Salt of Tartar; which may farther be purify'd by Diffolution, Filtration, and Evaporation,

poration, till in the Dissolution it leaves no Fæces.

It is a good Aperitive Salt, and used to draw Tinctures from Vegetables; and is given in all Obstructions.

Its Dose is from fifteen Grains to one Dram.

Some think it is of the same Use with every fixed Vegetable Salt.

Let this Salt be laid in a Cellar, or other cool moist Place, and it will attract the Air, so as to liquify it, which after Filtration, we call Oil of Tartar *per deliquium*.

It is endued with all the Virtues of the Salt, and is sometimes dropped in Lilly, Bean-Cod, or Orange-Flower-Water, to clear the Complexion.

Soluble Tartar.

MIX four Ounces of Salt of Tartar with eight Ounces of Cream of Tartar, and pulverize them together: put them into an Earthen-Pan, whereinto you have poured three Pounds of Spring-Water; boil them till they are dissolved, and remember to stir them now and then. Filter the Dissolution whilst

whilst it is warm ; evaporate to driness, and keep it in a Glafs well stopp'd.

Its Operation is Cathartick and Diu-
retick.

It is given in Obstructions, Cachexies,
and Dropsies.

Its Dose is from one Scruple to a
Dram, or a Dram and a half, in Broth,
or any other proper Vehicle.

Chalybeated Soluble Tartar.

TAKE half a Pound of the Tincture
of Tartar, made with Steel, and
put it into a Glafs-Body ; pour upon
it two Ounces of the aforesaid soluble
Tartar ; set the Glafs in a gentle Heat
of Sand to evaporate : stir it about some-
times with a clean wooden Spatula ;
and when it is dry, you will have a
black Powder, which keep in a Vial well
stopp'd.

It is a good Aperitive, and is en-
dow'd with all the Virtues of the Tinc-
ture of Tartar, with *Mars* : according
to the Description in the Chapter of
Mars.

Its Dose from one Scruple to one
Dram, or one Dram and a half.

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Chalybeated Tartar.

POUR three Pints of Spring-Water into an Earthen-Pan, and set it over the Fire to boil; as soon as it boils, put in half a Pound of Chrystals of Tartar, and half an Ounce of Vitriolum Martis, (finely powder'd apart) and afterwards ground together: let them boil a quarter of an Hour, stirring them with a wooden Spatula, till they are dissolved; then strain the Mixture, boiling hot, through a Cotton-Bag, into a clean Pan, and set it in a cold Place to shoot into little greenish Chrystals.

It is endued with the Qualities of the foregoing Preparations; and its Dose from one Scruple to one Dram.

Emetick Tartar.

TAKE Cream of Tartar, half a Pound; Crocus Metallorum, two Ounces; let them be very finely powder'd, and after they are well mixed, put them into a glaz'd Pot, and add two Pounds of Spring Water; let them boil seven or eight Hours, stir them often, and as
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the Water wastes, supply it; take off the Mixture from the Fire, boiling, and run it presently through a Flannel-Bag: then evaporate two thirds in a Glafs-Body, in Sand, and set it in a cold Place to shoot. Separate the superfluous Water, and evaporate as before; gather the Chrystals, dry them gently, and keep them in a Vial for Use.

It is a gentle Emetick.

Its Dose from three to ten or twelve Grains.

The Soluble Emetick Tartar.

PUlv erize four Ounces of Chrystals of Tartar with one Ounce of Crocus Metallorum; grind them well together, and put them into a Glafs-Body; pour upon them half a Pound of Spirit of Urine; and when the Ebulition is well over, add twelve Ounces of Spring-Water: Boil them in a Sand-Heat seven or eight Hours, supplying the Liquor as it consumes. Take it from the Fire as hot as you can, and run it through a fine Flannel-Bag: then evaporate it gently, till it is dry, and keep it in a Vial for Use.

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It is a very good Emetick.

Its Dose from four to fifteen Grains, in Broth, or thin Water-gruel.

The Emetick and Cathartick Salt of Tartar.

TAKE of Salt of Tartar, half a Pound; Crocus Metallorum, two Ounces; make them both into fine Powder, and mix them well; put them into a Crucible, and let them melt together half an Hour; then take it from the Fire, and dissolve it in clean Water: Filter the Dissolution, and evaporate, till a Skin appears: then drop gradually into it, Oil of Vitriol, till the Ebullition ceases, and over a gentle Heat of Sand, evaporate to driness: stir it, in the Evaporation, with a Glass-Spatula, or clean Tobacco-pipe; and when it is cold, put it up into a wide-mouth'd Vial, well stopp'd, for Use.

Its Operation is Emetick and Cathartick.

It is a Febrifuge, given with good Success in Tertian and Quartan Agues; also in Dropsies, Scurvy, Jaundice, and Hypochondriack Melancholy.

Its

Its Dose is from three to fifteen Grains.

Vitriolated Tartar.

PUT what quantity of Oil of Tartar you please into a Glafs-Cucurbit; drop gradually upon it, rectify'd Oil of Vitriol, till the Ebullition ceases: then evaporate the Humidity in a gentle Heat of Sand, and there will reside a very white vitriolated Tartar, which keep in a wide-mouth'd Glafs well stopp'd.

It is a little Cathartick and Diuretick, and a good Aperitive, given in Quartans, in Scrophulous and Hypochondriacal Cafes.

The Soap of Tartar.

TAKE Rhenish-Wine Tartar, or Cream of Tartar, and Salt-Petre, of each one Pound, in powder; mix them well together, and put them into a red-hot Crucible by a Spoonful at a time: when it is melted, take out the Mixture, with a little Iron-Ladle, and put it into a warm Earthen-Pan, adding to it so much warm Water as is necessary to dissolve it: filter and dry it into a

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Salt,

Salt, and grind it into impalpable Powder, or as fine as possibly you can: then put it into a wide-mouth'd Glass, and expose it to the Air, till it is a little moistened, which it will sufficiently be in sixteen, eighteen, or twenty-four Hours, according to the moistness or dryness of the Weather: then put to each Pound of the Salt, four Ounces of rectify'd Oil of Turpentine; stir them well together with a wooden Spatula, till they seem to be incorporated: then set the Mixture aside, and cover it, to keep out the Dust. Stir it well two or three times a day, till you perceive the Oil and Salt incorporated, and of the Consistence of a Syrup: If it wants Oil to make it of that Consistence, add more.

This Soap is an excellent Diuretick, and something Cathartick, and is given in the Stone and Gravel in the Bladder or Kidneys.

Its Dose from one Scruple to a Dram, in a little fine Sugar.

It is called the Corrector of Vegetables, and the chief Ingredient which corrects the Opium in *Starkey's* or *Matthew's* Pill.

The Distilled Oil and Spirit of Tartar.

FILL an Earthen or Coated-Glass-
Retort, half full with Cream of
Tartar; place it in a Reverberatory-
Furnace, and lute to it a Receiver: let
the Fire of the first Degree be for three
or four Hours, then increase it to the
second three Hours longer, and on to the
third three or four Hours more; at
last to the fourth Degree, where keep
it, till no Fumes ascend into the Re-
ceiver, in which you will find a foetid
Oil and Spirit: You may separate the
Oil by filtering it through a Coffin of
Paper. Then put the Spirit in a long-
boll'd Retort, and in a gentle Heat of
Sand rectify it, and separate the Phlegm
which comes over after the subtile Spi-
rit.

To make this Spirit more aperitive
and excellent, to three Parts of the Oil
and Spirit, which your Distillation pro-
duced, put one Part of Spiritus Nitri
Dulcis; shake them well in the Recei-
ver, and put them carefully into a clean
Glass-Retort, which set in a Sand-Fur-
nace; fit and lute on a Receiver, and
giye it a Fire of the first Degree, till the

Lute be dry : then advance to the second ; in which you will have a most penetrating and grateful Spirit, which is one of the most powerful Diaphoreticks that I know. It is also Diuretick and Anodyne.

It is given in the Palsy, Epilepsy, Asthma, Hysterical Maladies, Scurvy, and in Fevers, with good Success.

Its Dose is from two Scruples to two Drams, in any proper Vehicle.

A Volatile Salt of Tartar.

TAKE the Lees of Wine, and dry them gently ; when dry, beat them into gross Powder : fill a Glass coated, or Earthen-Retort, half full with them ; place it in a Reverberating-Furnace, give it a gentle Fire to drive off the Phlegm which first comes over ; and when you perceive Fumes to rise, fit and lute on the Receiver, augmenting the Fire gradually ; till at last, with the most extreme Degree, no more Fumes will arise. Then let all cool, and take off the Receiver, in which you will find a whitish Liquor, which contains the Volatile Salt, and upon it will swim a little foetid Oil ; put it into a Vial, and with a little clean Water rince out the
Salt

Salt which adheres to the sides of the Recipient, and put it to the rest: Then put them into a Coffin of brown Paper, and the Spirit with the Salt will pass through, and leave the Oil in the Coffin.

Put the Spirit into a long Matrafs; fit to it a Head and Receiver; lute the Joints well, and with a gentle Heat of Sand sublime the Salt into the Head: when it is pretty well charged, take off that Head, and presently fit on another; and continue the same Degree of Fire, till the Salt begins to melt: then change the Head, and augment the Heat a little, to distil the Volatile Spirit of Tartar. When the Drops are insipid, take off the Receiver, and keep the Spirit from the Air in a Vial well stopped, because of its Volatility, as also the Salt; for if the least Air be admitted, the Salt will relent.

Its Operation is Diaphoretick and Diuretick.

Its Dose from ten Grains to half a Dram. It is a Medicine much esteemed by many Physicians; and is given in the Palsy, Apoplexy, Epilepsy, Tertian and Quartan Agues: It opens all Obstructions, and provokes the Terms. The Vo-

latile Spirit is some of the Phlegm impregnated with the Salt, and endued with the same Virtues, and given from ten Drops to two Scruples.

Another Volatile Salt of Tartar.

TAKE the fatiated Salt of Tartar, (described to make the true tartariz'd Spirit of Wine;) fill a Coated-Retort half full with it; place it in an open Furnace, lute on a Receiver, and give it a gradual Fire; observing the same Method as in the former Operation, both in the Distilling and Rectification.

Tincture of Tartar.

PUT a Pound of Salt of Tartar into a Crucible; place it in a Melting-Furnace, and let it heat gradually, till it is of a white Melting-Heat; cover it well with Coals, and keep it in the most extreme Degree of Fire, five or six Hours: then pour it into a warm Mortar, and whilst warm, powder it, and put it into a Matrafs, heated upon warm Sand, to preserve it from breaking with the hot Salt: then pour upon it twenty Ounces of tartariz'd Spirit of Wine; invert and lute well to it, another Matrafs,

trafs, to make it a double Veffel. Make a gentle Fire, and let it fimmer fix or feven Hours, and in that time it will acquire a good Tincture: which when cold, put into a Vial, and keep it well ftopped.

Its Operation is Diaphoretick and Diuretick. It is an excellent Aperitive, and a good Anti-fcorbutick.

Its Dofe from ten to fifty or fixty Drops, in any convenient Vehicle.

The Secret Corrector.

I Have before taught you how to make a very good Soap of Tartar; but this, which follows, I have kept many Years for private Experiments: and indeed it has afforded me abundance of Satisfaction.

Take Cream of Tartar, and purified Nitre, *ana* three Pounds; powder and mix them, and put them by Spoonfuls, into a red-hot Crucible: when it is melted, difsolve it in warm Water, filter the Diffolution, and evaporate to a dry Salt: powder this Salt, and put it into a clean Glafs-Body, and add three times its Weight of pure diftill'd Vinegar, (by half a Pint at a time;) shake the
Glafs,

Glass, and place it in a Sand-Furnace ; then draw off the Liquor, which will be an insipid Phlegm : Dissolve the Salt again in Spring-Water ; filter and evaporate as before ; powder the Salt, and put it into a clean Body, adding three times its Weight of pure distilled Vinegar, and draw it off as before. Repeat these Operations, till the Salt has no Fæces, and the distill'd Vinegar comes off as acid as when put on. This is the foliated Salt of Tartar, which readily dissolves in Spirit of Wine.

To this foliated Salt, put so much Spirit of Wine as will dissolve it ; let it settle, and decant the Spirit ; draw off the remaining Spirit by a gentle Heat. Take one Pound of this Salt, and of *Offa Alba* (made with Spirit of Wine and Spirit of Urine) half a Pound ; grind them well together, and add a Pound and a half of Spirit of Wine, impregnated with any essential Oil, (according to your intended Use ;) as Oil of Turpentine, Juniper, Sassafras, Mint, Marjoram, Savine, Cloves, Cinnamon, &c. Put them into a Body, with its Head and Receiver ; lute the Joints, and draw off the Spirit of Wine, with so very gentle a Heat in Ashes, as will only elevate the Spirit, and leave the Oil with
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the Salt: impregnate the Spirit with more Oil, and return it upon the Salt. Repeat the Operation, till your Salt is become a Soap. This is the grand secret Corrector of Vegetables, Animals, and Minerals: For the Use of it, I refer you to the Ingenious Dr. George Starkey's *Corollary Appendix to his Pyrotechny Asserted and Illustrated.*

Observations.

IF you dry the crude Tartar in an ^{*Cream of*} Oven, till it is a little scorched (not ^{*Tartar.*} calcin'd) to evaporate some of its acid Particles, it will dissolve more easily, and the Chrystals will be larger and whiter than otherwise they would be.

The first Evaporation may be made in ^{*Salt of*} a clean Iron-Pan, in which the Liquor ^{*Tartar.*} ought to be kept stirring, when it begins to coagulate, till the Salt is quite dry; and if you design a farther Purification, and that it is not so white as you expect it, put it into a Crucible, and set it in a little Charcoal Fire (so that it do not melt)

melt) and in a quarter of an hour's time, it will be very white.

*Soluble
Tartar.*

If you desire it to chrySTALLize, evaporate only till a Scum appears; then in a clean Earthen-Pan, or wide-mouth'd Glass, set it in a cold Place to shoot into ChrySTALS, which must be carefully dry'd, and kept close stopped, because they are apt to dissolve.

Chalybeat

Sol. Tartar.

Be careful in the drying of it, that it be not burnt, because burning deprives it of its Cathartick Quality.

Chalybeat

Tartar.

It may be made with the Vitriol, or Filings of *Mars*; if you put one Ounce and a half of Filings in the place of half an Ounce of Vitriol, and bake the common ChrySTALS of Tartar to a brownness, it will dissolve with more ease, and the ChrySTALS will be fairer.

Emet.

Tartar.

It may be made with *Crocus Metallorum*, *Vitrum Antimonii*, Flowers of Antimony, or *Mercurius Vita*: The Cream of Tartar, as before, being baked, will render the Emetick ChrySTALS more large and fair.

The Spirit of Urine partly fatiates the Acidity of the Tartar, by which it more readily dissolves. Take care to dry it without burning.

*Soluble
Emet.
Tartar.*

This Evaporation will be best performed in a Glass-Cucurbit; because the Inspissation of the Oil of Vitriol would prey upon the Glazing of an Earthen-Vessel, to the prejudice of the Medicine.

*Emet. Ca-
thart. Salt
of Tartar.*

It may be made of pure Salt of Tartar, instead of the Oil, inspissating the Oil of Vitriol upon the Salt, and stirring it with a Glass-Spatula, or clean Tobacco-pipe, till the Fermentation is over: but take care you do not evaporate too much, lest you deprive it of the Acidity it ought to retain.

*Vitriolated
Tartar.*

The Salt may be evaporated in a clean Iron-Pan; and if it be a little moistened by the Air, before the Oil is put to it, their Union will be facilitated thereby. You may also distil the Oil of Turpentine from Aromatick Herbs and Spices, to give it an agreeable Scent. The older this Sapo is, the better it is: I have several Ounces of it by me now, which

*Soap of
Tartar.*

which I made in the Year 1665; and I value it as much as its Weight in Gold.

*Distillat.
of Tartar.*

The Phlegm may be separated either at the first Distillation, or in its Rectification: If at the first Distillation, put on the Receiver, without luting it; and when the white Fumes appear, change, and lute on the Receiver.

*Vol. Salt
of Tartar.*

If you can have such Lees as the Juice is pressed out of by those who make Vinegar, it will save you the labour of drying them, and will be altogether as good for this Operation: And if in the Rectification, you desire to preserve the Salt in a dry Form, you must be watchful; and when you see the Salt have the least Inclination to Dissolution, you must change the Head, presently take out the Salt, and put it into a dry Vial, well stopping it, to preserve it from the Air, which would presently dissolve it: But if so much Water come over with it, as to render it in a liquid Form, it then has the same Effect with the Salt, being given in a greater Dose.

If after the Rectification, you separate the Phlegm from the Oil, and return the Volatile Spirit upon it, and put to
them

them a third of their Weight of sweet Spirit of Nitre; digest them in a double Vessel two or three Days, in a gentle Heat: then unlute the Vessel, and fit and lute on a Head, with its Receiver, and you will obtain, with a gentle Heat, a most excellent and penetrating Salt and Spirit.

Melt not less than one Pound of the *Tincture* Salt, because it wastes considerably, by *of Tartar.* long Fusion; and be sure that your Spirit of Wine be totally dephlegmated, otherways your Tincture will not be full.

If you can have Patience, and proceed carefully, you may volatilize every *The Secret* Grain of this Salt: I have often done *Correcter.* it, and with pleasure seen the good Effects of it, in a Medicine only prepared by myself.

C H A P.

C H A P. XI.

Of *A L O E S.*

IT is the Juice of a Plant called *Semper - Vive*, which grows in *Egypt*, the Island of *Socotra* in the *Persian-Gulph*, in the Island of *Barbadoes* in the *West-Indies*, and other Places.

That of *Socotra* is accounted the best, because they transplant and cultivate it; but in other Places they use the Plant wild, as they find it. Every Country produces two sorts of it; *viz.* that made of the Juice which drops from the Plant by Incision, and that made of the expressed Juice. *Hepatick Aloes* is that sort made by Incision in all Countries, and takes its Name from its Similitude to the Liver.

The History of this Plant is very well worth reading; its sudden and vast Increase (even to twenty Feet high, with a Stem as thick as a Man's Thigh) and that in a very few Days, is very surprising! But such a one *Dr. Brown* saw in the Gardens of *Conte Augustino Giusto*, at *Verona*. *Vid.* his Travels, p. 202. And the

the like also was, not many Years since, in a Garden at *Lambeth*. *Vid. etiam Petri Borelli Observat. Cent. I. Observat. I.*

Extract of Aloes.

Dissolve what quantity of Aloes Succotrine, or Hepatick, you please, in the distilled Water of Roses, Succory, Borage, or any other; filter the Dissolution through a Flannel-Bag, and evaporate to the Consistence of an Extract. A better Extract is made with Spirit of Wine; but the best is made with Tincture of Tartar, which does not only correct the Crudity of the Aloes, but that pure Salt of Tartar, the Spirit of Wine is thereby impregnated with, will preserve it in its full Virtue, and due Consistence, very many Years.

Observe, That if the Aloes be very good, it will almost all dissolve, leaving nothing behind it, but some Dirt, which accidentally in its drying falls into the Juice.

C H A P. XII.

Of *MYRRH.*

IT is a Resinous Gummy Juice, which drops from a little Thorny Tree by Incision. The best is in transparent smooth Drops ; and when new, of a whitish Colour, but in time becomes yellow, but continues transparent, and breaks with little white Specks in it : Such as this is not often met with ; but of such as is commonly vendible, chuse that which is yellow, or red, bitter, transparent, and of a grateful Smell.

It grows in *Abyssine* in *Africa*, and *Moco* in *Asia* : That of *Abyssine* comes through *Egypt* into *Europe* ; and that from *Moco*, by the Caravans to *Aleppo*, &c.

Tincture of Myrrh.

PUT into a Matrafs of fine Myrrh, in Powder, one Pound ; of Spirit of Wine, four Pounds : invert another Glas into the Mouth of the Matrafs, to make a double Vessel ; lute the Juncture, and set

set it in a gentle Heat of Sand, to extract its Tincture.

It is Sudorifick and Aperitive: It is given in the Apoplexy, Lethargy, and Palsy; is good to expedite Womens Labour, and is often apply'd outwardly.

Its Dose is from eight to twenty-four Drops, in a proper Vehicle.

Oil of Myrrh by Distillation.

FILL a Retort half full with coarse Myrrh, place it in a Sand-Furnace, and lute to it a Receiver; give it Fire by degrees, to the greatest height: when the Fumes cease, let out the Fire, and in the Receiver you will have a fœtid Oil and an acid Spirit.

The Oil is externally apply'd to bring stubborn Ulcers to Suppuration. The Spirit is Diaphoretick and Diuretick.

Its Dose is from eight to twenty-four Drops, in a proper Vehicle.

Oil of Myrrh per deliquium.

BOIL Eggs, till they are hard; split them in the middle, and take out the Yolks; fill the Cavity with fine

S 2

Myrrh,

Myrrh, in Powder ; place them upon little Sticks of about an Inch and a quarter long, three or four of them being pricked into the Egg ; set them in a clean Earthen-Pan, in a Cellar, or some such moist Place, and there will drop from them into the Pan, a Liquor, which is called *Oil of Myrrh*.

Its Use is to take away Spots and Blemishes on the Skin, outwardly apply'd.

Observations.

Tincture of Myrrh. **S**HAKE the Myrrh and Spirit of Wine well, two or three times every day, and let it be charged with a full Red, before you pour it off from the Myrrh, which will require two or three days time.

Oil and Spirit of Myrrh.

You may rectify the Oil and Spirit together, and then separate them ; then put to the Spirit a fourth part of its Weight of *Spiritus Nitri Dulcis*, and rectify them ; by which the Spirit will be

be render'd more agreeable to Smell and Taste, and made more aperitive.

It is improperly called Oil, being only some of the most subtile Parts of the Myrrh, liquify'd by the Moisture of the Air. If any Dirt has accidentally fallen into the deliquiated Oil, you may filter through a Paper.

The Oil per deliquium.



C H A P. XIII.

Of SAFFRON.

IT is a Flower which comes to its Perfection in the latter end of *September*, and in *October*. That of *England* is accounted the best, both for the largeness of the Leaf, its Fragrancy, and Colour. The *English* have also a way to preserve it, exceeding that of any other Country.

Tincture and Extract of Saffron.

PUT four Ounces of good *English* Saffron into a Matrafs, with twenty-four Ounces of Spirit of Wine; let them stand in a gentle Heat of Sand forty-eight Hours, sometimes shaking them, and you will find the Spirit well charged with the Tincture of the Saffron: pour off the tinged Spirit, and put on one Pound more, proceeding as you did before, and you will have a second Tincture, but not altogether so deep as the first: put both the Tinctures into a Cucurbit, place it in Sand, lute on its Head and Receiver, and in a gentle Heat draw one half of the Spirit of Wine off, and that which remains behind will be a strong Tincture.

This Tincture is made into an Extract, by evaporating it to a due Consistence.

Observations.

After Decantation of the tinged Spirit, you may add new Spirit of Wine, as long as it yields any Tincture, and then put all the tinged Spirits into a Cucurbit, and draw off, till you leave not above twenty Ounces of Tincture in the Cucurbit.

In a very gentle Heat of Ashes, distil off as much Spirit of Wine as you can, without burning the Extract; then pour it into the bottom of a Glass, cut shallow, or a clean smooth Earthen-Vessel: set it upon so much Hay or Straw, as to stand firm in a Balneum; and in that Heat keep it continually stirring, till it is evaporated into an Extract.

C H A P. XIV.
Of *E L I X I R S.*

ELIXIR is the Name of a Medicine, intended (by Adepts) to heal all human Diseases, and remove the Impurities of imperfect Metals: But my design is only to handle those Vegetables, whose essential Parts being separated from the grosser and more feculent, by proper Menstruums, and the Industry of the Artist, will yield greater Medicines by the Union of their Virtues; and so may not improperly, tho' subordinately, be called by the Name of *Elixirs.* And first of *Elixir Proprietatis.*

Elixir Proprietatis, with Oil of Sulphur.

TAKE of the best Aloes, fine Myrrh, and *English* Saffron, of each one Ounce; let the Myrrh and Aloes be beaten into fine Powder, and the Saffron cut into small pieces; put them into a long Body, or Bolt-Head, and put to them nine Ounces of tartariz'd Spirit of Wine; make the Vessel double, fit for Circulation, and set it in a gentle Heat

Heat for seven Days, shaking it once or twice a day: then unlute the Vessel, and put to the Tincture three Ounces of *Ol. Sulph. per C.* by an Ounce at a time; and when all is in, shake them well, lute on the other part of the Circulatory, and let them stand in Warmth fourteen Days, agitating them as before, once or twice a day; then let them cool, and press out all the Moisture thro a strong Cloth: let it stand, till settled, and by Decantation separate the Elixir from the Fæces; put it into a Vial, and keep it close stopped for Use.

Its Operation is Diaphoretick and Aperitive: It fortifies the Heart, and purifies the Blood, creates an Appetite, and helps Digestion; and some account it a great Preservative against pestilentious Air, with many other Virtues.

Its Dose is from ten to fifty or sixty Drops, in Wine or Water, Beer or Ale, Broth, or Spring-Water, or any other Vehicle appropriated to the Disease you would remove by it.

Elixir

Elixir Proprietatis, with Tincture of Tartar.

TAKE of Select Myrrh, Aloes, and Saffron, *ana* one Ounce; beat and cut as before; put them into a Vessel of Circulation, and pour upon them twelve Ounces of Tincture of Tartar: place them in a gentle Heat, to stand twenty-one Days, shaking the Mixture every day; then let it cool, and press it out as you did the former; let it settle: Decant the Elixir from the Fæces, which put into a Vial, and stop it for Use.

Its Operation is Diaphoretick and Diuretick; and is said to have all the good Qualities of the former, and to be more aperitive, and a greater Sweetner of the Blood.

Its Dose is from one Scruple to one Dram and a half.

Elixir Proprietatis, with Spirit of Hart's-Horn.

TAKE of the best Myrrh, Aloes, and Saffron, *ana* one Ounce; tartariz'd Spirit of Wine, eight Ounces; Spirit of Hart's-Horn, four Ounces; and pro-

proceed in every thing as in the preceding
Process.

This is also Diaphoretick and Diure-
tick, and endued with the Virtues of the
former, but more effectual in Hysterick
Vapours.

*Elixir Proprietatis, with Sal. Volat.
Oleosum.*

TAKE of choice Myrrh, Aloes, and
Saffron, *ana* one Ounce ; place
them in a Circulatory Vessel, and put
to them of tartariz'd Spirit of Wine,
four Ounces ; and of *Sal. Vol. Oleosum*,
nine Ounces, and proceed in every thing
as before.

It is Diaphoret. and Diuret. is proper
in all Cafes where the former is useful,
and more agreeable both to Scent and
Taste.

Its Dose the same with the other.

Anti-Convulsive Elixir.

TAKE of Spirit of Salt Armoniac,
(made with Salt of Tartar) four
Ounces ; of tartariz'd Spirit of Wine,
eight Ounces ; unrectify'd Oil of Amber,
two

two Ounces; and two Drams of Oil of Caraway-seeds: put them into a Retort, and distil in a gentle Sand-Heat. Return the Oil and Spirit upon the Residue, and re-distil, repeating the Cohobations, till the Spirit, Oil, and Salt are perfectly united: then put into a Matrafs, half an Ounce of Cassumunar, one Ounce of Russia-Castor, two Ounces of the Seeds of Male-Pæony, and one Dram of Assa-fœtida; pour the Spirit upon these Ingredients, set the Matrafs in a digesting Heat, four or five Days, and then decant the Elixir.

The Dose is from three to threescore Drops in Black-Cherry-Water, &c.

An Opening Martial Elixir.

TAKE of Salt Armoniac, and Salt of Tartar, *ana* one Pound; dissolve them (separately) in a sufficient quantity of Water; mix the Dissolutions, and pour them upon one Pound of Filings of Iron, in a Matrafs, which stop close, and let it stand in a gentle Heat two or three Days, shaking it often every day; then let it settle, and decant it carefully. Into three Pounds of this Liquor, put of Myrrh, Aloes, Saffron, and the dry'd Leaves of Savine, *ana* two Oun-

Ounces : let them digest three Days, shaking the Matrafs as before; decant the Liquor, and to the Residence put one Pound of the rectify'd Spirit of Wine, and let them digest forty-eight Hours : then decant the Liquid, and with your Hand press the Residence through a straining Cloth. Mix this Spirit and the former Liquor ; shake them, let them settle, and decant the clear for Use.

It powerfully opens all Womens Obstructions, and is of great Use in Hysterick and Hypochondriacal Cases.

The Dose from twenty to fourscore Drops.

The Anti-Pestilential Elixir Proprietatis.

TAKE of Myrrh, Aloes, Saffron, and Camphor, *ana* one Ounce ; *Virginia* Snake-Root, and Cochineal, *ana* half an Ounce ; powder what is to be powdered, mix the Ingredients, and put them into a Matrafs ; pour upon them *Spiritus Nitri Dulcis*, twelve Ounces, and let them stand in Digestion twenty-one Days, observing every thing as in the foregoing Process.

This

This is said to be the most powerful Medicine against the Plague, and all contagious Diseases, that is yet known: It expels Wind, and is an excellent Remedy against the Cholick, and all Gripings of the Stomach and Bowels; a great Aperitive, and gives ease in the Stone, both in the Reins and Bladder.

Its Operation is Diaphoretick and Diuretick.

Its Dose is from half a Scruple to one Dram, or one Dram and a half, in any proper Vehicle.

The Volatile Elixir Proprietatis.

IT is the foregoing Elixir, with Spirit of Wine, nine Ounces; and Oil of Sulphur, three Ounces; with the same Proportions of Myrrh, Aloes, and Saffron; which after Digestion must be distilled in a gentle Heat, with two Cohobations of the same Spirit, and must be drawn off with three days Digestion between each Cohobation.

It has the same Virtues with most of the preceding Elixirs, and is more agreeable to the Palates of many People.

Its

Its Operation is Diaphoretick and Diuretick.

Its Dose from ten Drops to a hundred in any proper Vehicle.

Elixir Vitrioli.

TAKE Galangal, one Ounce and a half; Calamus Aromaticus, Mint, and Sage dried, *ana* half an Ounce; Cinnamon, Cloves, and Ginger, *ana* three Drams; Nutmegs and Cubebs, *ana* two Drams; Lignum-Aloes and Lemon-peel, *ana* one Dram; white Sugarcandy, three Ounces; all pulveriz'd: put them into a Matrafs, and pour upon them Oil of Vitriol, one Pound; Spirit of Wine, one Pound and a half. Invert another to make it a double Vessel; lute the Joint, and set it in a gentle Heat to digest, fifteen or twenty Days. It is accounted a good Stomachick.

Its Dose from ten to sixty or seventy Drops.

Elixir Pæonia.

TAKE of the *English* Roots of *Palma Christi*, *Pyrethrum*, *ana* one Ounce; Mistleoe of the Oak, Fennel-Seeds, *Anacardia*,

cardia, *ana* six Drams; Rosemary-Flowers, *Stæchas Arab.* Lavender, *ana* three Ounces; Shavings of Hart's-Horn, Elks-Hoof, Man's Skull, *ana* one Dram and a half; Marjoram, one handful; rectify'd Spirit of Wine, two Pounds: digest these fourteen Days, and then distil in *Balneo Mariæ*; to which add the Roots, Flowers, and Seeds of *Pæony*, *ana* one Ounce; *Spec. Diamosc. Dulcis*, *Xyloaloes*, of each half an Ounce: digest them a Month, and filter.

To twelve Ounces of this Tincture, add one Dram and a half of Salt of *Pæony*, and four Ounces of Spirit of *Vitriol* rectify'd and impregnated with Native Cinnabar: then circulate them into an *Elixir*.

Otherways it is made as followeth:

TAKE the Root of *English Palma Christi*, *Pyrethrum*, Mistletoe of the Oak, Fennel-Seeds, *Anacardia*, Rosemary-Flowers, Marjoram, *Stæchas Arab.* Castor, and Lavender, in the foregoing quantities: and (instead of the Shavings of Hart's-Horn, Elks-Hoof, and Man's-Skull) take of the Aromatick Spirit of Hart's-Horn, hereafter mentioned, (*vid.*
Chap.

Chap. of *Hart's-Horn*) half an Ounce: digest them all in two Pounds of rectify'd Spirit of Wine fourteen Days; at the end of which, distil them *in Balneo Mariæ*, or a gentle Heat of Sand or Ashes; and to every Pound of this distilled Spirit, add four Ounces of rectify'd Spirit of Vitriol, the Roots, Flowers, and Seeds of *Pæony*, *ana* one Ounce; *Spec. Diamosc. Dulcis*, *Xyloaloes*, of each half an Ounce; and with one Dram of Salt of *Pæony*, circulate into an Elixir.

Elixir Salutis.

TAKE of the Leaves of Sena, half a Pound; Jalap, in Powder, four Ounces; *Enula Camp.* also in Powder, and Liquorish, *ana* two Ounces; Juniper-Berries, Anniseeds, and Coriander-Seeds, *ana* one Ounce; Cream of Tartar, one Ounce and a half; Honey and Manna, of each two Ounces; slice the Liquorish, put them into a Glafs-Body, and put to them *French-Brandy*, or clean *English* Proof-Spirits, four Quarts; lute on a Glafs, to make a Circulatory, and let them stand in a gentle Heat of Sand two or three Days; then pour off the Liquor, and press it out from the Ingredients, and let it stand in a Vessel close stopped, twenty-four Hours to settle; then by gentle Inclination,

tion, pour it from the Fæces, and keep it well stopped for Use.

Its Operation is Cathartick and Diu-retick.

Its Dose is from half a Spoonful to three or four Spoonfuls, either by itself, or in any convenient Vehicle.

Elixir, or Balsamum Polychrestum, different from that in the London Pharmacopœia.

TAKE of Sarsaparilla, four Ounces ; China-Root and Guaiacum, rasped, *ana* two Ounces and a half: let the Sarsaparilla and China be grossly powdered ; put them into a Matrafs, with three Pounds of tartariz'd Spirit of Wine ; stop the Mouth of the Matrafs with a little Egg, or Bolt-Head ; lute it well, and set it on warm Sand to digest three Days, shaking it now and then : then let it cool, pour out the tinged Spirit, and press what you can from the Ingredients. Put the tinged Spirit into the Matrafs again, and add to it of Gum Guaiaci in Powder, nine Ounces : lute up the Glafs, and let it stand in Digestion three or four Days, and shake it often every day : Then let it cool and settle, and pour off the Tincture from the Sediment ; put the Tincture into a clean Matrafs,

Matrafs, and put to it one Ounce of Balsam of *Peru*, and half an Ounce of Balm of *Gilead*; mix them with the Tincture, by much Agitation; let them stand in Digestion, as before, three or four Days longer, and shake them often. When the Balsam is well incorporated with the Tincture, pour it off clear into a Vial, which stop and keep for Use.

It is Cathartick, and sometimes Diaphoretick.

Its Dose is from ten to seventy, eighty, or a hundred Drops, in any proper Vehicle.

To these Elixirs, there needs no other Observation, than to make good choice of the Ingredients, to lute the Joints of the circulating Vessels well, and to moderate the Heat, so as not to endanger the breaking of them.

Apoplectick Balsam.

TAKE of Oil of Cinnamon, one Dram;
of the Oils of Cloves, Lavender,
Marjoram, and Rhodium, *ana* two Scruples;
Oil of Rue, one Scruple; of Ambergrease,
half a Dram; of Musk, fifteen Grains;
of Civet, eight Grains; of Juice of Lemons,
fifty Drops; Oil of
T 2 Mace,

Mace, by Expression, and Balsam of *Peru*,
ana three Ounces; of liquid *Styrax*, one
 Ounce: First mix them in a Marble-Mor-
 tar, afterwards grind them upon a Stone,
 till they are entirely mixed: then put
 the Balsam into a wide-mouth'd Glass,
 ty'd close with a Bladder.



C H A P. XV.

Of O P I U M.

T is a Juice which distils from the
 Heads of Poppies, by Incision,
 found in the Kingdom of *Cam-
 baia*, about *Grand-Cairo* in *Egypt*, and
Thebes in *Grece*. Some tell us of three
 forts; *viz.* Black, Yellow, and White;
 but none of these come frequently
 amongst us, the Inhabitants of those
 Countries keeping them for their own
 Use, and sending us the expressed Juice
 of Poppy-Heads, thickened and wrapt
 up in Leaves, for the Convenience of
 Transportation. It is properly called
Meconium: Such may be also expressed
 from Poppy-Heads, which grow in *Italy*,
 and

and the Southern Parts of *France*, but not so strong as the former.

That which comes from *Thebes* is accounted the best. Chuse that which is black, breaking with a little Cast of yellow, free from Stubs or Leaves, a little acrimonous, of a very bitter Taste, and a disagreeable stupefactive Scent.

Extract of Opium.

PUT four Ounces of good Opium in thin Slices, into a Glass-Body, wherein there are two Pounds of Spring-Water; set it Sand, and stop the Mouth of the Body with another Glass; make fire under it, till by gradual Heat it is made to boil; in which state, keep it two or three Hours: then let out the Fire, and whilst the Dissolution is hot, run it through a Flannel-Bag, and press it strongly with your Hand into an Earthen-Vessel; put that which remains in the Bag into a Matrafs, in which there is a Quart of rectify'd Spirit of Wine; make a double Vessel of the Matrafs, and let it stand in Digestion twenty-four Hours, now and then shaking it: then take it out, and when it is cool, run it also through a Flannel, as before: put the Spirit of Wine, which

is charged with the Gummous Part of the Opium, that the Water was not capable of dissolving, into a Cucurbit, and in a gentle Heat draw off two thirds of the Spirit of Wine, which will serve again for the same Use: Then put both the Extractions together, and in a clean Earthen-Pan, with a moderate Fire, evaporate, till it is of a Consistence fit to form into Pills, which put up into a Gally-pot for Use.

It is the most certain Anodyne yet known to Physicians, and is fit for any Compound Laudanum.

Its Dose from half a Grain to two or three Grains.

Dr. Goddard's Compound Extract of Opium.

TAKE of Saffron and Nutmegs, *ana* one Ounce; of Castor, half an Ounce: slice the Nutmegs and Castor thin, and put them into a Matrafs, with the Saffron; put to them twelve Ounces of Tincture of Tartar; set them in a gentle Heat of Sand (with the Mouth of the Matrafs well stopped) in Digestion twenty-four Hours, shaking it often: then let it cool, and press it through a Cloth into a clean Earthen-Pan.

Pan. What stays in the Bag, put into the Matrafs again, and put to it half a Pound of rectify'd Spirit of Wine; let it stand warm twelve Hours, and strain it off to the other. Into these Tinctures put five Ounces of the Extract of Opium, set them over a gentle Fire to evaporate into an Extract.

It is a good Soporifick, and alleviates all Pains, in what part of the Body soever.

Its Dose from half a Grain to three or four Grains.

Liquid Laudanum, with Juice of Quinces.

TAKE two Ounces of good Opium, one Ounce of *English* Saffron, and one Pound and a half of the Juice of Quinces; let the Opium be thin sliced, and, with the Saffron, be put to the Juice of Quinces in a Glass-Body; some add Yeast of Ale to ferment it; set them in a gentle Heat of Sand, to digest, till the Fermentation is over, and the Saffron subsides: then express the Juice, and let it stand to settle; when it is settled, pour it off by gentle Inclination; put the Liquor into a Matrafs, and put to it two Ounces of Cinnamon, one Ounce and a half of Cloves, and one

Ounce of *Jamaica*-Pepper; let them be bruised, and put them into the Liquor to stand in Digestion fourteen Days: Then again express the Juice, gently evaporate it to a due Consistence, and put it up for Use.

Its Virtues are the same with the former.

Its Dose is from ten to forty or fifty Drops.

Liquid Laudanum, with Tincture of Tartar.

TAKE of choice Opium, two Ounces; Saffron, one Ounce; Cinnamon, two Drams; Nutmegs and Mace, *ana* one Dram. To these Ingredients in a Matrafs, put twenty-four Ounces of Tincture of Tartar; make the Matrafs a double Vessel; lute well the Joints, and set them in a Heat of Digestion three Days, shaking them every day: then open the Vessel, and add to the Mixture two Ounces of Juniper-Berries, bruised; let it stand in Digestion three Days longer, then let it cool, and press it through Flannel. Put the expressed Liquor into a Cucurbit, and with its Head and Receiver luted, set it over a gentle Fire of Ashes: draw off eight Ounces of the Spirit; let that which remains

mains, cool, and decant it gently from the Fæces, into a Vial well stoppt, which keep for Use.

Its Virtue and Dose the same with the foregoing.

Dr. Sydenham's Liquid Laudanum.

TAKE of select Opium, two Ounces ; Saffron, one Ounce ; Cinnamon and Cloves powdered, *ana* one Dram ; put them into a Matrafs, and pour upon them one Pint of good Canary-Wine ; let the Matrafs be fitted for Circulation, and set them in a good Heat of Digestion for three or four Days ; then press them through Flannel : let the Liquor settle, and by gentle Inclination pour it into a clean Vial, and keep it for Use.

Its Operation the same with the foregoing.

Its Dose is from ten to forty or fifty Drops.

Liquid Laudanum, with Sweet Spirit of Nitre.

TAKE two Ounces of the best Opium, which slice and put into a Matrafs, with one Ounce of Saffron ; and to them,
one

one Pound of Spiritus Nitri Dulcis: Invert into the Mouth of the Matrafs another Glafs; lute it, and fet it in Digestion five Days, (shaking it about every day;) then let it cool, and drop into it (by degrees) one Ounce and a half of *Sal Volatile Oleosum*. When the Fermentation is over, stop and lute it up again, and let it stand three Days longer in Digestion: Then let it cool, and fet it inclining to settle, and gently decant it into a Vial for Use.

It is an excellent and certain Anodyne, and a great Expeller of Wind, and seldom or never (that I have yet heard of) offends the Stomach or Bowels of the Patient.

Its Dose is the same with the former.

Liquid Laudanum, made with the Volatile Oily Salt.

TAKE four Ounces of the Extract of Opium; put it into a Marble-Mortar; grind it with half a Pound of Tincture of Tartar, which must be put to it by two Ounces at a time; grind them, till the Opium is well mixed with the Tincture of Tartar; then put them into a Matrafs, and put to them one Pound of *Sal Vol. Oleosum*, upon which
you

you must drop half a Dram of sweet Spirit of Nitre ; shake them well together, which will produce a little Fermentation ; when that is over, make a circulating Vessel of the Matrafs, lute the Juncture well with Bladder, and set in a gentle Heat of Digestion six Days, shaking it about every day.

Then let it fettle, and decant into a clean Vessel, both which keep well stopt for Use.

It is an excellent Laudanum, a certain Sudorifick, and a great Expeller of Wind.

Its Dose is from ten to thirty or forty Drops.

Matthews his Pill.

TAKE of the Extract of Opium, of black Hellebore, of Liquorish, and the Corrector, (or Soap made with Salt of Tartar and Oil of Turpentine, as before-mentioned) *ana* four Ounces : let the Hellebore and Liquorish be made into subtile Powder ; beat and mix these four Ingredients very well ; then with two or three Ounces of this Mass, mix one Ounce of good *English* Saffron, cut into small pieces, and beat them well together, till the Saffron is perfectly mixed

ed with the Mafs, fo that no part of it is difcernible from the reft: then beat and mix that as well, with the reft of the Mafs. If the Mafs be too dry, you may mix with it fome of the Oil which comes from the Soap, which it fpues out when it ftands by a long time; or in its ftcad, fo much rectify'd Oil of Turpentine as is fufficient to make it into a Mafs fit to form into Pills: Then put it into a wide-mouth'd Glafs, or Gallypot, ty'd over with a Bladder or Leather.

It is Diaphoretick, Anodyne, and Diuretick.

Its Dofe is from two to five or fix Grains.

Dr. Starkey's Pill.

TAKE Extract of Opium, four Ounces; Nutmegs and Mineral Bezoar' *ana* two Ounces; Saffron and *Virginia* Snake-Root, *ana* one Ounce; beat the Nutmegs and Saffron together into a Pafte, fo that the Saffron cannot be diftinguifhed from the Nutmegs: alfo let the Mineral Bez. and Snake Root be in impalpable Powder. Then mix all together, with half a Pound of the Corrector, half an Ounce of Oil of Saffafras, and

two

two Ounces of Tincture of Antimony : let them all be well incorporated, by beating in a Mortar ; then keep them in a Glass, or Gally-pot, ty'd over with Bladder, or Leather, for Use.

This I had from the ingenious Dr. *Starkey's* own Mouth, in the Year 1665, a little before his Death ; who then told me, he gave *Matthews* the former for a little Money : but this is that which he successfully made use of himself.

It is both more Diaphoretick and a greater Anodyne than the former ; and I have heard it affirmed by several Gentlemen, who have made use of it in their Practice, to be the best Laudanum they ever met with.

Its Dose is the same with the former.

Liquid Laudanum with Camphor.

TAKE four Ounces of the best Opium ; put it into a Matrafs, and pour upon it four Quarts of Water ; place it in a digesting Furnace, and keep it scalding-hot three Days ; run it through a Flannel, and press out all the Liquor, which evaporate to one Quart ; keep it in a Bottle to be used, as shall be directed.

Put

Put one Ounce of choice *English* Saffron into a Matrafs, and pour upon it six Ounces of tartariz'd Spirit of Wine; digest them in a gentle Heat, till the Saffron looks pale.

Into another Matrafs put one Ounce of Cinnamon; of Cloves, two Drams; Ginger and Pimento, *ana* one Dram and a half; pour upon them also six Ounces of tartariz'd Spirit of Wine, and digest two or three Days.

Into a fourth Matrafs put half an Ounce of Camphor, moistened with a little tartariz'd Spirit of Wine; let them digest, till the Camphor is dissolv'd.

Press the Tinctures of Saffron and the Spirits through Flannel, which mix with the Dissolution of Opium, and pour all into the Matrafs with the dissolv'd Camphor; let them stand two or three Days in a gentle Heat, and decant for Use. It is at least equal to other Liquid Laudanums.

The Dose from three to forty Drops.

The Drops of Life.

Dissolve four Ounces of the best Opium in Water, (as in the former Process;) then take one Ounce of *English* Saffron; of *Russia* Castor, one Ounce
and

and a half ; Cochineal, and *Virginia* Snake-Root, *ana* half an Ounce ; Nutmegs, Zedoary, *ana* two Drams ; of Camphor, one Dram : powder these Ingredients, and put them into a Matrafs ; pour upon them of Tincture of Antimony (made with Salt-Petre and Antimon. Diaphoret.) one Pound : let them stand three or four Days in a gentle Heat, shaking the Matrafs often, till a good Tincture is produced, which put to one Quart of the Dissolution of Opium ; then let all stand in Digestion forty-eight Hours ; when settled, decant.

The Dose from one to forty Drops.

A Pectoral Sudorifick Laudanum.

TAKE four Ounces of the Sapo, mentioned in *Starkey's* Pill ; two Ounces of Extract of Opium ; half an Ounce of Saffron ; of Ginger, two Drams ; beat them in a Mortar, and add two Ounces of Balsam Sulp. Anifat. Grind them, till they are well united, put them into a Matrafs, and pour upon them half a Pound of Sal Volatile Oleosum, and two Pounds of rectify'd Spirit of Wine : let them digest forty-eight Hours in a gentle Heat, often shaking the Matrafs ; then add strong distilled Vinegar four Ounces : shake the Vessel,
and

and they will ferment a little; when that is over, close the Matrafs again, and let it stand three Days and Nights in a gentle Sand-Heat, shaking it as before: when settled, decant the clear, (and you may filter the Sediment) and put it into a Bottle.

The Dose from ten to fifty Drops.

The Universal Anodyne.

Dissolve four Ounces of the best Opium in a sufficient quantity of Water; evaporate it to one Pound and a half; to which put one Pound of rectify'd *French-Brandy*, half an Ounce of Saffron, two Drams of Cochineal, and two Ounces of the Tincture of the Volatile Salt of Tartar, (or in its stead, two Ounces of the secret Corrector;) of Sal Volatile Oleosum, and the Spirit that was drawn from the secret Corrector, *ana* three Ounces; digest these four or five Days, in a well-luted Matrafs, in a gentle Heat: then strain it off for Use.

The Dose from five to fifty Drops.

It has not only all the common Operations of other Opiates, but (as very learned Men assure me) it very much facilitates the Cure of Chronick
and

and Acute Diseases; in some Cases you will find it a little Cathartick.

Observations.

THE Extract of Opium may as well be made with Brandy, or Proof-Spirit, as with Water and Spirit of Wine; there being Water enough in either of them to dissolve that we call the Spirituous Part of Opium, and also Spirit enough to dissolve the more terrestrial resinous Part: but be careful in drying it into an Extract, that you do not burn it.

When you put the Extract of Opium to the Tincture of Saffron, Castor, and Nutmegs, stir them well together, till the Extract and Tinctures be incorporated; and likewise be careful, to prevent burning the Extract.

The Yeast does often make the Medicine muddy, and therefore I substitute in its place, two Ounces of Juniper-Berries, which renders the Laudanum more pleasing to the Eye, and takes off its gripping Quality.

Laud. Liq. Of late I put in the Juniper-Berries
Tartari- with the Saffron, Cinnamon, Nutmegs,
zat. and Mace, and digest them three or four
 Days ; then press them through Flannel,
 decant that Liquor, and when settled, put
 to the Tincture one Ounce, or six Drams
 of the Extract of Opium : Incorporate
 them well, and distil off eight Ounces of
 the Spirit.

Laud. Liq. The Canary-Wine will endure some-
Sydenham. thing a stronger Heat of Digestion than
 Spirit of Wine or Tincture of Tartar ;
 because there is not Spirit enough in the
 Wine to extract the resinous Part of the
 Opium. If after three or four Days
 Digestion of the other Ingredients, you
 press it out, let it settle, pour it off by
 gentle Inclination, and then put to it
 one Ounce, or six Drams of the Extract
 of Opium, you will better perform the
 Operation.

Laud. Liq. If you add two Ounces of Juniper-
cum Spir. Berries to the Saffron, the Medicine will
Nit. Dulc. be a greater Carminative ; and instead
 of Crude Opium, if you take the Ex-
 tract, and proceed as in the former Ob-
 servation, you will the better succeed.

If you distil the Oil of Turpentine, with which you make the Soap, from Aromatick Herbs and Seeds, *viz.* Lavender, Mint, Rosemary, Marjoram, Carraway-Seeds, and Juniper-Berries; the Laudanum will be more grateful.

Starkey's
and Mint.
Pill.

Those Gentlemen who have not Con-veniencey to prepare it, may for twenty Shillings the Pound have it of me.

The Uni-
versal
Anodyne.

C H A P. XVI.

Of Essential Oils, and Fixed Salts.

ESSENTIAL Oils are such as retain the Smell and Taste of the Spices, Gums, Herbs, Flowers, Berries, Seeds, and Woods, from which they are drawn; *viz.* Cinnamon, Cloves, Nutmegs, &c. Benjamin, Balsam of Peru, Ammoniacum, Galbanum, Capivii, Turpentine, &c. Mint, Balm, Marjoram, Wormwood, Pennyroyal, Rosemary, Sage, Cammomel, &c. Anniseeds, Coriander-seeds, Carraway-seeds, Cummin-seeds, sweet Fennel-seeds, &c. Juniper:

niper-Berries, Bay-Berries, &c. Rhodium, Sassafras, &c.

The fixed Salts are extracted out of the Ashes of the Woods and Plants.

The Manner of distilling Essential Oils.

TAKE what quantity of any Spice, Gum, Berry, Seed, Herb, or Wood you please, such as are proper to be bruised or powdered; let them be put into a Copper-Still, and to them put eight or ten times their Weight of common Water; lute the Head to the Still, and its Refrigeratory or Worm: make fire under it to make it boil, and in a little time the Water and Oil will run into the Receiver, which we call a Spout-Receiver, (such as the Figure at the beginning represents.) When you apprehend that all the Oil is come off, hold a Spoon under the Nose of the Worm; and if you perceive any Oil comes with the Water into the Spoon, continue the Fire longer; if no Oil appears in the Spoon, let out the Fire, and separate the Water from the Oil.

Observe, First, Few of these Oils are worth Distillation, except in great quantities; that is to say, several Stills full.

Secondly, That you watch it at its first beginning to distil, to prevent its boiling over; and if you think the little Stream runs too fast through the Worm, open the Door of the Fire-hole, and that will a little allay its Vigour: if it be not sufficient, interpose a Fire-shovel between the Fire and the bottom of the Alembick, so as to keep it running in a small Thread, and after the first half Hour of its working, you may be more bold with the Fire.

Thirdly, That you leave Water enough in the Still to secure the Matter contained in it from burning.

Fourthly, That you return the Water you distilled off upon the fresh Matter, in the Still, so long as it is the same Spice, Wood, or Herb, you drew the first Water from; for that Water being filled with some Oily Particles of the Vegetable from which you drew it, you will have, by returning it, more Oil from the said quantity of Wood, Seeds, or Herbs, the second Distillation, than you had the first.

Fifthly, Also observe, That the Oils of Cinnamon, Cloves, and Sassafras, being

more concentrated and compact than the other, sinks to the bottom of the Water, and all the rest of the essential Oils swim upon the Surface of the Water.

Sixthly, Observe, That the Oils of Aniseeds, sweet Fennel-seeds, and Roses, will coagulate; therefore you ought so to order your matter towards the latter end of your Distillation, to keep the Worm warm to the very Nose of it, by which means the coagulated Oil melts down into the Receiver.

The Fixed Salts of Plants are made out of their Ashes: For example;

Take of dry Wormwood, what quantity you please; burn it upon a clean Hearth; rake the Ashes so long as any Fire appears amongst them; put those Ashes into an unglazed Pan, which set into a Calcining Furnace; make fire about it, till the Pan is red-hot, where keep it, (continually stirring the Ashes) till they are perfectly calcined into whitish grey Ashes, without any blackness: then put them into a clean Pan, and pour hot Water to them; when that Water is sufficiently impregnated with the Salt, filter and evaporate to dryness, and till the Ashes are left insipid.

C H A P. XVII.

Of TURPENTINE.

T is of a Balsamick Consistence and Nature, and comes by Incision from several kinds of Trees; *viz.* the Turpentine-Tree, in the Island of *Chios*; also from the Pine-Tree, the *Larix*, and Fir.

It is Diuretick, and given in Gonorrhœas, Ulcers of the Reins, Bladder, and Matrix.

Its Essential, or Ætherial Spirituous Oil, is drawn in Water, in a large Copper-Still, as other Essential Vegetable Oils are.

From the Colophone which remains in the Copper-Still, may be distilled by a Retort its yellow Oil and Red Balsam, as followeth :

The Yellow Oil, and Balsam of Turpentine.

TAKE of the Colophone which remains in the Copper-Still, after the Spirituous Oil is extracted, what quantity you please; break it into little pieces, and put it into a Retort not above half

U 4

full ;

full; place it in a Sand-Furnace, heat it gradually to the second degree of Fire, and then some Oil will drop into the Receiver; augment that Degree a little, and it will cause all the Oil to distil; then change the Receiver, and urge the Fire to the third Degree, which will cause yellow thick Drops to distil, with some Fumes: when the Fumes decrease, augment the Fire to the fourth Degree, which will drive over its red Balsam; when the Receiver begins to cool, and the Fumes disappear, let out the Fire.

By this Method you may distil the Oils and acid Spirits of Mastick, Frankincense, Tacamahacca, Gum Elemi, Labdanum, and all other Gums of this nature.

C H A P. XVIII.

Of BENZAMIN.



IT is a resinous fragrant Gum, which distils out of a large Tree growing in *Samaria*, and the Countries adjacent; its greatest Consumption is by the Perfumers: Its Physical

ficall Use is to resist the Malignity of Humours. It is also Pectoral and Cephalick.

That which breaks grey, and is full of white lucid Spots, is accounted the best.

The Tincture of Benjamin.

POwder four Ounces of select Benjamin; put it into a Matrafs, and put to it tartariz'd Spirit of Wine, one Pound; fit the Matrafs for Circulation, lute the Joint, and set it in warm Sand three or four Days, now and then shaking it about: in that time it will acquire a fine Tincture, which decant, and keep for Use.

Its chief Use is to smooch the Skin, and take away Spots out of the Face: one Dram of it being put into four Ounces of clean Water, turns it white. This is called Virgin's-Milk. It is also used in Asthma's, and other Diseases of the Lungs.

Its Dose is from twenty to sixty or seventy Drops.

Flowers of Benjamin.

PUT into a Subliming-Pot (of which you have the Figure in the Cuts) two or three Ounces of Benjamin in gross Powder; set on its Cover, without luting, and keep it in the second Degree of Fire in Sand, or immediately over a very small Fire of Charcoal; the Flowers will presently begin to rise into the Cover, which once in an Hour, or Hour and a half, must be taken off, and wiped out upon a clean Sheet of Paper, with a Feather. You ought to have two Covers to one Bottom, that you may clap on one as soon as the other is taken off. When you see the Flowers begin to rise yellow, take the melted Benjamin out of the Pot, with a Spoon, and put into it more powdered Benjamin, as you did at first, and so proceed, till you have as many of the Flowers as you desire.

The Oil and Spirit of Benjamin.

TAKE of the black melted Benjamin (which you took out of the Pot, after the Sublimation of the Flowers) one Pound; put it into a Retort, which place in a Sand-Furnace; cover it well with Sand, lute on its Receiver, and make
fire

fire of the first Degree for one Hour; then increase to the second, in which you will have some Oil and Spirit, with some discoloured Flowers; augment the Fire to the third Degree, and at last to the fourth, till no Fumes appear, and you will have a blackish Oil, with an acid Spirit, and the Neck of the Retort will be filled with the discoloured Flowers, which you may take out, and put upon clean brown Paper to suck up the Oil. These Flowers (though not so beautiful) are as good for Use as the former; and though both the Oil, Spirit, and Flowers, have acquired (at present) an Empyreumatical Scent, in six or eight Months time their Fragrancy will return

The Oil is a Balsam for Wounds. The Spirit is Diuretick.

Its Dose is from ten to fifty Drops, in any proper Vehicle.

After the same Method you may distil the Oil, Spirit, and Volatile Salt of the Balsams of *Tolu* and *Peru*, &c.

*Observations.**Tincture of Benjamin.*

YOU may add to the four Ounces of Benjamin, one Ounce of Styrax, and also one Dram of the Balsam of *Peru*; they will not only render the Scent more grateful, but also add to the deepness of the Tincture.

Flowers of Benjamin.

You must take care that the Fire be not too big; if it be, it forces up some of the Oil with the Flowers, and discolours them.

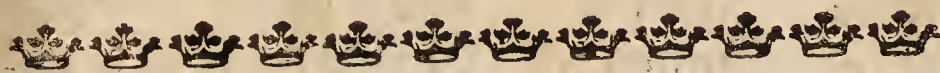
Oil of Benjamin.

If you have the quantity of two or three Ounces of the black Oil, you may put it into a Cucurbit, which is capable of holding a Gallon of Liquor, in which you may put two or three Quarts of Water to the Oil, and set it in a Sand-Furnace, luting on its Head and Receiver, and give it gradual Fire, till the Water is ready to boil. In this Heat, the Spirituous Part of the Oil will distil with the Water, of a fine Amber-colour, and a fragrant Scent.

It is a good internal Medicine, a powerful Diuretick, and a Specifick against the Stone and Gravel in the Kidneys and Bladder.


Its

Its Dose is from three to fifteen Drops, in a little refined Sugar. The Spirit may (before the Rectification) be separated by Filtration.



C H A P. XIX.

Of CAMPHOR.

 T is a Volatile Sulphureous Substance, which drops from a large Tree, growing in the Island of *Borneo* in the *East-Indies*. It is separated from its Dirt by Sublimation, and is brought to us in a transparent friable Cake. The clear, white, and such as is hard to quench, when set on fire, is the best. It is accounted a Volatile Alkali, saturated by Nature with Fatness.

It is Anti-pestilential and procreative, (though some have asserted the contrary) good against Fits of the Mother, and a great Smoother and Beautifier of the Skin.

The Oil, or Dissolution of Camphor.

TAKE of clear white Camphor, four Ounces; powder it grossly, and put it into a Matrafs; pour upon it eight Ounces of Spirit of Nitre; set it in a very gentle Heat of Digestion, often shaking it, and in two or three Hours time it will dissolve into a clear Liquor, swimming above the Spirit of Nitre, which you may separate as you do other Oils. Its Use is chiefly external.

If it be dropped into Rose-Water, and with it washed from its Acrimony, it re-assumes its Body, smooths and whitens the Skin.

Compound Oil of Camphor.

TAKE of the aforesaid Oil, four Ounces; of the rectify'd Oil of Amber, Juniper-Berries, Oranges and Lemons, *ana* three Ounces; put them into a Matrafs, and let them stand in Digestion till they are united, which will be in three or four Days. But if you will more strictly unite them, put into a large Glass-Body, so much Water, as will fill it two thirds; put to it the Compound Oil; set it in a Sand-Furnace, with its Head and Receiver; give it Fire gradually,

dually, till the Water simmer and bubble; continue the Fire, till all the Oil is distilled. If any of the Camphor remains coagulated, either in the Head or Receiver, return it (with all that is distilled) into the Body again, and distil it as before. Repeat this Operation two or three times, and the Oils and Camphor will become inseparable.

Observations.

IF you drop this Oil into Water, it re-assumes its Body, not being subtilized into an essential Oil, but only dissolved by so much of the Nitrous Spirit, as it is capable of receiving.

By repeated Distillations, it will perfectly unite with the other Oils, and become essential.



A
 Compleat Course
 OF
 CHYMISTRY.

PART III.

Of Animals and Insects.



SHALL here, in this third Part, speak only of those Animals, and such Parts of them, as we make use of in Chymistry; as *Salt Armoniac, Urine, Blood, Bones, Horns, Hoofs, &c.* Also *Serpents, Vipers, Wood-Lice, Pismires, &c.* And First:

C H A P.

C H A P. I.

Elixir Cranii Humani.

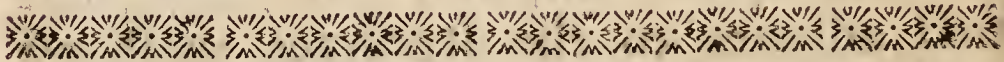
U T six Pounds of Human Skulls
P (grossly powdered) into a Retort;
lute it, and place it in an open
Furnace; give a degree of Fire every
two Hours, till no Fumes are seen in the
Receiver; then let all cool, and take
out the Spirit, Oil, and Salt; the Salt
that adheres to the Receiver wash off
with Water, and put it to the other;
which return into a clear Retort, and
rectify the Spirit, Oil, and Salt, in a
gentle Sand-Heat, so often (always in
clean Retorts) till they perfectly unite.
Put four Ounces of this united Spirit,
Oil, and Salt, into a Retort (or Cucur-
bit) with one Pound of rectify'd Spirit
of Wine; again rectify all in a gentle
Heat till they are united, (which five
or six Cohobations will perform) of this
put one Pound into a Matrafs, and
two Ounces of the Mofs of Human
Skulls; let them digest two or three
Days; then put it into a Glafs, and
stop it well.

It is a noble Medicine against Mad-
ness, Convulsions, and Hysterick Fits.

It operates by Sweat and Urine; and the Dose is from five to one hundred Drops.

Observations.

I Need give you no other Caution than to lute well the Joints of your Vessels.



C H A P. II.

Of Salt Armoniac.

SALT Armoniac is brought from *Alexandria* in *Egypt*, *Venice*, *Antwerp*, &c. It is either *Natural* or *Artificial*. The *Natural* is found in very hot Countries, where the Earth has imbibed the Urine of Animals; but of this very little is brought to us. The *Artificial* is made of Urine ten Pounds, Sea-Salt two Pounds, and the Soot of Wood one Pound: These are boiled into a Mass, and sublimed into such Cakes as come to us.

Puri-

Purification of Salt Armoniac.

Dissolve what quantity you please in warm Water, filter and coagulate, or only evaporate to a Pellicle, and set it to shoot in a cold place; either of them will render you a very white Salt.

Its *Operation* is Sudorifick and Diuretick, and is said to be good in malignant Fevers; also in Quartan Agues, provokes Womens Terms, resists Putrefaction, and therefore given in the time of the Plague.

Its *Dose* is from twenty Grains to one Dram and a half.

Sublimation of Salt Armoniac.

PUT what quantity of Salt Armoniac (in gross Powder) you please into a Retort, or Matrafs, with its Head; place it in a Sand-Furnace, fit a Receiver to it, and give gradual Fire to the third degree, in which you may keep it till all is sublimed, which you will perceive by the Sublimate rising clear above the Sand. Some sublime it with common Salt, and others with Burnt-Allum; but they serve for no

other Use than taking up room in the Glass, which must not be quite half full. Salt Armoniac being sublimed with common Salt, is that which Mr. *Lemery* calls Flowers of Salt Armoniac.

Its Use is the same with the purify'd.

Spirit of Salt Armoniac, with Salt of Tartar.

TAKE of Salt Armoniac, and Salt of Tartar, *ana* one Pound; powder and mix them well, and put them presently into a Cucurbit, (or rather into a Retort, because there is but one Joint to close;) sprinkle it with twelve Ounces of Phlegm of Wine, or eight Ounces of Spring, or Rain-Water; place it in Sand, and luting well its Receiver with Bladder, give it Fire of the first Degree one Hour and a half; increase it to the second, and keep it so for two Hours: go on to the third, and keep it there, till you see the Salt begin to dissolve in the Neck of the Retort, or Head of the Cucurbit. Let all cool, and put the Spirit into a Vial by itself, and the Salt into another by itself.

Its Operation is sudorifick and diuretick.

It is given in Epilepsies, Palsies, Small-Pox, Malignant Fevers, and Plague.

Its Dose is from ten Drops to one Dram.

Spirit of Salt Armoniac, with Quick-Lime.

TAKE of Salt Armoniac, in fine Powder, one Pound; of *Calx Vive*, (which has lain in the Air, till it is broken into fine Powder) three Pounds; mix them well, and put them presently into a Retort, to which put two Pounds of River, Rain, or Spring-Water; shake it, to mix the Powder and Water, and place it in a Sand-Furnace. Lute well the Juncture of the Receiver, and give Fire of the first Degree one Hour and a half; augment it to the second, where you may keep it, till about twelve Ounces of Spirit be distilled: then take it off, and keep it in a Vial well stoppt for Use.

You may lute on the Receiver again, and draw off three or four Ounces more, which will be pretty strong.

Its Operation, Use, and Dose, the same with the other.

It is accounted the better Spirit to smell to, being more penetrating; but, by reason of its Heat, it is not thought so good for internal Use.

The Spirit and Volatile Salt of Armoniac, which Mons. Lemery calls Sweet Spirit of Salt Armoniac.

TAKE of Salt Armoniac, and Salt of Tartar, *ana* one Pound; make them into fine Powder, and mix them; put them into a Cucurbit, fit a Helm to it, with a wide Beak, and likewise a Receiver to the Helm; lute them well with Bladder dipt in the White of an Egg, well beaten with a little Water; place them in a Sand-Furnace, and give Fire of the first Degree two Hours; the Salt will rise into the Head, and some Spirit drop into the Receiver. Raise the Fire to the second Degree, and keep it so four or five Hours, in which time all the Volatile Salt will be sublimed. Let all cool, and take off the Head and Receiver; put the Spirit into a Vial well stoppt, and the Salt into another also well stoppt. If you would have the Salt converted into Spirit, it is done by three or four Rectifications.

It is of the same Use with the other Spirits of Salt Armoniac, and may be given in a greater Dose.

The Acid Spirit of Salt Armoniac.

TAKE the Caput Mortuum of the former Spirits, one Part; and of Fullers Earth three Parts, both beaten into fine Powder, and well mixed; put them into an Earthen Long-Neck, and place it in a Reverberatory; fit and lute on the Receiver; make fire of the first Degree for one Hour; increase it to the second, and keep it there three Hours longer, and so to the third and fourth, till the Receiver comes clear without Fumes: Then let all cool, take off the Receiver, and put up the Spirit for Use.

It is of the same Nature and Use as the Spirit of common Salt, &c.

The Diuretick Salt.

TAKE the grey Salt which remains in the Vessel after Distillation of either of the Spirits made with Salt Armoniac and Tartar; dissolve, filter, and evaporate, either to a Pellicle, and so to shoot into Chrystals, or to a dry bottom.

Its Operation is diuretick and diaphoretick. It works by Urine very powerfully, from which it takes its Name.

It is given in the Stone and Gravel, also successfully in intermitting Fevers.

Its Dose is from ten Grains to one Dram, in any proper Vehicle,

Sal Volatile Oleosum.

TAKE of Salt Armoniac and Salt of Tartar, *ana* half a Pound; powder them apart, and mix them: put the Mixture into a Retort; put also into the Retort half an Ounce of Marum Syriacum; and of tartarized Spirit, one Pound and a half, impregnated with these essential Oils, *viz.* Cloves half a Dram; Cinnamon one Scruple; Nutmegs two Scruples; of Marjoram, Lemons, and Oranges, *ana* one Dram; put to them of clean Water, two Pounds, and set all in a Sand-Furnace: lute on its Receiver, and give Fire of the first Degree one Hour and a half; increase to the second, in which continue it five or six Hours, or until you have in the Receiver about a Pint and a half of Spirit and Salt.

You may aromatize it with Essence of Ambergrease to your pleasure.

This Medicine is differently composed, as the Operator pleases.

Its Operation is diaphoretick and diuretick.

It is given in Pains and Diseases of the Head. It is good in Palsies, Lethargies, Scurvy, and pestilential Fevers.

Its Dose is from ten to sixty Drops.

The hidden Spirit of Salt Armoniac.

TAKE of pure Spring - Water five Pounds ; Pot-ashes, two Pounds ; Salt Armoniac, one Pound ; put them into an uncut Body, and stop it with a Bolt-Head, firmly luted ; let them stand three or four Days in a gentle Heat of Sand to digest, shaking them two or three times every day : then let the Mixture settle ; filter, and keep the Water for Use

'Tis used to open Obstructions of the Liver and Spleen, provoke the Terms, sweeten the Blood, and to give ease in the Gout.

Its Dose is from forty to sixty, or one hundred Drops.

The double Menstruum of Salt Armoniac.

REDUCE Salt Armoniac and *Calx Vive* into fine Powder, *q. v.* mix them in equal Quantities, and let them run, *per deliquium*, in a moist place.

It is of the same Use with the foregoing Spirit.

Its Dose is from ten Drops to one Dram.

Note, That it readily dissolves Mercury Sublimate into a clear Water, which may be of Use to the Curious.

Distillation of Urine.

TAKE of the Urine of sound Young Men, newly made, as much as you please; put it into an Iron-Kettle, and evaporate it to the Consumption of one half, in a gentle Heat: put the Remainder into a Stone-Bottle; stop it well, and set it by, to ferment for about two Months. Open the Bottle, and if you find it smell quick and strong, put it into a large Glass-Retort; lute on a Receiver, and give Fire of the first Degree for an Hour; then increase to the second, which will raise its Salt and Spirit; con-

tinue

tinue that Degree, till you find the Salt begin to dissolve, and let all cool. Then take off the Receiver, and put all you find there into a Cucurbit; set it in Sand, lute on its Head and Receiver, and give a gentle Heat. at first, and the Salt, and some part of the Phlegm, which we call Spirit, will rise. Continue the Fire, till you see the Head well lined with Salt; which, when you perceive to decrease, let all cool, and put what you find in the Receiver into a Vial well stoppt.

It is diaphoretick and diuretick, and given in intermitting and malignant Fevers.

Its Dose is from five to fifty Drops.

But however, as to the Evaporation, observe to do it by a gentle Heat, lest some of its Volatile Salt, by too great an Agitation, should fly before its Fermentation. The Use of this Fermentation is to separate the Phlegm, which would take up too much room to no purpose.

Secondly, If you find not the Urine sufficiently fermented, which you may know by its quick Scent, stop it again, and let it stand longer.

Third-

Thirdly, If you desire the Salt and Spirit apart, after the Rectification, then pour off the Spirit into a Vial, and tye a double Paper over the Mouth of the Receiver; set it downwards, and let it drain till the Salt is dry: then scrape it off from the sides with a crooked Hoopstick, and put it into a Vial well stoppt.

If you desire yet a greater quantity of the Salt, put both it and the Spirit together into a long Body, lute on the Head and Receiver, and let it stand in a digesting Heat of Sand, that the Salt may gently sublime.

I have made the Spirit of Urine without Fermentation, by evaporating to the Consistence of a Syrup, and giving it gradual Fire to the third and fourth Degree. In this Operation the Phlegm comes first, and then some Volatile Salt; afterwards more Volatile Salt will appear in white Fumes, with the Spirit, and a little stinking Oil, which must be separated from the Salt and Spirit before Rectification. After one Rectification you may separate the Volatile Salt and Spirit, as in the former; but I do not esteem it of equal Goodness with the fermented Spirit, because all the Salt of Urine is volatilized

latilized by the Fermentation. In the Caput Mortuum, as some call it, you will find a strong lixivious Salt; and if the volatilizing fix'd or lixivious Salts, deserves that Encomium the most celebrated Authors give, the Salt of fermented Urine must be the best Medicine: and indeed there is a perceptible Difference betwixt them; the fermented Spirit and Salt being more pleasant and penetrating, both in Smell and Taste, than the unfermented.

Observations.

THIS Operation separates the accidental Dirt from the Salt, and renders it fit for Sublimation. If without this Separation you should sublime it, the foul and dirty Sulphur would rise with it, and render it unfit for some curious Operations.

Instead of a Pound of Salt of Tartar, you may take one Pound and a half of Pot-ashes, made clean by Dissolution and Filtration, and evaporate it to dryness. It is of the same Use with Salt of Tartar.

If

Spirit Sal. If the Lime be not a little quenched
Arm. cum before 'tis mixed with the Salt Armoniac,
Cal. Viv. the Spirit will fly with such Violence,
 that it will be very troublesome to put
 it into the Vessel, and the most essential
 Part will be lost.

Spirit Sal. If you put half a Pound of tartariz'd
Arm. Dul. Spirit of Wine to the Salts, before Dittilla-
 tion, you will have a greater quantity of
 Salt than can be produced without it.

Spir. Acid. This is the Spirit of common Salt,
Sal. Arm. which was before in the Composition of
 Salt Armoniac, but kept down by the
 Salt of Tartar; and therefore it requires
 as strong a Fire to distil, as that of com-
 mon Salt.

Sal Diuret. If after the Humidity is evaporated,
 you make too strong a Fire under it, you
 will burn and discolour it.

Sal Volat. If you make it with the Spices and
Oleosum. Herbs, instead of the essential Oils, it
 will acquire a little Tincture, which by
 some is disliked, but I think it not the
 worfe.

Spirit. Sal. You may dissolve and filter the Salts
Ar. Occul. apart, and then put the Dissolutions to-
 gether

gether into a Glafs big enough for the Spirit to circulate.

Let the Lime be two or three Days ^{Menstru.} ^{Duplicat.} expos'd to the Air, before you mix it with the Salt Armoniac; otherways a great Part of the Volatile Spirit will evaporate, which ought to be united with the Salt.

C H A P. III.

The Distillation of Hart's-Horn.

TAKE that which we call the Velvet-Head, in the Spring-time, while it is soft, cut it into little pieces, and put them into a Cucurbit; lute on its Head and Receiver; place it in *Bal. Mar.* and distil a Water from it.

It is accounted good to help forward the Birth, and to resist malignant Humours in Fevers.

Its Dose is from two to four or five Ounces.

*The Spirit, Volatile Salt, and Oil of
Hart's-Horn.*

TAKE of that which remain'd in the Cucurbit, (after the foregoing Distillation) or pieces of solid Hart's-Horn, as much as you please; put them into an Earthen-Retort, or Iron-Pot, either of which may be filled two thirds. If it be an Iron-Pot, you must fit to it a Copper-Head, with its Receiver; if a Retort, only a Receiver: place them on a naked Fire, which increase gradually, so as to keep some Fumes in the Receiver, but not to force them so violently, as to blow off, or break it. At last give the fourth Degree, in which keep it, till no Fumes appear: then let all cool, take off the Receiver, and put the Oil and Spirit into a separating-Glass; wash out the Salt which remains behind with clean Water, and put it to the Oil and Spirit. Then let it stand twenty-four Hours to separate, and draw out the Spirit; then put them into a Cucurbit, or long-boll'd Retort, in a gentle Heat of Sand to rectify; the Salt (and some part of the Liquor, commonly called Spirit) will first ascend; the Salt will increase, till the Neck of the Retort and Receiver are well charged. When the Salt begins to dif-

dissolve, take off the Receiver, and separate the Spirit from the Salt, as before directed in that of Urine. If after Rectification, any Oil appears upon the Spirit, separate it by a Glass, and keep the Spirit in a Vial well stopt.

It is diaphoretick and diuretick.

Its Dose is from ten Drops to forty or fifty, in any proper Vehicle.

After the same manner we make the Spirit, Oil, and Salt of *Human Skulls* and *Bones*, *Vipers* or *Serpents*, *Ivory*, *Hoofs*, *Hair*, &c.

The Aromatick Spirit of Hart's-Horn.

TAKE the Spirit, Oil, and Salt of Hart's-Horn, after the first Distillation, and rectify them; put them so rectify'd into a clean long-boll'd Retort: to each Pound of which put two Ounces of Sal Volatile Oleosum, and four Ounces of Spiritus Nitri Dulcis; shake them well together, and set them in a very gentle Heat of Sand; lute on a Receiver, and continue the Fire, (not exceeding the second Degree) till all be distilled. In the Receiver you will have a Spirit which has quitted its Empyreuma, and receiv'd a penetrating, but very pleasant Scent.

It is a powerful Diuretick and Diaphoretick; it wonderfully expels Wind from any part of the Body, and, by many Experiments, is found to be endued with all the Virtues attributed to *God-dara's Drops*.

Its Dose is from fifty to sixty or seventy Drops, in any proper Vehicle.

Observations.

IF you distil any Animal Spirit in an Iron-Pot, with a Copper Head, that Head ought to be kept only for such Use.

If you would have that we call Spirit and Salt absolutely free from the Oil; to one Pound of the Spirit (after the second Rectification) you may put of Bones or Horns calcined to whiteness, four Ounces, and distil in a gentle Heat of Sand.

If you desire all the Salt in a dry form, separated from the Phlegm, put the aforesaid Mixture into a Matrafs, or Long-Body, with a Head and Receiver fitted to them, and in a very gentle Heat of Sand; the Salt will be elevated into the Head and Neck of the Body or Matrafs: For the Volatile Salts of Animals are
pro-

perly their Spirits; and what we call Spirits, is no other than part of the Volatile Salt dissolv'd in the Phlegm, which nevertheless has the same Virtue of the true Spirit, or the Volatile Salt, but given in a greater Dose.

If you rectify the aromattick Spirit *Spir. C: C:* once more, its pleasant Smell will be *Arom.* augmented.

C H A P. IV.

*To Elixirate, or make Essential
Animal Volatile Salts.*

TAKE half a Pound of Volatile Animal Salt; put half a Pound of tartariz'd Spirit of Wine to it, and it will coagulate, and is that which *Helmont* calls his *Offa Alba*: put that Salt into a Matrafs, pouring upon it pure and strong distilled Vinegar, by little and little at a time, till the Ebullition ceases; then set it in a gentle Heat of Sand, with its Head and Receiver well luted; there will first come a subtile Liquor, dropping from the Nose of the

Alembick; after that will sublime into the Head, a most glorious Salt, white as Snow, in a figure like large Flowers of Benjamin, of a quick, pleasant, penetrating Scent, and a very agreeable Taste.

In this Operation you must have a watchful Eye; as soon as you perceive the Chrystals to fall, or relent in the Head, draw the Cucurbit out of the Sand, and take off the Head and Receiver; put the Spirit and Salt apart, into Vials, and carefully stop them. In the Cucurbit you will find a very stinking Phlegm, which may be thrown away.

This is that Animal Salt I unite with the Salt of Tartar, that so readily dissolves in tartarized Spirit of Wine, before-mention'd; with which I extract the Anodyne Sulphur of Metals, and of them compose that surprizing Anti-Rheumatick Tincture:

Which rectifies lost and depraved Appetites, restoring the Stomach to its true Tone, and preparing the Aliment for further Digestion; cleansing the Blood of all the corrosive Salts, which (in some measure) occasion those acute Pains in Rheumatisms, Gouts, and Scurvies, &c.

It is a powerful Diuretick, and of excellent Use in the Stone and Gravel, either

ther in the Kidneys or Bladder, by dissolving and washing off that petrifying Matter, which is the Cause of both.

By its gentle Diaphoretick and Anodyne Quality, it quiets the *Archæus*, and allays the irregular Ferment in the Blood, by which means it becomes an excellent Medicine in all Fevers; and by its carminative and sweetning Quality, gives present Ease in the Cholick, and all Gripings in the Bowels and Stomach.

In its Taste and Operation it is most pleasant, and mixes with all Liquors without Ebullition, Coagulation, or Precipitation. So much for the Anti-Rheumatical Tincture.

This Essential Animal Salt is diaphoretick and diuretick. Its Dose is from five Grains to one Scruple.

The Dose of the Anti-Rheumatick Tincture is from fifty to one hundred, or one hundred and twenty Drops, in any Liquor which is proper. My common Vehicle is Spring-Water.

C H A P. V.
Of *V I P E R S.*



THE Viper is one of the Reptiles, but whether Animal or Insect, I dispute not. The Creature is well known, and has a Skin scaly, and withal so very compact, that it permits little or no Perspiration of Spirits, which is the Reason why it is able to live several Months without any other Nourishment than that of Air.

As to the Story of *Pliny* about their Generation, That the Male puts his Head into the Mouth of the Female, which she bites off; That the young Vipers pierce the Womb and Sides of their Dam, and by that means revenge the Death of their Sire; Of their particular Hatred to the Ash-Tree, that they will rather run into the Fire than come near it, and the like; I reject them as fabulous.

Authors are of different Opinions about the manner of emitting their Poison; some asserting that it proceeds from the yellow Juice which often appears upon the Surface of the Wound; and others from the Rage and Exasperation of the Animal. But my Design being only to give such Antidotes and Medicines as are

pro-

produced from them by Chymical Preparation, I omit all Disputes, as foreign to my purpose.

The Distillation of Vipers.

TAKE what number of Vipers you please; open and cleanse them from all Worms and Excrements, and the Females from their Eggs; take out their Hearts and Livers, dry them in the shade, separately from the Bodies, and when they are dry, cut the Bodies into small pieces, and fill a coated Retort three quarters full; place it in a Reverberatory fit for the Retort; lute to it its Receiver, which must be capacious: cover the Furnace with its Dome, and make a gentle Fire under it for two Hours, in which time the greatest part of the Phlegm will come off: then increase the Fire to the second Degree for two Hours more, which will raise its Spirit and Volatile Salt; increase it still to the third, which will fill the Recipient with Clouds; keep up that Degree, till the Clouds lessen in the Receiver. Continue the Increase of the Fire still, to the fourth Degree, and keep it there, till all be come over, and the Receiver grows cool: then cease the Fire, and you will find the Phlegm, Spirit,
Y 4 Salt,

Salt, and Oil, which must be rectify'd as followeth.

Rectification of the Salt of Vipers.

PUT all that you find in the Receiver into a long-bodied, uncut Cucurbit; if more Salt adheres to the Receiver than the Liquid which distilled from the Vipers will dissolve, put in a little Water, and rince all the Salt out into the Body; place it *in Balneo*, or a gentle Heat of Sand or Ashes; lute on the Head with a Bladder daub'd with stiff Starch, and dipt in the White of an Egg. You may also lute on a small Receiver to the Beak of the Alembick, and the Salt will sublime into the Head, or upper part of the Body, distinct from the Phlegm, and grosser part of the Oil, which must be kept in a clean Vial, carefully and exactly stopp'd for Use.

To this Salt many Virtues are attributed; as that it gives relief even in those Diseases which are most refractory and difficult to cure; as Apoplexies, Lethargies, Convulsions, Palsies, and all other Diseases believed to have their Source in the Brain: Likewise in Distempers of the Breast; as difficulty of breathing, Palpitation of the Heart, Pleurisies,
Sound-

Soundings, &c. It dissipates all inward Imposthumes, and dislodgeth secret and unknown Pains, which have their Origin in the Spirits: It helps Digestion, and purifies the whole Mass of Blood; resolves and prevents Coagulations in all Parts of the Body. 'Tis an excellent Remedy against all intermitting Fevers, particularly Quartans: It works powerfully in the Distempers of the Matrix, and is an Enemy to all the Vices of the Skin, even to the Leprosy itself. But above all, a most certain Specifick against the Bitings of all venomous Creatures. It is also a great Antidote against the Plague, and all contagious and epidemical Diseases; as the Measles, Small-Pox, &c.

Its Dose is from ten Grains to two Scruples, in any proper Vehicle.

This excellent Salt is also another Ingredient in the Anti-Rheumatick Tincture.

A Sudorifick Water of Vipers.

TAKE what number of living Vipers you please; put them into a strong Earthen-Body; tye a Hair-Cloth over its Mouth (such as coarse Hair-Sieves are made of;) fit and fasten a Head well
to

to it; then place it *in Balneo*, which gradually make to boil. This will elevate a Water, which you will see drop into the Receiver: when the Drops cease to fall, let it cool, and take out the Water.

Its Operation is diaphoretick, and 'tis successfully exhibited in many Cases, where the Salt is proper.

Its Dose is from twenty to seventy or eighty Drops, in any proper Vehicle.

The Essence of Vipers.

TAKE of dry'd Vipers what number you please; cut them into small pieces, and put them into a Cucurbit; place it conveniently, and pour into it (by a little at a time) so much Spirit of Nitre as will dissolve them: (commonly twelve Ounces of Spirit of Nitre will dissolve four Ounces of Vipers.) When all the Spirit is put upon them, let them stand five or six Hours, and there will be a black Scum upon the Surface of the Dissolution, which must be taken off with a Glass-Spoon, or, in defect of that, a clean Tobacco-Pipe. You will likewise find white Fæces in the bottom, which must also be separated from the clear Dissolution; pour the clear Liquor into a Retort, and, by an Ounce or two at a time,

time, put to it three times its Weight of tartarized Spirit of Wine, shaking them often about, as you mix them: place the Retort in a Heat of Ashes, and with a gentle Fire distil off the Spirit of Wine, which will be an excellent dulcify'd Spirit of Nitre. To the black Matter remaining in the bottom of the Retort, put the same quantity of new Spirit of Wine tartarized, and distil it off, as you did the other: put on again the same quantity as before, and distil in the same manner; and repeat this so often with new Spirit of Wine, till it has neither any nitrous Smell, nor acid Taste. Keep that which remains in the Retort, to unite with the Volatile Salt, and rectify'd Oil of Vipers, as followeth.

The Rectification of the Oil of Vipers.

PUT the Oil and Phlegm from which the Salt of Vipers was sublimed, into a Cucurbit; let the Cucurbit be capable of holding two Gallons; pour to them one Gallon of clean Water; set it in a Sand-Furnace; fit to it its Head and Receiver; give it a gradual Fire, till the Matter within the Body bubble; continue the Fire so, till holding a Spoon under the Beak of the Head, you perceive

ceive very little or no Oil swim upon the Water, which drops into the Spoon.

Then let all cool, and you will have Water, with the Ætherial Oil of Vipers, in the Receiver.

The Compound Tincture of Vipers.

TAKE one Pound of Flowers of Sulphur; four Ounces of crude Antimony; grind them to a fine Powder; put it into an Earthen Dish, and saturate it with four Ounces of Oil of Sulphur *per Campanam*, (or with Oil of Vitriol :) put it into a Retort, and pour gradually one Pound of sweet Spirit of Nitre upon it; place the Retort in a Sand-Furnace, and draw off the Spirit. Into one Pound of this Spirit put two Ounces of dried Vipers, (cut into small pieces;) let them digest forty-eight Hours in a Matrafs; when cool, strain it through a Hair-Cloth. Return the Menstruum into a Matrafs, adding of Cochineal, Saffron, and *Virginia* Snake-Root, *ana* two Drams. Let them digest forty eight Hours, then decant a clear Tincture.

It is an excellent Diaphoretick. In the Year 1665, I have known it often given with Success in the Plague, as well as in malignant Fevers.

The

The Dose from five to fifty Drops.

The Union of the Volatile Salt, Ætherial Oil, and the most subtile Particles of the Viper into an Essence.

PUT to four Ounces of the dissolv'd Body of the Vipers left in the Retort, one Ounce of Tinctura Regalis, (before mentioned in the Chapter of Antimony) by a Dram at a time: then to two Ounces of the Salt, and half an Ounce of the Ætherial Oil, put one Pound of the same Tinctura Regalis; put them into a Matrafs, which make a Circulatory, and let them stand ten Days in the Sun, (or an equivalent Heat) shaking them every day. When you see the Tincture has imbibed all the Salt and Oil, take it out, and put it to the Dissolution of the Vipers aforesaid; and when by a strong Agitation you have loosen'd the Dissolution from the Retort, put it all into a Matrafs, and let it circulate in a very gentle Heat ten Days, shaking it every day. In this time all the several Substances will be united into an Essence, which pour off from the Fæces into a clean Vial, and keep carefully stopt for Use.

This

This Effence is endued with all the Virtues of the Salt of Vipers; and if any Animal Medicine exceeds the Salt, it is this.

Its Dose is from twenty to one hundred Drops, in any appropriated Liquor.

Observations.

*Distillat.
of Vipers.*

SOME take only the Bodies, pulling off the Skin, and cutting off the Heads and Tails, which they put away; also they put away their Heart and Liver: but all these yield as much Salt, proportionable to their Weight, as the Bodies do; and you may as well perform this Operation in a good Sand-Furnace and uncoated Retort, as you can in a Reverberatory.

*Rectificat.
of the Salt.*

If you desire it more nicely separated from all the oily Particles which it carried with it in the first Rectification, mix three Parts of clean and very dry Chalk, in fine Powder, with one Part of rectify'd Salt of Vipers; put it into a Matrafs, or uncut Cucurbit, with its Head and Receiver well luted, and with a gentle Fire sublime the Salt, and it will leave

leave all its oily Particles absorbed in the Chalk.

The Hair-Cloth is fastned over the Mouth of the Cucurbit, to keep the Vipers from jumping into the Head, when they begin to be heated, by which means they may possibly break the Head, and get out; whose Biting then would be extremely pernicious, by reason of their Irritation, by the Heat of the Fire.

Sudorifick Waters of Vipers.

When you put the Spirit of Nitre to the Vipers, place the Vessel where the Fumes may ascend without offending you. Also be careful not to put above an Ounce or two at once of the Spirit of Wine to that of Nitre, wherein the Vipers are dissolved, lest the Ebullition should be so strong, as to fly out of the Vessel with violence. The repeated Distillations with new tartariz'd Spirit of Wine, are to elevate as much of the Spirit of Nitre as is possible, and to hinder its fixing the Salt of Vipers.

Essence of Vipers.

One Gallon of Water will be sufficient to rectify four Ounces of the black Oil in, and generally by that time you have distilled two Quarts of Water, you will have all the Ætherial Oil come over.

Rectificat. of the Oil.

The

*Union of
the Oil,
Salts, &c.*

The Ounce of Tinctura Regalis is put to the dissolv'd Vipers to satiate (in part) that Acidity still remaining in them, which otherwise might too much fix the Salt of Vipers, and reduce it to the Nature of common Salt Armoniac; which being again mixed with fixed Alkalies, may be sublimed into an Animal Urinous Salt, as it was before.

You may likewise dulcify the Dissolution, by putting to it (a little at a time) so much pure fixed Nitre as will satiate its Acidity: then let it stand in a cold Place, and it will shoot into a combustible Salt-Petre again; and the Dissolution will be thereby freed from the corrosive Spirit of Nitre, which would have changed the Volatile Salt, into that which some call the secret Salt Armoniac.

N.B. That whatever Animal, Vegetable, or Mineral, is dissolved in the Spirit of Nitre, it will be made to precipitate with the fixed Salt; and on the contrary, whatever is dissolved in the *Ol. Nitri, per deliquium*, or by its fixed Salt, will be separated by the Spirit: And this (if carefully elaborated) may be done without prejudice to the Matter dissolv'd, and to the Augmentation of their Virtues,

tues, by digesting and ripening their undigested Crudities.



C H A P. VI.

Of HONEY.

H T is the Juice of Heavenly Dew, which falls upon Flowers and Herbs, and is gathered by those industrious Insects the Bees, and in them further digested. The best is of a bright Yellow, having a pleasant Scent, and an equal Consistence in every Part.

It nourisheth, cleanses, and opens. It is pectoral and diuretick; cures Coughs, and resists Putrefaction.

Tincture of Honey.

T A K E one Pound of pure Virgin-Honey; despume it in a clean Earthen-Pan, and put to it three Ounces of pure Salt of Tartar, (or any other fixed Salt) finely pulverized; stir them well together, and an Ebullition will arise; stay till it is over, and take off the Scum, and put the Mixture into a Cu-
Z curbit

curbit uncut, and pour upon it one Pound and a half of tartarized Spirit of Wine: close the Mouth, and set it in a Heat of Digestion forty-eight Hours. Agitate the Matter three or four times a day, and in that time the Spirit of Wine will have charged itself with the purest Part of the Honey. Decant it from the Fæces into a new Cucurbit, lute on the Head and Receiver, and draw off one half of the Spirit of Wine in a gentle Heat. That which remains will be a sweet thick Tincture, being an excellent Pectoral Medicine.

Its Dose is from forty Drops to two Drams.

Spirit of Honey.

MIX one Pound of Honey with three Pounds of clean Sand, and put it into a Retort in a Sand-Furnace; make a Fire of the first Degree for two Hours; increase it to the second for two Hours more, and so go on to the third, where let it remain, till no more Fumes or Drops will fall. You will find an Emphyreumatical Spirit and Oil; put them both into a Cucurbit, and with a Fire of the first Degree draw off the insipid Water, and by the second you will raise the Spirit.

It is an acid Spirit, which dissolves Pearl and Coral; and some use it to procure, or make Hair to grow.

Sweet Honey-Water.

TAKE of good *French-Brandy*, one Gallon; of the best *Virgin Honey* and *Coriander-seeds*, *ana* one Pound; *Cloves*, one Ounce and a half; *Nutmegs*, one Ounce; *Benjamin* and *Stirax*, *ana* one Ounce; *Benilloes*, number four; the yellow Rind of three large *Lemons*. Bruise the *Cloves*, *Nutmegs* *Coriander-seeds*, and *Benjamin*; cut the *Benilloes* in small pieces; put all into a *Cucurbit*, and pour the *Brandy* to them; and after they have digested forty-eight Hours, distil off the Spirit *in Balneo Mariae*.

To one Gallon of this Water add of *Damask-Rose*, and *Orange-Flower-Water*, *ana* one Pound and a half; of *China Musk* and *Ambergrease*, *ana* five Grains. First grind well the *Musk* and *Ambergrease* with some of the Water, and afterwards put all together into a large *Matrafs*; shake them well, and let them circulate three Days and Nights in a gentle Heat. Then let all cool; filter, and keep the Water in a *Vial* well stoppt for Use.

This Water I often made for King *James* II. It is an Anti-paralytick, smoothes the Skin, and gives one of the most agreeable Scents that can be smelt. Forty or fifty Drops put into a Pint of clean Water, are enough to wash the Hands or Face with; and the same Proportion to Punch, or any Cordial-Water, gives a most pleasant Flavour.

Oil of Wax, with its Spirit and Butter.

PUT three Pounds of clean warm Sand into a Pan; slice into it one Pound of Bees-Wax, in small pieces; stir it about, that the Wax may melt, and mix equally with the Sand: when it is quite cold, put it into a Retort, and place it in a Sand-Furnace; make Fire of the first Degree one Hour; increase it to the second, and keep it so two Hours; and after in the third for three Hours, in which time the Oil and Spirit, with some of the Butter, will be in the Receiver, and the rest of the Butter will stick in the Neck of the Retort. You may separate and keep them apart.

Their Operation is diuretick.

The Dose of the Spirit is from ten Drops to forty or fifty, in any appropriate Liquor. The Dose of the Oil is

from

from five to twenty-five Drops, mixed with Sugar, to make it the better incorporate with Liquor. The Butter is the same. The Butter and Oil are also outwardly applied, and are good to dissolve Tumours.

Observations.

LET the Earthen-Vessel you mix the *Tincture* Honey and Salt of Tartar in, be *of Honey.* capacious enough to contain six or eight times the quantity you put into it, otherwise the Ebullition will be so strong, that it will cause it to boil over.

The Sand is mixed with the Honey, *Spirit of Honey.* to keep it from boiling over, notwithstanding which, it will swell and bubble; and therefore you ought not to fill the Retort above half full. In its Rectification, fit a Receiver, without luting; and as soon as you taste any Acidity, change the Receiver, lute it, and draw off the Spirit in an Heat not exceeding the third Degree: and if you add a twelfth or sixteenth part of Spirit of Nitre dulcified, it will abate its unpleasent Scent.

Sweet Honey-Water.

The Honey more powerfully opens the Aromaticks, which otherwise would afford but very little Odour.

You may mix the Wax with three times its Weight of Quick-Lime, especially if you rather desire the Oil than the Butter; for the igneous Particles of the Lime mixing with it, rarefies it more than any other Bole, and if you desire to convert all the Butter into Oil, one or two Rectifications from Quick-Lime will produce it, and make it more penetrating than *Ol. Cerae* made any other Way.



C H A P. VII.

Of Sows, or Hog-Lice.

THEY breed in Cellars and moist
T Places, under Stones, old Casks,
 and Logs of Wood; being touch'd,
 they gather themselves up like round
 Beads. They are said to digest, exte-
 nuate, open, and cleanse, and resolve tar-
 tarous Mucilage; are good in the Jaun-
 dice, Cholick, Stone, and Difficulty of
 Urine.

*The Spirit, Volatile Salt, and Oil of
Hog-Lice.*

PUT what quantity of Millepedes you please into a long-bodied Retort, so that it be not above half full; place it in a Sand-Furnace; lute on its Receiver, and give it the first Degree of Fire, till the Retort is thoroughly hot: then increase the Fire to the second, in which keep it two or three Hours, (according to the quantity of Lice) and some Liquor will drop into the Receiver, and the Volatile Salt will begin to rise: increase it to the third and fourth Degree; then cease, and take off the Receiver, when it is cool, where you will have Spirit, Oil, and Salt, which you may separate and rectify apart; or put all together into a Long-Neck'd Matrafs, luting on its Head and Receiver, and separate the Salt, by Sublimation, as you do that of Vipers.

Its Operation is Diaphoretick and Diuretick.

Its Dose from ten to fifty or sixty Drops.

Observe, You may make the Tincture and Essence of them in the same manner

as you are directed in the following Chapter of *Ants*.

C H A P. VIII.

Of ANTS.

THESSE are wise and industrious Insects, making provision in the Summer, for their Support in Winter; observing a Regular Discipline in their Labour, regimenting their Numbers, and as it were constituting Officers over those that are appointed to work, to see its Performance.

I have, with delight and wonder, observed them to issue out of their Hives in order, and, when loaded with Provision, returning in a continual Line, without being jostled by those which have disburdened themselves, and are marching out for more Stores. This Labour they perform in the Full of the Moon, and rest in the New.

They are black, or reddish; in the Winter they breed Eggs and Worms, which in the Summer become Ants; those which breed under Trees, and smell sour, are accounted best. They
are

are said to provoke Venerie, and create Courage. Some Authors use their Eggs to restore Hearing.

The Spirit, Oil, and Volatile Salt of Ants.

TAKE what quantity of Ants you please; put them into a long-bodied Retort, or an uncut Cucurbit; let not the Vessel be above half filled with the Insects; fit a Recipient, and lute the Joint well; give gradual Fire, as you did to the Millepedes, and in all things proceed as in the Distillation and Rectification of them.

The Tincture of Ants.

TAKE what quantity of Ants you please; put them into an uncut Body, and put upon them so much Oil of Nitre, *per deliquium*, as will cover them; let them stand in a gentle Heat of Digestion five or six Days, in which time they will be dissolved; towards the end of which you may increase the Fire three or four Hours, to make them boil: then let them cool, and pour upon them three times their Weight of Spirit of Wine; stop the Body with a small Matrafs, and lute the Joint well; let it stand in a good digesting Heat, till the Spirit is
well

well tinged; let that cool, and pour it off, and put on more tartarized Spirit of Wine, and set it again in Digestion, till it has also acquired a Tincture, which will be in two or three Days time. Decant that Tincture to the first, and put both into a Cucurbit; lute on its Head and Receiver, and, *in Balneo Mariæ*, draw off two thirds of the Spirit of Wine. That which remains in the Cucurbit let cool and settle, and, by gentle Inclination, pour the Tincture into a clean dry Vial for Use.

In Virtue it exceeds that which is attributed to the Creature, in every respect.

Its Dose is from ten to sixty or seventy Drops, in a Glass of Canary, or Wine and Water.

The Essence of Ants.

Dissolve Ants in Spirit of Nitre, in the same manner as you did the Vipers, skimming off the Froth, and decanting it from the Fæces. To the clear Dissolution of four Ounces of Ants, put of their rectify'd Oil, four Drams, which drop in by half a Dram at a time: then put also, by little at a time, two Ounces of their Salt. When all is mixed, and the

the Ebullition ceased, shake them well, and set them in a very gentle Heat of Digestion forty-eight Hours, in a Circulatory Vessel: then, by gentle Inclination, pour off the Dissolution from the Fæces into a clean Cucurbit; to which also put so much fixed Nitre in Powder, by a little at a time, till no Effervescence appears. Let them stand cool and quiet, and in a few Hours they will be shot into a renovated Salt-Petre. If any Liquor remains with the Chrystals, pour it off into a clean Cucurbit, with its Head and Receiver, and, in a very gentle Warmth, dry it: Likewise dry gently that Precipitate, which the Spirit of Nitre let fall, when it embraced its own first Salt.

Then put the renovated Nitre, Precipitate, and the Residence of the Liquor which was evaporated, all together; grind them in a Glasse or Marble-Mortar, put them into a Matrafs, pour upon them one Pound of tartarized Spirit of Wine, invert a small Matrafs, and lute the Joint well, and let it stand in Digestion three or four Days, shaking it every day once or twice: Then let it cool and settle, and decant off the tinged Spirit; and, to the Matter remaining, put another Pound of tartarized Spirit of Wine: let it stand as before, to extract

tract more Tincture, and so proceed, till it gives no Colour to the Spirit of Wine. Then put all the tinged Spirits into a Cucurbit, lute on well its Head and Receiver, and, in a gentle Heat of *Balneum*, draw off three fourths of the Spirit, which keep well stopt, for any such like Operation hereafter.

That which remains in the Cucurbit let cool, and pour it into a clean Bottle, which keep well stopt for Use.

This is the most excellent Medicine which is prepared of this industrious Insect.

Its Dose from ten to seventy or eighty Drops.

Observations.

*Rectificat.
of the Oil
and Salt.*

After you have separated the Salt, by Sublimation, put the Oil and Phlegm remaining in the Matrafs, into a Retort, with a long Body; rince out as much as you can of the Oil which adheres to it, till it is above half filled with Water: place it in a Sand-Furnace, and give it gradual Fire, till the Water and Oil bubble a little; but take care it boil
not

not over, for then your Labour will be lost.

If you put a quarter part of Spir. Nitri Dulcis, to that of the Oil, in its Rectification, it will render the Oil more pleasant, and no way hurt its Virtue.

If the Oil of Nitre be very strong, the Spirit of Wine will not mix with it, but ^{*The Tinct.*} will swim upon it, as Oil doth upon Water, and will only prey upon the Animal Sulphur opened by the Oil. Remember to shake them often, while they stand in Digestion. ^{*of Ants.*}

Place the Vessel, in which you make ^{*The Essence*} the Dissolution in such a Place where ^{*of Ants.*} the obnoxious Fumes may evaporate without offence, and continue it there, after you have decanted it from its Fæces, till you have charged it with the Volatile Salt and Oil of the Insects, and also with its own fixed Salt; then set it in Digestion, as the Process directs.

CHAP.

C H A P. IX.

Of Spanish Flies.

THEY are a sort of Beetle, of a golden greenish Lustre, produced from a Worm like a Caterpillar. They breed in Wheat, the Leaves of Ash and Poplar. The best are found amongst Wheat and in Meadows. They abound in *Provence* and *Languedoc*, from whence we are chiefly supply'd.

They are hot and very corrosive, seldom used inwardly, without good Correction.

The Essence of Spanish Flies.

BRUISE four Ounces of Cantharides; put them into a Cucurbit, and pour upon them, by little at a time, twelve Ounces of Spirit of Nitre, and let them stand in Digestion twelve Hours: then with a Glafs Spoon, or Spatula, take off a black Scum from the Surface of the Spirit, which cast away; pour gradually upon them one Pound of tartarized Spirit of Wine; mix them well by shaking, and place

place them in a Sand-Furnace: lute on a Head and Receiver; kindle the Fire, which gradually increase to the second Degree, and in that Heat draw off a Pound and half of Spirit, which keep by you for farther Use.

To that which remains in the Cucurbit, put (by little at a time) so much Salt-Petre as will fatiate its Acidity, which you will know by the ceasing of its Ebullition. Then put that Mixture into a Glafs or Marble-Mortar; put to it one Ounce of refined Camphor, and grind them, till they are well incorporated, and return them again into the Cucurbit. Rinse out the Mortar with some of the Spirit of Wine which you drew off from them, which pour into the Body with the remaining Part of the Spirit of Wine; shake them well, and set them in a Heat of Digestion; make the Cucurbit a Circulatory; lute the Joint close, and let them stand in that Heat eight or ten Days, shaking them well about every day; then let it cool and stand to settle: Pour off the Tincture into a clean Cucurbit, and, in a very gentle Heat, draw off one half, or more, of the Spirit, which again put upon the Mixture, to extract more Tincture; and, when that Spirit is again tinged, draw
off

off two thirds, which put the third time to extract more Tincture, and distil as before, still putting the Tincture remaining, after Distillation of the Spirit, to the first Tincture.

Then take one Dram of Ambergrease, half a Dram of Musk, and two Drams of white Sugarcandy; grind them very well together, with a little of the Spirit last drawn off, pour them into a Matrafs, and to them put four Ounces of the aforesaid Spirit; close the Matrafs well, and set it to digest four or five Days: then put it to the Tincture of Cantharides, (also in a Matrafs) and let them circulate together four or five Days more; then pour it into a clean dry Bottle, which keep well stoppt for Use.

It is accounted a great Cordial, and really is endued with that Quality which is attributed to the Essence of Satyrion-Root.

Its Dose is from ten to an hundred Drops, in a Glafs of Canary-Wine, or any other Vehicle which better pleases the Patient.

Observations.

THAT you make the Dissolution in a Place where the Fumes may freely ascend without annoyance to the Operator. The same care must be taken in mixing the Spirit of Wine with that of Nitre; and also the same caution ought to be used in putting the fixed Salt of Nitre to its Spirit.

The Camphor absorbs the corrosive Quality of the Fly; and the fixed Salt of Nitre satiates that of the Spirit: so that there is no need to fear any ill Consequence from either.

The Dissolution subtilizes the Fly, and corrects all its poisonous Quality.

The Discharge of the dissolv'd Particles, by the fixed Salt, renders it fit to yield its essential Being to the Spirit of Wine.

1870

1870

The first of the year was a very
cold one, and the snow lay on the
ground for several weeks. The
winter was a very severe one,
and the snow lay on the ground
for several weeks. The winter
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1870



P A R T IV.

By Way of

A P P E N D I X.

*Of Transmutation of Metals.*

THE Doctrine of Transmutation of Metals has been positively asserted by many Authors, both antient and modern; by Men of great Learning and Experience, of solid Virtue and Piety; of which (amongst others) the late Honourable Mr. Boyle is, I think, a compleat Instance.

I know indeed that this Doctrine meets with very little Acceptance amongst the Learned of this Age; neither shall I pretend to be an Advocate for it, though the expensive and tedious Experiments I have made, abundantly convince me, that Metals may be very much meliorated, if not entirely transmuted.

The following Experiments, which I have chosen out of many others, I faithfully deliver to you; hoping that I have so behaved myself, that my Veracity will not now be question'd; and that I shall not, upon the Brink of Fourscore, be accused of Vanity.

The Ætiology of any thing in these or the former Processes, cannot be expected from me, who want the great Blessings of Academical Education, and have no more Philosophy than (I may truly say) I have fetched out of the Fire. Therefore, if you would have the various Phænomena accounted for, I must refer you to Dr. *Friend*, or some other learned Physician, well skill'd in Speculative and Practical Chymistry.

I affect no unintelligible Words, or Mystical Hieroglyphicks, to delude Men of their Money and Senses too. I honestly relate only Matter of Fact, which may caution you against those circumforaneous Pretenders, the Adepts, who
have

have prejudiced the World by their Cheats; and, notwithstanding the fair Warning *Erasmus* long since gave us, continue to impose upon some great and wise Men: witness the Duke of *Florence* formerly, and another Potentate (mention'd in our Gazette) this last Year.

. *Experiment I.*

THE fifth of *August*, A. D. 1661.
Mr. T. T. join'd with me in the making the Mercurial Water following.

We had a Cast-Iron Body three Foot long, with a Perforation within half a Foot of the top; we made an agreeable Furnace, and placed the Body in it, to which we luted a large Glafs-Head, with a very wide Beak; to which also we luted seven Aludels. When the bottom of the Body was of a white Heat, we put in at the Perforation, two or three Drops of Mercury, and immediately stopt it close. This little quantity of Mercury made a great noise, and rose in white Fumes, which fill'd the Head, all the Aludels, and the Receiver. When these Fumes were condens'd, we put in the like quantity as before, and so continued, till in sixteen hours time we

had put in one Pound of Mercury. When all was cold, we took off the Receiver and Aludels; in each we found a little Water, and in the first and second Aludel some Grains of Crude Mercury: we carefully put all the Water together, which seem'd to be about one Pint, and yet the Weight was but thirteen Ounces and six Drams.

We pleas'd ourselves wonderfully with our supposed Treasure, which we concluded could be no less than *the Universal Menstruum*; but, after many Trials, we found it of no more Virtue than *common Water*. We spent above half of it upon Leaf-Gold, Gold calcined with Mercury, and upon a Lunar Calx, &c. but the more Experiments we made, the more we were convinc'd that our mighty Expectations were vainly founded; however, we divided the remaining Water; and I lost my part when the Fire of London, A. D. 1666, forced me to remove.

The same Gentleman and I try'd many Experiments with Air attracted by several Magnets; with *May-Dew*, and other insipid Menstruums, &c. and we never found them more useful than distill'd Rain-Water.

Experiment II.

THE fourteenth of June, A.D. 1677, I purify'd Regulus Martis to a perfect Star, of which I melted four Ounces, with half a Pound of fine Silver; I beat it, when it was cold, into a fine Powder, and then, with twenty-four Ounces of Mercury, revived from Cinnabar, I ground it in an Iron-Mortar, till they were truly amalgamated.

The Sixteenth; This whole Day was spent in grinding the Amalgama with warm Water, till the Water came off clear.

The Seventeenth; I put the Amalgama into a Retort, which I set in Sand, and gave it Fire gradually: but the last four Hours I kept it in the extreme Degree.

The Eighteenth; I again melted the Luna with four Ounces of the stellated Regulus; then beat it into fine Powder, and by grinding with it the distill'd Mercury, I made an Amalgama as before.

The Nineteenth; I wash'd and ground the Amalgama in warm Water.

Twenty-first; It was distilled.

These Operations I repeated ten times, always melting four Ounces of fresh Regulus with my Luna.

The Eighth of July; I weighed my Mercury, and found it twenty Ounces and six Drams: I boil'd it in distill'd Vinegar, and strain'd it thro' fine clean Cloths, till it was dazling bright.

The Ninth; I put two Ounces of this Mercury, and six Drams of perfect fine Gold into a little uncut Body: I set it into my Athanor, where it continued six Days in a gentle Heat; in which time the Mercury had so penetrated the Gold, that in less than six Hours time I ground them into an Amalgama, which I washed, till it was very bright; then I put it upon a Sheet of fine white Paper, and set it in a gentle Heat of my Athanor to dry.

The Nineteenth; I put it into a strong Chrystal-Egg, which I seal'd Hermetically, and placed it in my Athanor, gradually giving Fire for fifteen Weeks; then the bottom of the Pan in which it stood was red-hot. It endured this Heat four Days, and then burst into ten thousand pieces, so dispers'd, that I never could find one Grain of it.

N. B. After it had stood three Weeks in the first Degree of Heat, it turn'd a little black. Six or eight Days after, it divided (as it were) into little Islands. Eight or ten Days after that, it began to vegetate, and grew daily from little Shrubs to Trees; first with Buds, then Leaves, and lastly with little round Knobs like Fruit, which I beheld with much pleasure, tho I paid dear enough for it.

Experiment III.

THE tenth of October, A. D. 1677. I bought of Mr. *Willmore* the Refiner, five Pounds of Mercury, (which he had distill'd from various Metals;) I distill'd it also from Scoria of Mars and Sulphur three times, and twice *per se*; after that, seven times from Regulus of Mars and Venus, in the Proportions following.

The twentieth; I took six Ounces of pure Regulus of Mars and Venus; of fine Silver, twelve Ounces; of the Mercury, three

three Pounds : I ground the Regulus into a fine Powder.

The twenty-first ; By grinding I made an Amalgama of the Regulus and Mercury, and wash'd it pure with clean warm Water.

The twenty-second, I distilled it.

The twenty-fourth ; I melted the Silver with six Ounces of new Regulus, and reduced it to Powder.

The twenty-fifth was spent in grinding them into an Amalgama, and washing it as before.

The twenty-seventh ; I distill'd the Mercury, and I afterwards repeated all these Operations seven times.

The fourteenth of November ; I distill'd the Mercury from Scoria of Mars.

The fifteenth ; I squeezed it through Leather, boiled it in distilled Vinegar, and often strain'd it through fine Cloths, and put it into a Bottle. It then weighed two Pounds, seven Ounces, and a half ; it having wasted, in the several Operations, eight Ounces and a half.

The eighteenth ; I put six Ounces of this Mercury, and two Ounces of fine Gold into a little uncut Body, and let it stand ten Days in a gentle Heat of my Athanor.

The twenty-eighth ; By grinding I made an Amalgama of it, which I boil'd in di-

distill'd Vinegar, and found the Vinegar receiv'd a blackish Tincture; then I washed it in warm Water, and dried it first with clean Cloths, and afterwards upon the top of my Athanor.

The twenty-ninth; I put it into two strong Chrystal Eggs, which I sealed hermetically, and placed in my Athanor.

The twenty-third of November; I dissolv'd two Pounds of Mercury in Aqua Fortis, (made of Allum and Nitre) which I precipitated with Filings of Lead. Some will affirm this to be the Mercury of Saturn, but I must crave leave to dissent from them.

The twenty-fifth; I distilled this Mercury from clean Filings of Iron.

The same Day I melted four Ounces of Regulus Veneris, with eight Ounces of fine Silver; brought it into Powder, of which, by grinding with twenty-four Ounces of the Mercury, I made an Amalgama, which I ground and wash'd as in the former Preparations; and I repeated all the Operations, last mention'd, seven times.

The first of December; With two Ounces of pure Gold, one Ounce and a half of fine Silver, and with ten Ounces of the Saturnine Mercury, I made an Amalgama; and this I clean'd by grinding and washing as I did the other Solar Alam-

Amalgamas: then I boil'd in distilled Vinegar, and wash'd it with warm Water, and dried it first with clean Linen, then between white Paper on the top of my Athanor.

The sixth; I divided it, and put it into two Chrystal Eggs, which I sealed hermetically.

The same Day; Having enough of my first Sophick Mercury by me, I made another Amalgama with two Ounces of pure Gold, and six Ounces of that Mercury, by grinding, washing, boiling, and drying. I prepared it as I had done the other, and also hermetically sealed it in two Eggs.

The Eleventh; I placed my six Eggs in my Athanor, and gave them a gentle Heat one and twenty Days; then the last Amalgama, with the first Sophick Mercury (*i. e.* Mercury in the second Experiment) and Gold turn'd blackish; the next with Mercury and Gold was more like *Æs Ustum*; the other with Gold, Silver, and Saturnine Mercury was divided into little Islands..

The twenty-first; They were all divided into little Islands.

The twenty-first of January, 1677. They appear'd like Moss and small Shrubs, differing somewhat in Colour, *viz.* That with the Philosophick Mercury and Gold

Gold had Spots and little Lines of pale Gold Colour: That with the Mercury, prepared with Regulus of Mars and Venus, more inclining to a red: That with the Gold, Silver, and Mercury, with Saturnine Spots and Lines. The Vegetation visibly increas'd for ten Months, and from Moss to Stems, to Trees with Leaves and Fruit. I augmented the Fire a little every Month, till the Trees seem'd to wither; and about the twelfth Month they shrivel'd into a Substance like a dry red Earth. However, I still increas'd my Fire, till

The fourth of March, A. D. 167²/₉. And then one of the Eggs with the Saturnine Mercury, broke with a Noise like a Gun: this broke the Neck of another, and cracked two more, with the Windows of my Athanor. Now I thought it high time to let the Fire out. I scarce recover'd any part of the broken Egg; in the rest I found some Precipitate and a thick Amalgama; but in the Eggs with the Gold, Silver, and Mercury, I had some little hard bits like Block-Tin. With a Feather I carefully wiped out the Precipitate from each Egg. In the remaining Egg with the Saturnine Mercury, I had two Ounces, two Scruples, and eight Grains. In the Eggs with the Gold, Silver, and Mercury, I had
four

four Ounces and five Drams. In the Eggs, with the Sophick Mercury, I had five Ounces, one Scruple, and seven Grains. At first I would have persuaded myself, that these Precipitates far exceeded those commonly made by corrosive Menstruums; but, after many trials, I was convinc'd that they were not better than those made at a much cheaper rate. The Amalgama of Sol and Mercury, which I had left in three Eggs, I put into a Crucible, and set it in a melting Furnace: But here again I was disappointed; for the Fire as easily evaporated my Mercury, as if it had been Virgin-Mercury from the Shops; and the Gold (excepting what was lost by the breaking of the Egg) I had all just as pure as when I put it in. And thus I was satisfy'd, that, after this Method, there could be no Union of Sol and Mercury; and this made me less regard those Gentlemen that despised the corrosive Dissolutions, especially since I often revived Sol and Luna after they had been dissolv'd in Aqua Regia and Aqua Fortis, and always found the noble Metals as perfect as before.

Experiment IV.

THE *tenth* of March, A. D. 1687;
I dissolv'd four Ounces of Gold in
a very well made Aqua Regia.

The eleventh; I distilled in a Retort the
Aqua Regia from it.

The twelfth; I return'd this Aqua Re-
gia, with four Ounces more upon the
Gold in the Retort, and again distilled
it.

These Dissolutions, Distillations, and
Cohobations, I repeated seven times, and
then my Gold look'd like a pure red
Gum, which I kept for farther Use. I
put two Pounds of fine Spirit of Salt, and
twelve Ounces of my Mercury, (which
I had kept ten Years) prepared with
Regulus of Mars and Venus, into a Re-
tort; I distilled the Spirit of Salt from it,
and raised a Sublimate, which was mix'd
with some Globules of Crude Mercury.
I swept the Sublimate from the Neck
and Top of the Retort, and washed it also
out of the Receiver, with half a Pound
of fresh Spirit of Salt, and distilled it
again; and then I had a greater quantity
of Sublimate, with some very small
Globules of Crude Mercury. I swept
and wash'd my Retort and Receiver with
new

new Spirit of Salt, and distilled it the third time; when all the Mercury rose in a delicate spungy Sublimate, as white as Snow, I broke the Retort, (in the bottom I found some grey Fæces) and scraped, and washed the Sublimate into a clean Glass-Body, and return'd the Spirit of Salt upon it, which totally dissolv'd it.

I put it into a Retort the fourth time, and again distilled. The Sublimate rose white and pure, and left but very few Fæces in the bottom, and those brighter than the first.

Once more I return'd the Sublimate and Spirit into a Glass-Body, and dissolv'd it.

The fifth time I put it into a clean Retort, and distilled it again; and then all rose clear, without leaving any Fæces.

I dissolv'd the above-mention'd Solar Gum in Aqua Regia, and this fine Sublimate in new Spirit of Salt, and put both these Dissolutions into a Retort, letting them stand four and twenty Hours; then by a gentle Sand-Heat I drew off the Spirit without raising any Sublimate. I return'd the Spirit upon the Gold and Sublimate, by which they were entirely dissolv'd. I distilled as before, and this I five times repeated; and then I left the Sol and Mercury in the bottom

bottom of the Retort, of the Consistence of athin, clear, red Syrup.

The fifth of April, A.D. 1688, I pour'd this Solar Syrup into a clean Glass, and washed the Retort with a little of the former drawn Spirit; then I divided it, putting to the one part an Ounce of thick Aqua Regia, made of Mars and Venus, and half a Pound of pure rectify'd Spirit of Nitre; to the other part I only put the like quantity of the Spirit of Nitre, (I having first put the divided Syrup into two Retorts) the Spirit turn'd them both muddy. I luted on the Receivers, and by a gentle Heat drew off eight or ten Ounces of Liquor from each, which I return'd with four Ounces of fresh Spirit of Nitre for each Retort, and then drew off twelve or fourteen Ounces. I cohobated the third time with four Ounces of new Spirit. I had no clear Dissolution in these three Cohobations. The fourth time I return'd the Spirit with one Pound of rectify'd Spirit of Venus into each Retort; and having shaken them well, I luted on the Receivers, and set them in warm Sand till next day, when, to my great Satisfaction, I found a clear Dissolution. Then I made Fire under them, and distilled about two thirds of the Liquor, which I return'd also with half a Pound of fresh Spirit of

B b

Nitre

Nitre upon each, and by a gentle Heat drew off about one third of the weakest Liquor, which I kept by itself. When the Retorts were cold, I added half a Pound of new Spirit of Nitre to each Retort, and distilled almost to a dry bottom: That with the Aqua Regia of Mars and Venus was of a deep red Colour, the other a little paler.

The eighteenth; I return'd all my Liquor, and drew it over again; and at the third Cohobation I distilled the Matter dry. I once more return'd what distilled, and drew off about four Ounces from each Glass. When the Retorts were cool, I added four Ounces of new Spirit of Nitre into each, and let them stand in warm Sand, till the next day, and then again I found a clear Dissolution.

The twenty-second; I distilled to a dryness, and gave a strong Fire in Sand. When all was cool, I cut the Retorts above their Contents; in the Necks I had some light Flowers, which I separated. The Contents of the Retort with Sol and Mercury, was part red and part yellow. The other, with Sol, Mercury, and the Aqua Regia from Mars and Venus, was of a deep red. I put them again into fresh Retorts, and return'd the Liquor I had drawn, adding to each Retort four Ounces

Ounces of new Spirit of Nitre: I set them in warm Sand, and I had a clear Dissolution in twenty-four Hours.

The twenty-seventh; I drew off two thirds of the Liquor, in which I dissolv'd half a Pound of the secret Salt Armoniac, made with Spirit of Salt and Spirit of Urine. After I had shaken and divided the Dissolution, I return'd into each Retort, and let them stand till

The twenty-ninth; In the Morning I made Fire under them, and drew off about three fourths, which I cohobated.

The first of May; I distilled to a dryness, and sublimated part of the Salt Armoniac, and washed it down into the Retort with the distilled Spirit. Then I sublimated as much as I could with a strong Fire. When all was cold; I cautiously scraped the Sublimate into two Jarr-Glasses, and found it weigh'd eight Ounces, and (almost) two Drams. The Sublimate from the Gold and Mercury was very white; the other was brownish, with small purple and yellow Lines. The Gold and Mercury which remain'd in the Retort was coloured like fine Crocus Metallorum, and very compact; the other was of a deeper Colour, inclining to a Purple, but not so solid as the former.

The fourth ; I mixed (by grinding) each Bottom with its proper Sublimate, and put them into Retorts, and pour'd upon each, twelve Ounces of very strong rectify'd Spirit of Nitre: After they had stood twenty-four Hours in warm Sand, and then again distilled; the Salt Armoniac sublimated, which I swept down into the Retorts, I distilled and cohobated three times. The last time I gave the strongest Fire. When all was cool, I carefully scraped off the Sublimate, and found it but six Ounces, three Drams, and a half.

The ninth ; I reduced each bottom into fine Powder, which I put into large Retorts, adding, gradually, two Pounds of rectify'd Spirit of Wine into each Retort: I set them in a Sand-Heat, and fitted on two large Receivers. Without any more Heat, the Spirit (as I expected) began to distil with Violence and red Fumes, as in the Distillation of sweet Spirit of Nitre.

The tenth ; I gradually put into each Retort two Pounds more of rectify'd Spirit of Wine, and distilled it. I repeated the Operation a third time, and then it distilled without any corrosive Taste or Smell.

The fourteenth; I again reduced each Confection into fine Powder, which I put into uncut Bodies, and return'd the last distilled Spirit of Wine upon them, and kept them all day in a simmering Heat.

The fifteenth; This Morning I decanted the Spirit of Wine; that from the first Body was of the Colour of Canary, and then had a little sharp rough Taste. The Spirit of Wine from the Sol, Mercury, and the Aqua Regia of Mars and Venus was deeply tinged, (which some raw Chymist would take for Aurum Potabile) and of a rough vitriolick Taste. I put two Pounds of fresh Spirit of Wine into each Body, and boil'd as before. That from the Gold and Mercury was not in the least tinged; the other but very little, and was somewhat sharp.

The seventeenth; I boil'd them with new Spirit of Wine; which, when cold, had no Tincture, or acid Taste. I dry'd the Confections, and cut the Bodies low enough to take the Powders clean out with a Feather. That with the Sol and Mercury weighed six Ounces, three Drams, and fourteen Grains. The other with the Sol, Mercury, and Aqua Regia of Mars and Venus, weighed

seven Ounces, one Dram, and eight Grains.

The nineteenth; I put them into two Chryſtal Eggs, which I fitted with Glaſs-Stoppers, and did not ſeal them hermetically. I placed them in my Athanor, and kept a gentle Heat, till

The fiſt of June; I could not perceive any Alteration, till this Day, when they began to vegetate with ſmall white Lines. I kept them in my Athanor four Months, gradually increaſing my Fire; and daily pleas'd myſelf with the various Figures and Colours, which were different from thoſe the former Amalgamas (made without Corroſives) afforded me; for now they are vegetated with ſtreight Lines, as ſmall as fine Needles, up to the tops of the Eggs, with little Knobs at the end of each Line, ſome red, others green, and others of a lovely yellow: they grew and withered four times, ſo that, I may ſay, they had four Springs, and as many Autums; at laſt they ſtood ſmooth, and looked like a melted Metal.

The eighth of October; I increaſed my Fire to a full third Degree, and ſo kept it till

The

The eleventh of December; When I was treated as the Spanish Ambassador was: For the mad Mob taking me for a Conjuror, or something worse, broke my Glasses and Athanor, saying, I was preparing the Devil's Fire-Works, purposely to burn the City and White-Hall. And thus ended this Operation.

Experiment V.

THE *Eleventh of June, A.D. 1694.*
I met with my old Friend, who assured me, that at the last, after forty Years Search, he had met with an ample Recompence for all his Trouble and Expences. This he confirmed with some Oaths and Imprecations; but, considering his great Weakness and Age, he looked upon himself incapable to undergo the Fatigue of the Procefs. “ I have
“ here, *says he*, a piece of Sol that I
“ made from Silver about four Years past,
“ and I cannot trust any Man but you
“ with so rare a Secret; we will share
“ equally the Charges and Profit, which
“ will render us wealthy enough to com-
“ mand the World.”

Then he read the Procefs, which indeed did not feem unreaſonable to me, eſpecially ſince he offered at no peculiar Advantage to himſelf. Thus I was perſuaded to put it upon the tryal, and accordingly,

The twenty - firſt; I beat twelve Ounces of *Japan* Copper into thin Plates, and laid it *ſtratum ſuper ſtratum*, with three Ounces of Flowers of Sulphur in a Crucible; which I placed in a melting Furnace, with a gentle Heat, till the Sulphureous Flames expired. When cold, I pulverized the *Æs Uſtum*, and ſtratify'd again; and this I repeated five times.

Then I put ſix Pounds of Iron-Wire into a large Glaſs-Body, and poured upon it twelve Pounds of Spirit of Salt; it ſtood ſix Days in a gentle Heat, before it ceaſed from bubbling: then I decanted and filtered the Liquor, and to the undiſſolved Wire I put ſix Pounds more of Spirit of Salt, which I let ſtand its due time, and then decanted and filtered it. I put both the Liquors into a large Retort, and by a Sand-Heat drew it off; towards the latter end, (when the Drops came yellow) I changed the Receiver, and increaſed my Fire to the higheſt Degree, in which I kept it four or ſix Hours.

Hours. When all was cold, I took off the Receiver, and found in the Neck of the Retort, a quantity of Flowers variously coloured, like the Rainbow. The yellow Liquor in the Receiver weighed ten Ounces and a half; the Flowers, two Ounces and three Drams. I put the Liquor and Flowers into a clean Bottle.

I put also half a Pound of Sal Enixum, and a Pound and a half of Spirit of Nitre into a Retort, and let it stand till the Salt was dissolved; then I added ten Ounces of Mercury, which I had distilled through Quick-Lime and Salt of Tartar. I drew off the Lime to a dryness, and found a fine yellow Mass in the bottom of the Retort. I returned the Liquor with half a Pound of fresh Spirit of Nitre, and distilled as before. I repeated it a third time, urging this last Cohobation with the highest Degree of Fire. When all was cold, I found a various-coloured Mass in the bottom of the Retort.

Lastly; I dissolved four Ounces of fine Silver in one Pound of Aqua Fortis, and added four Ounces of the *Æs Ustum*; of the Mercurial Mass one Ounce and a half; of the Martial Tincture two Ounces and a half. When they had stood together

together in a Retort twenty-four Hours, I decanted the Liquor, and poured four Ounces of new Spirit of Nitre upon that little Matter that was not dissolved. In the Morning I had a total Dissolution.

The twenty-sixth; I put all the Dissolution into a Retort, and distilled it almost dry. I cohobated three times, urging the last with a very strong Fire, till no Fumes appeared, and not a Drop fell.

The twenty-eighth; I put the Matter left in the bottom of the Retort, into a Crucible, and gently evaporated all the Corrosive Fumes, and, with a fluxing Powder, melted it down.

Now my Friend expected five Ounces of perfect Sol; but, upon examination, the Luna was the same (only a half-penny Weight worse) as when I dissolved it in Aqua Fortis. There were indeed some few Grains among the Scoria, which appeared like Sol, and would not dissolve in Aqua Fortis.

Experiment VI.

NOtwithstanding our ill Success in the last, my old Friend pressed hard for another Experiment; saying, he was very positive we should now succeed, if we added a little Sol to the former prepared Mercury, Mars, Venus, and Luna; besides, he offered to be at the Charges, and that I only should be the careful Operator. Accordingly, on

The eleventh of February, A. D. 1699, he brought me two Drams of fine Gold; which I dissolv'd in Aqua Regia, and cohobated six times.

I dissolved also two Ounces of fine Silver in half a Pound of Aqua Fortis. To this Dissolution I put two Ounces (he thinking there was too little in our last Work) of the Mercurial Mass, one Ounce and a half of the Martial Tincture, and two Ounces of the *Æs Ustum*; and at last the aforementioned Gold, (dissolv'd in the Aqua Regia.) After they had stood a sufficient time on warm Sand, I decanted them clear. The brown Fæces I supposed to be Gold, but I soon dissolv'd them in Spirit of Nitre, except a very little

little white Matter, and decanted this Dissolution also.

The twenty-second; I put the two Dissolutions into a Retort, and drew off almost to a dry bottom: I cohobated six times, at last drawing all off to a dryness.

The twenty-eighth; I put the Substance (left in the bottom of my Retort) into a Crucible, proceeding as in the former Process, and melted it with a fluxing Powder, and poured it into an Ingot Mould; when it was cold, I turn'd out the Ingot, and beat off the Scoria.

The Ingot was a little tinged, and the Scoria had some Grains of Metal much like Gold.

I reduced the Scoria into Powder, and, by frequent Washing, separated the yellow Metallick Particles, which weighed one Dram and eight Grains; and these stood the Test of Aqua Fortis.

I beat the Ingot into thin Lamels, and dissolv'd them in Aqua Fortis, to separate the Luna from the Sol; and here I found one Dram, two Scruples, and five Grains of Gold.

I also separated the Luna from the Aqua Fortis, by the help of Venus, and had one Ounce, six Drams, one Scruple, and three Grains of Silver.

So I lost one Dram, one Scruple, and seventeen Grains of Silver, and gain'd two Scruples and thirteen Grains of Gold.

But, considering the Trouble and Expence of the Experiment, I believe the Reader will agree with me, That this Gold was bought too dear.

Experiment VII.

TH E *twenty-first* of August, A. D. 1704; I dissolv'd two Ounces of fine Silver in a particular Aqua Fortis. I dissolv'd and cohobated seven times, and then the Luna remain'd in the bottom of the Retort, like a transparent yellow Gum.

With the Aqua Fortis I had drawn off, I dissolv'd one Ounce of *Japan* Copper.

I also dissolv'd one Ounce of the Mercury (prepared with Sal Enixum) with half an Ounce of the Tinctura Regalis of Flowers of Mars.

I drew the Water from the Mars and Venus, and cohobated five times; and then I had a deep red Gum with a greenish Reflection.

I dissolved both the Gums in their proper Menstruums, which I had drawn from them, and put these Dissolutions, and that of the Mercury together, and set them in a Sand-Furnace. I distilled the Spirit, returned it, and cohobated three times; I gave it a strong Fire the last time, which raised some Flowers. I found in the Retort five Ounces and one Dram of a red Substance, a little spongy, and almost transparent.

The sixteenth of September; I beat it to a gross Powder, and put it into a Crucible. I let it stand about an Hour in a gentle Heat to evaporate the Corrosive Spirits. When it was cold, I mixed it with a little Soap, Borax, and Nitre, and with a strong Fire I made all haste to melt it, and poured it into an Ingot Mold. I found it weighed two Ounces, seven Drams, and four Grains: The Colour of it was between Sol and Venus, which pleased me extremely; but my Satisfaction did not last long, for the Metal was not Malleable, neither would it stand the Test of Aqua Fortis; but on the contrary, it readily dissolv'd, tinging the Aqua Fortis a little blue. I cupell'd some part of it, and had good Silver again.

These

These and many more Experiments I have made, and always fell short of, or was entirely baffled in my Expectations.

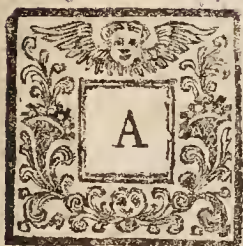
I observe Physicians are well pleased with the Integrity of that Author, who relates Cases wherein he had not his desired Success: So I hope the Reader will pardon and credit me, since, by faithfully discovering my own Disappointments and Miscarriages, I have shewed him how to avoid the like.



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F I N I S.

Tab 3.

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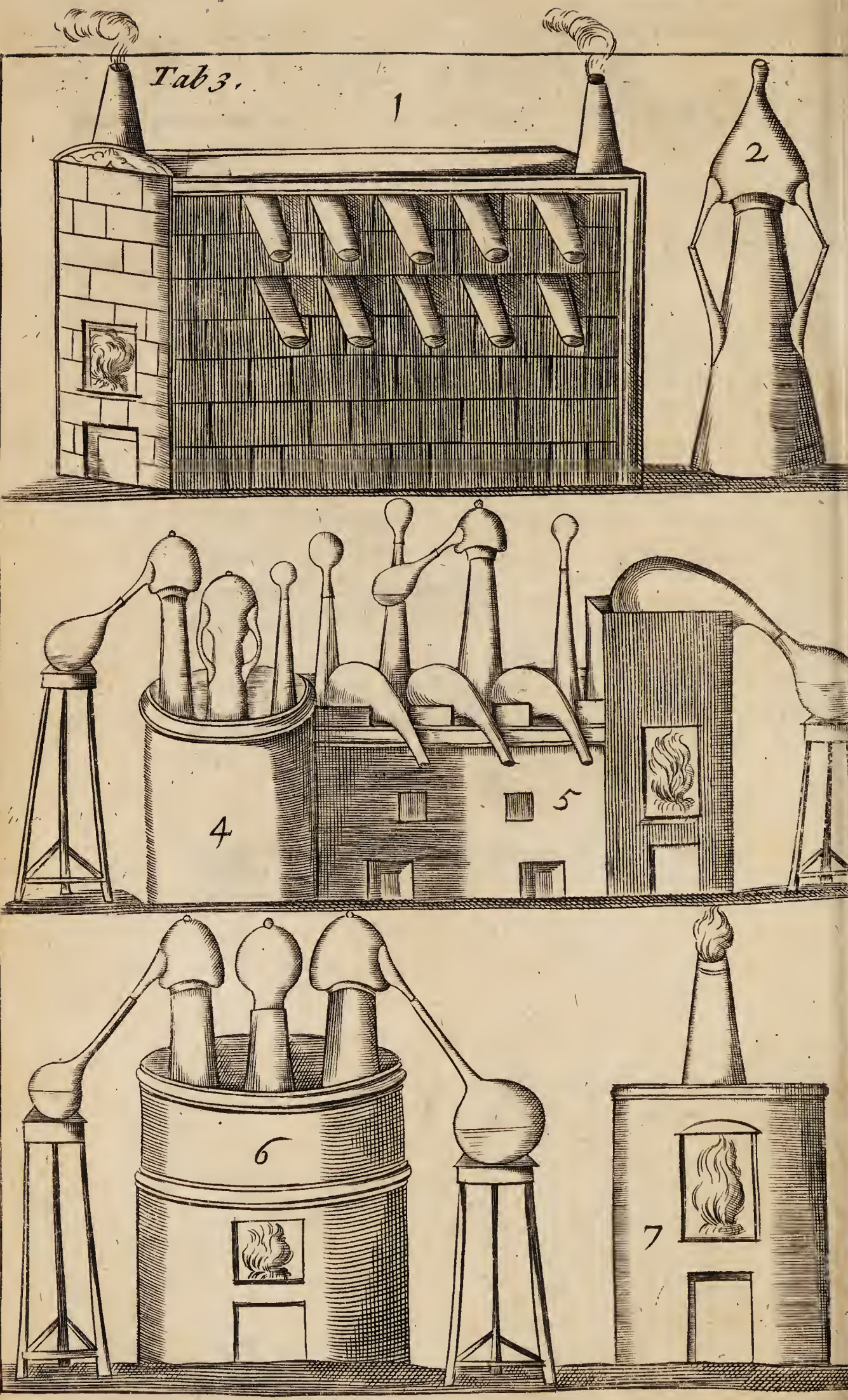
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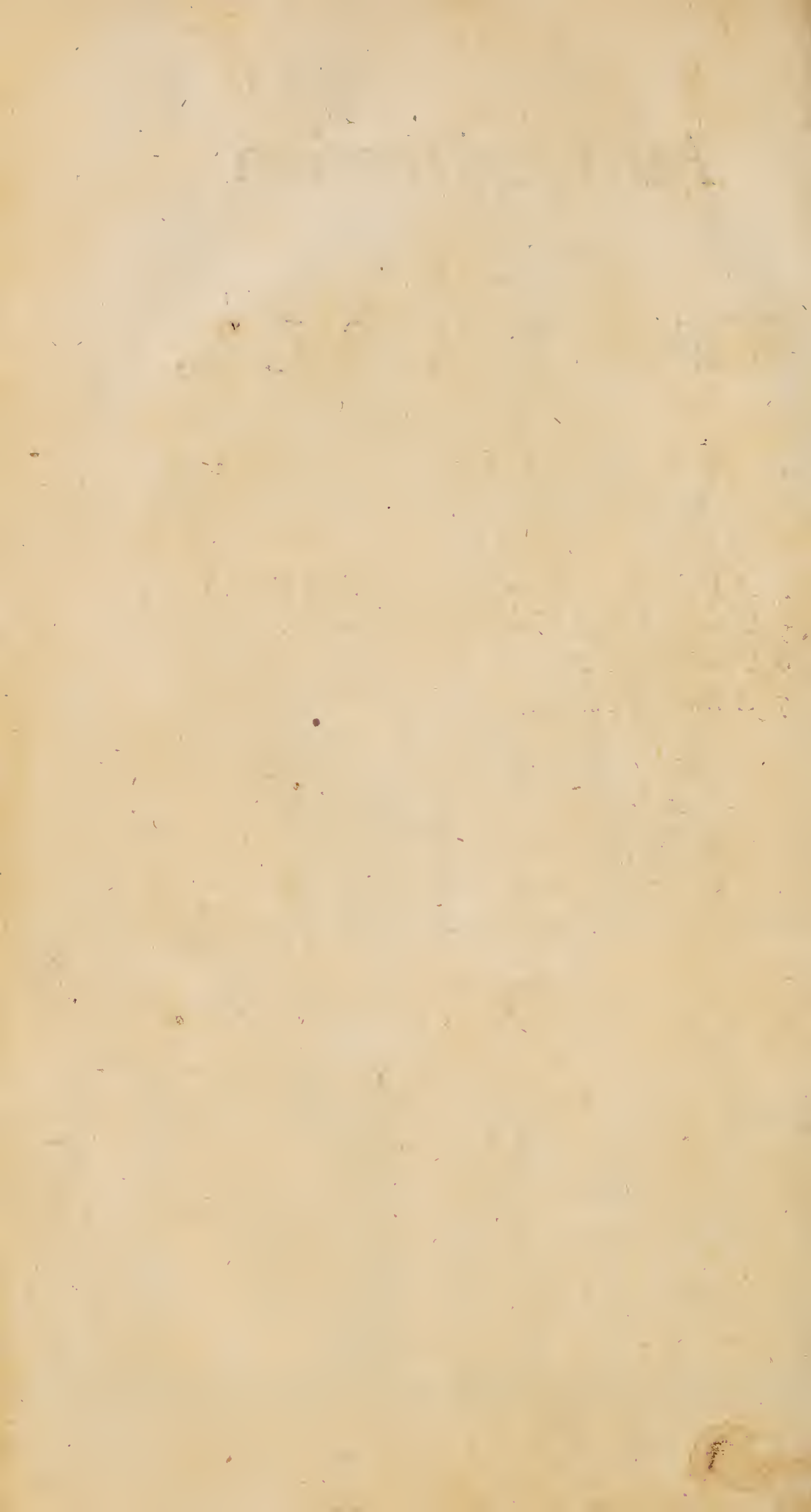


An Explanation

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Third T A B L E.

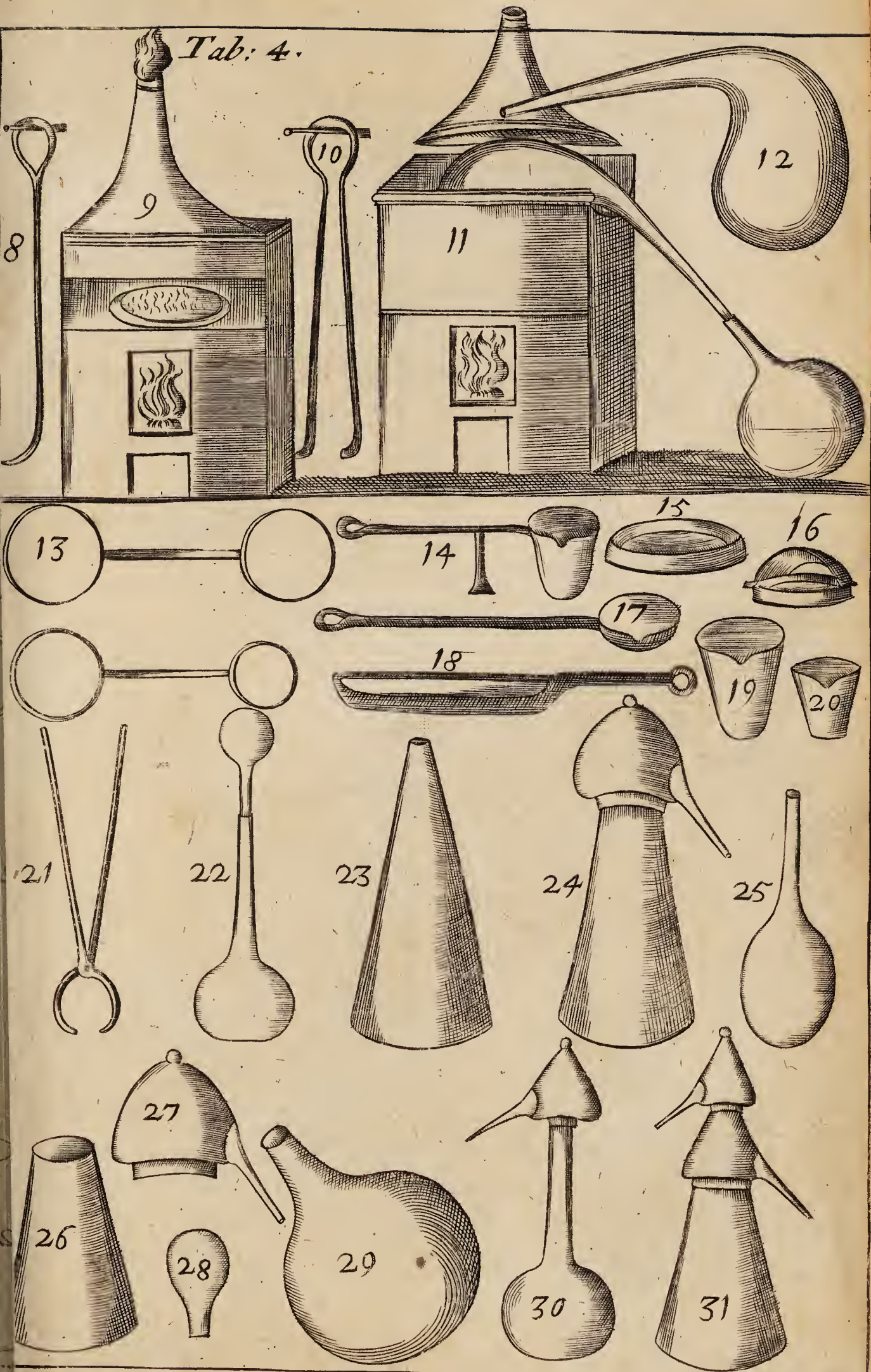
- 1 **A** Reverberatory Furnace, to distil, with
twenty long Necks.
- 2 A Pelican, or Circulatory.
- 4 A Balneum at the end of the digesting Furnace.
- 5 The Sand-Bath of the digesting Furnace.
- 6 The Balneum Mariae.
- 7 A Melting Furnace.

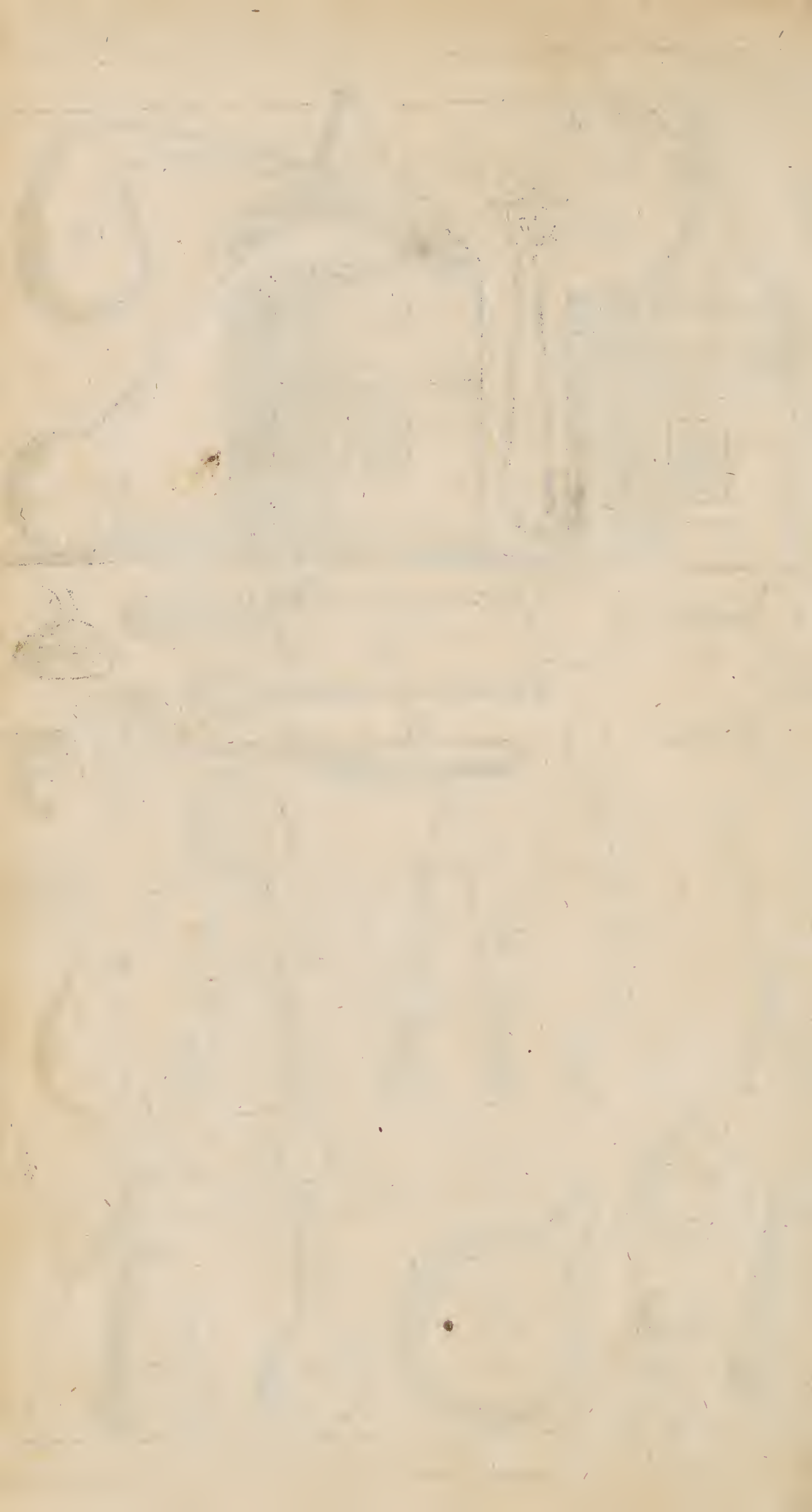


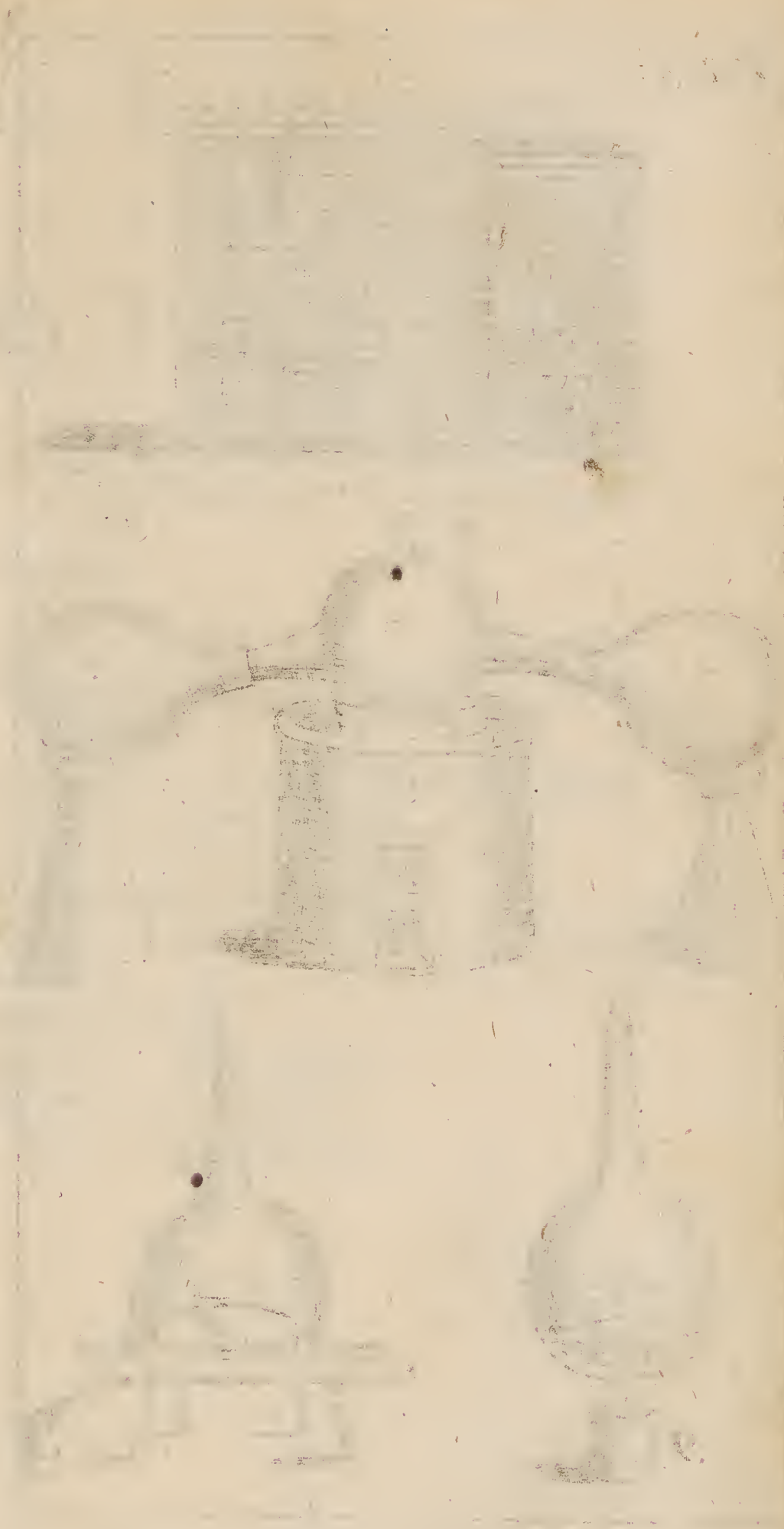
An Explanation of the Fourth Table.

- 8 **A** Hook to clear the Grate with.
- 9 **A** Testing Furnace.
- 10 A Pair of Tongs.
- 11 A small Reverberatory, or an open Furnace, for one Retort.
- 12 A Retort.
- 13 Iron Rings to cut Glasses withal.
- 14 A Cone, or Antimonial Horn,
- 15 A Test.
- 16 A Test with its Muffle.
- 17 A Ladle.
- 18 An Ingot.
- 19 A Crucible.
- 20 A less Crucible
- 21 A Pair of Tongs to take a Pot out of the Fire withal.
- 22 Two Bolt-Heads, or Matrasses, made a Circulating Glass of.
- 23 An Uncut Body.
- 24 A Body and Head.
- 25 An Egg, or Oval Matrass.
- 26 A Cut Body.
- 27 A Distilling Head.
- 28 A Blind Head.
- 29 A Ballon, or Receiver.
- 30 A Matrass, with its Head.
- 31 A Body, with a double Head.

Tab: 4.

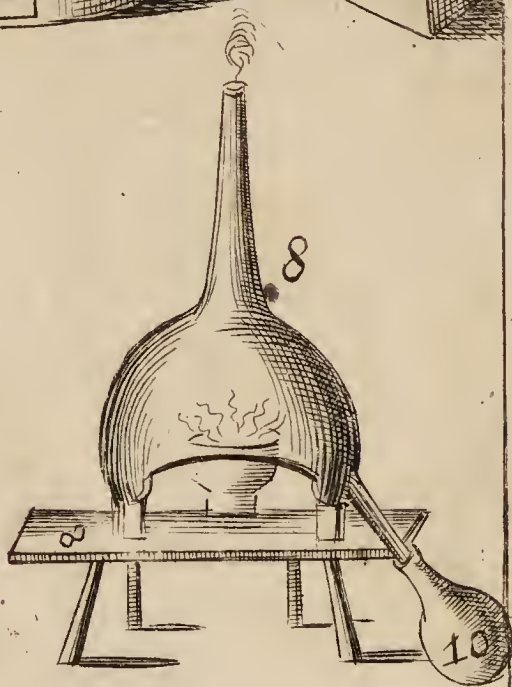
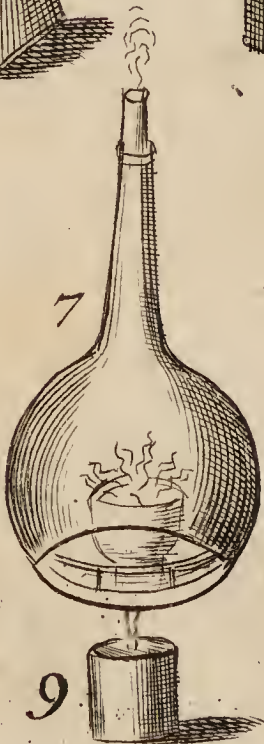
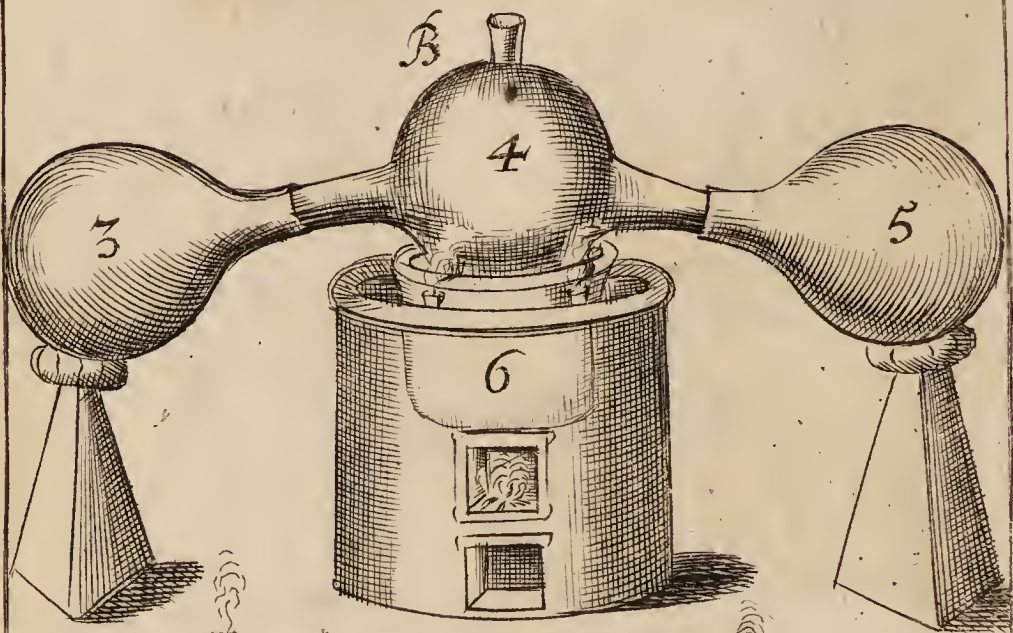
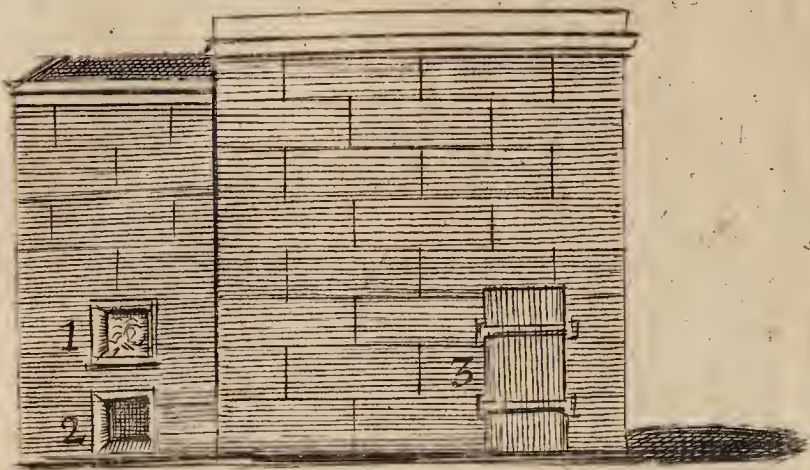






Tab. 5.

A



An Explanation OF THE Fifth TABLE.

A **T**HE Great Furnace, in which the Flowers of Brimstone are sublimed in a great quantity.

- 1 The Fire-place.
- 2 The Ashes-Hole.
- 3 The Door into the Body of the Furnace, by which the Flowers are taken out.

B The little Furnace, in which Flowers of Sulphur are sublimed in small quantity.

- 4 The Head, made of Earth or Iron.
- 5 5 The two Ballons or Receivers.
- 6 The Vessel which contains the Sulphur in the Furnace.
- 7 The plain Bell-Glass.
- 8 The Bell with a Verge and Beak.
- 9 The Receiver to the plain Bell.
- 10 The Receiver to the Verged Bell.

Am. Exposition

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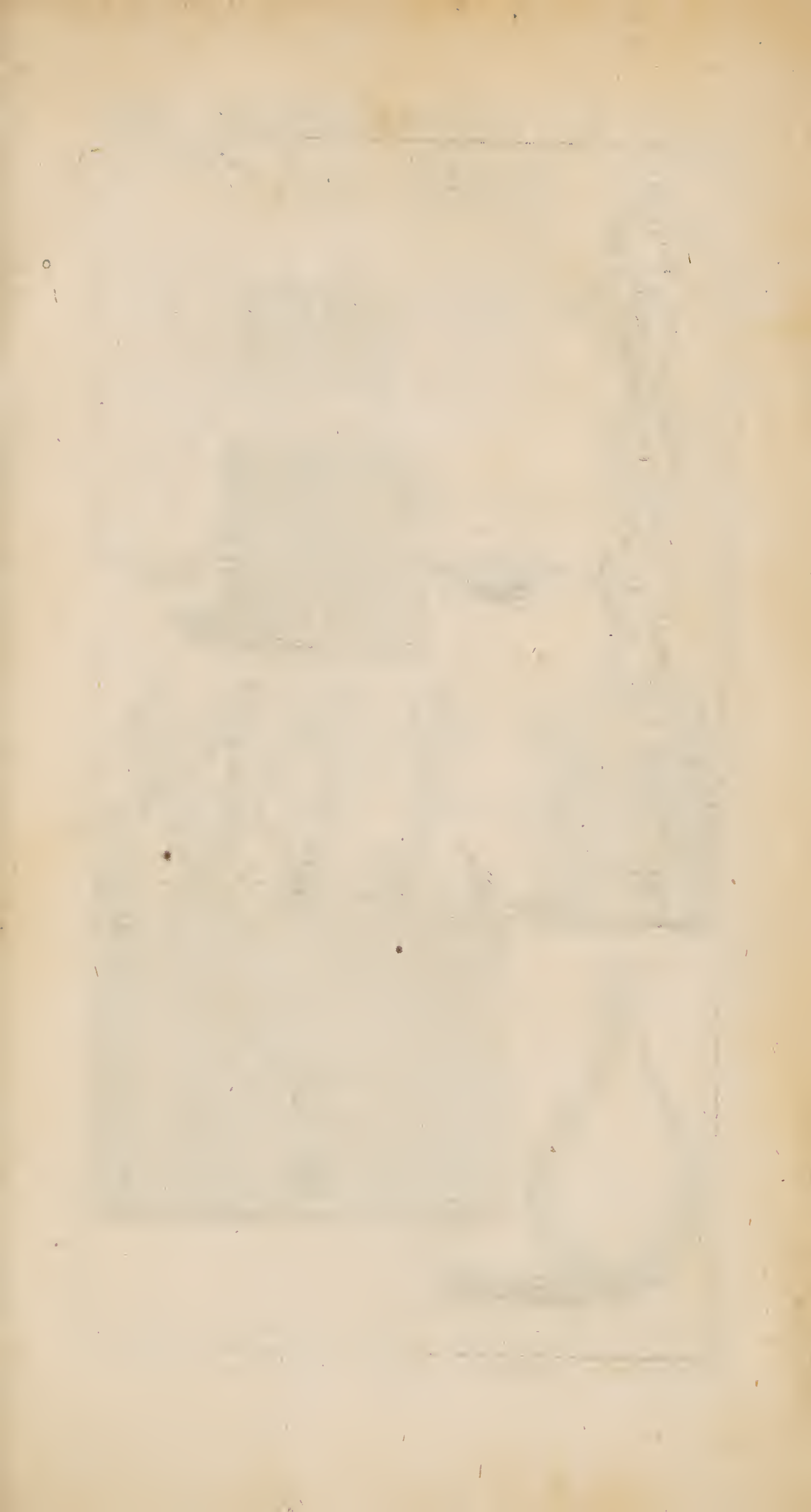
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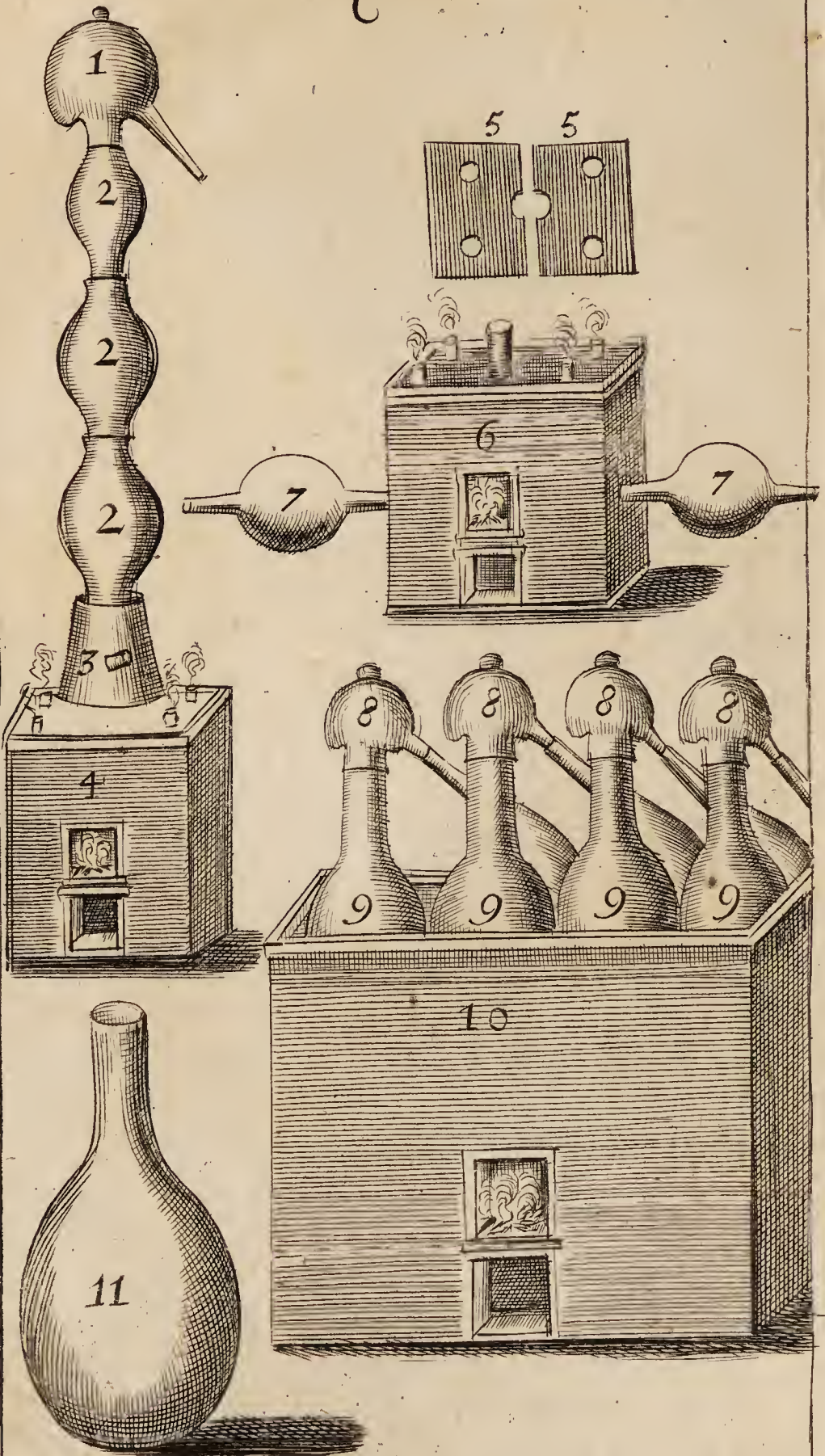
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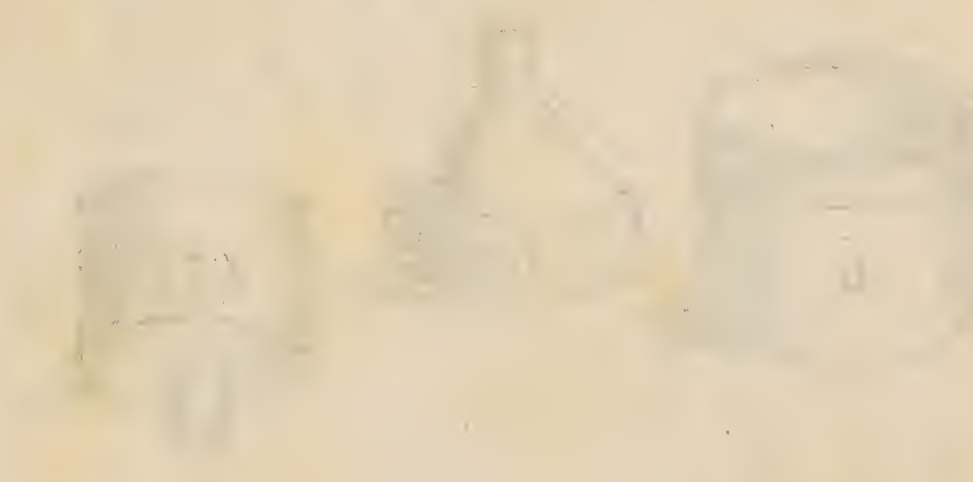
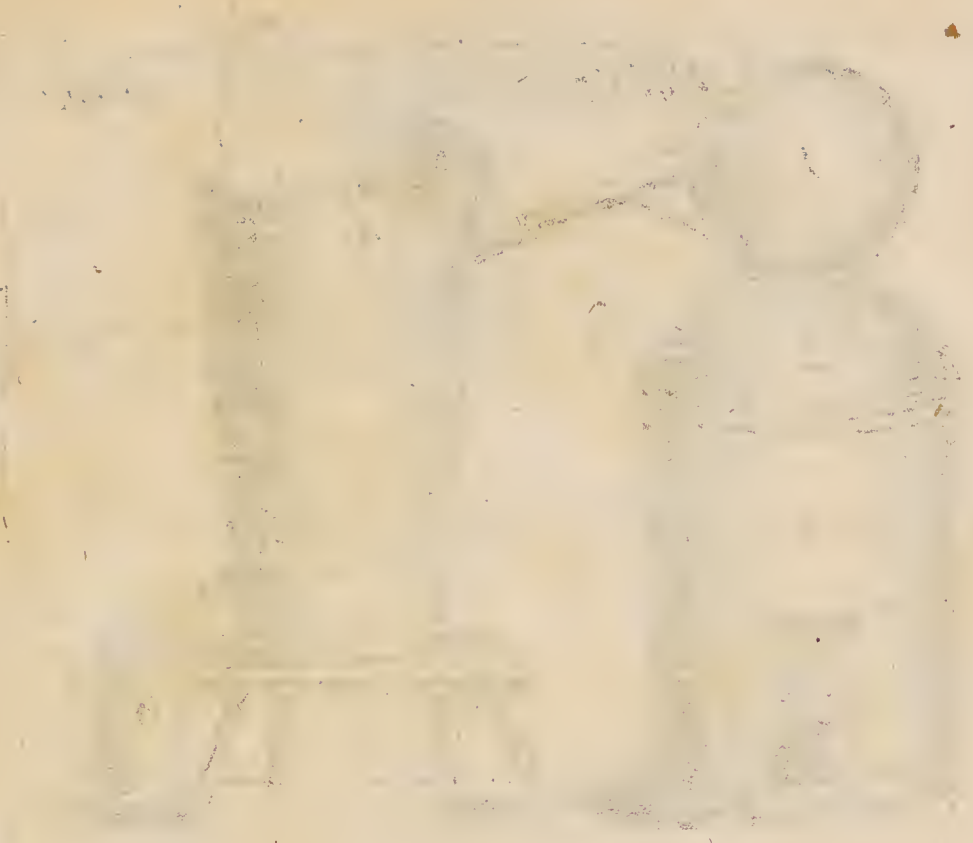
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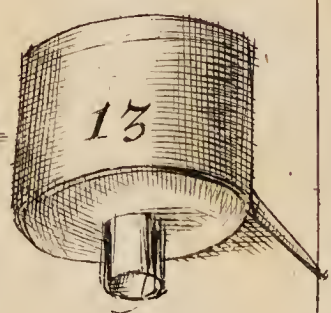
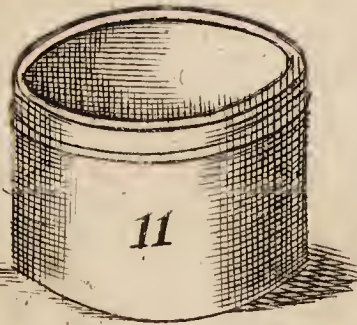
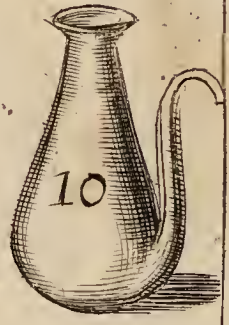
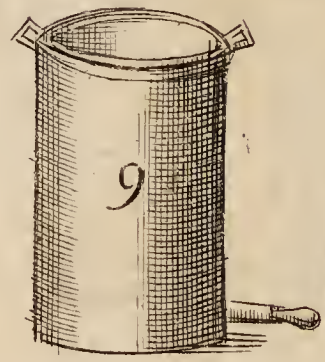
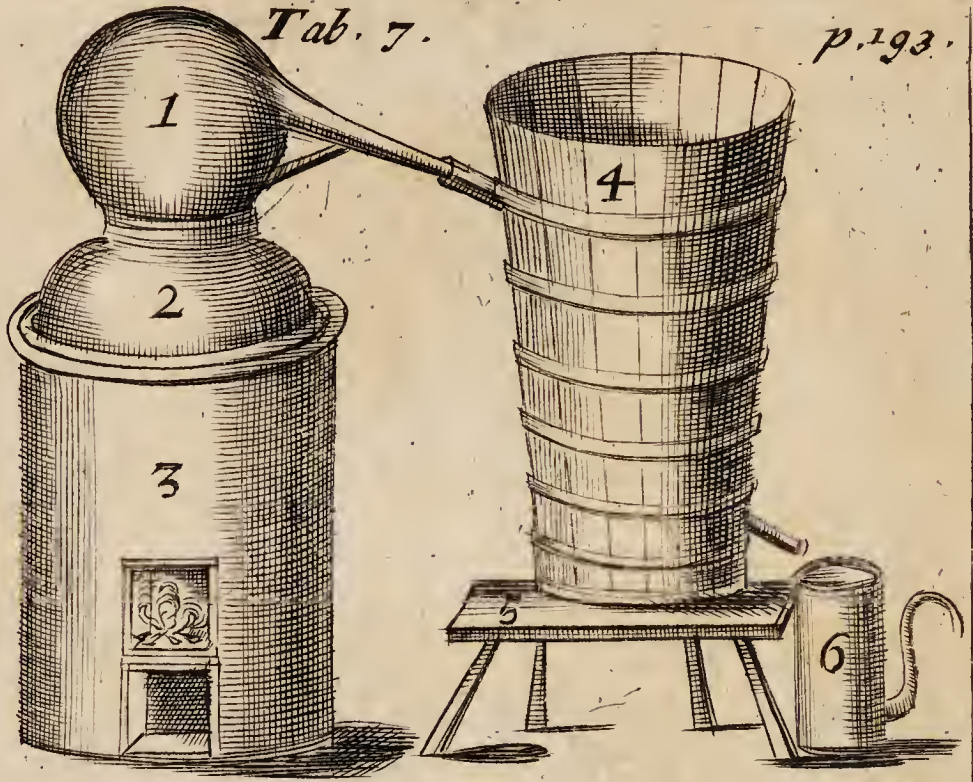


An Explanation of the Sixth Table.

C **T** *HE Second Plate of Subliming-Furnaces.*

- 1 *The Head of the Aludels.*
- 2 2 2 *The three Aludels.*
- 3 *The Body into which the Matter that is to be sublimed, is projected.*
- 4 *The Body of the Furnace.*
- 5 5 *The Covers of the Top of the other Subliming-Furnace.*
- 6 *The Body of the other Subliming-Furnace.*
- 7 7 *The Aludels, to which more Receivers may be adapted.*
- 8 8 8 8 *The Heads of the Vessels wherein the Mercury Sublimate is made in great quantity.*
- 9 9 9 9 *The Subliming-Vessels set in the Furnace.*
- 10 *The Body of the Furnace.*
- 11 *The Subliming-Vessel out of the Furnace.*





An Explanation

OF THE

Seventh TABLE.

- 1 **T**HE Head made of Copper or Pewter.
- 2 The Copper Still.
- 3 The Body of the Furnace.
- 4 The Tub, or Refrigeratory, which contains the Worm and Water.
- 5 The Supporter of the Tub.
- 6 A Vessel of Glass or Pewter, called a Spout Receiver.
- 7 A Glass-Funnel.
- 8 A Separating Glass.
- 9 Another Separating Glass with a Tap.
- 10 A Glass-Spout Receiver.
- 11 The Body of the Balneum, to fit into the Mouth of the Copper-Still.
- 12 The upper part of the Balneum.
- 13 The Head of the Balneum, with its Bucket or Refrigeratory.

THE HISTORY OF THE

ROYAL SOCIETY OF LONDON

FROM ITS INSTITUTION

TO THE PRESENT TIME

BY JOHN HENRY MADDISON

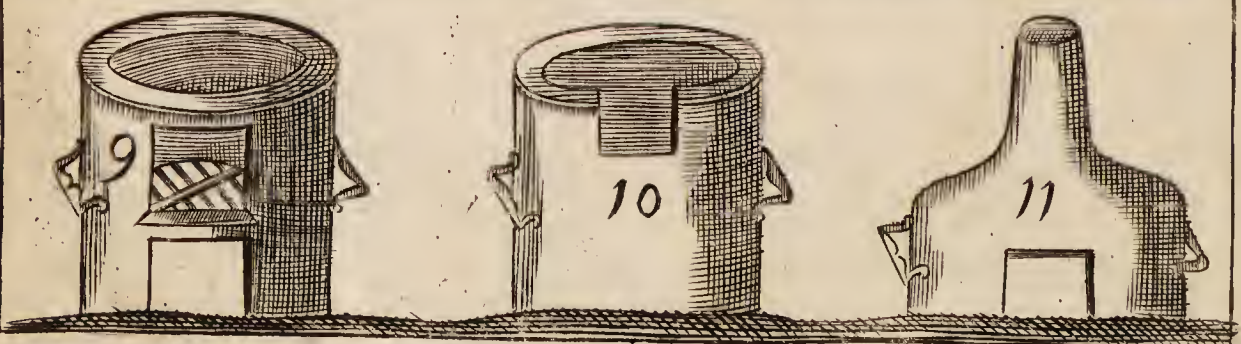
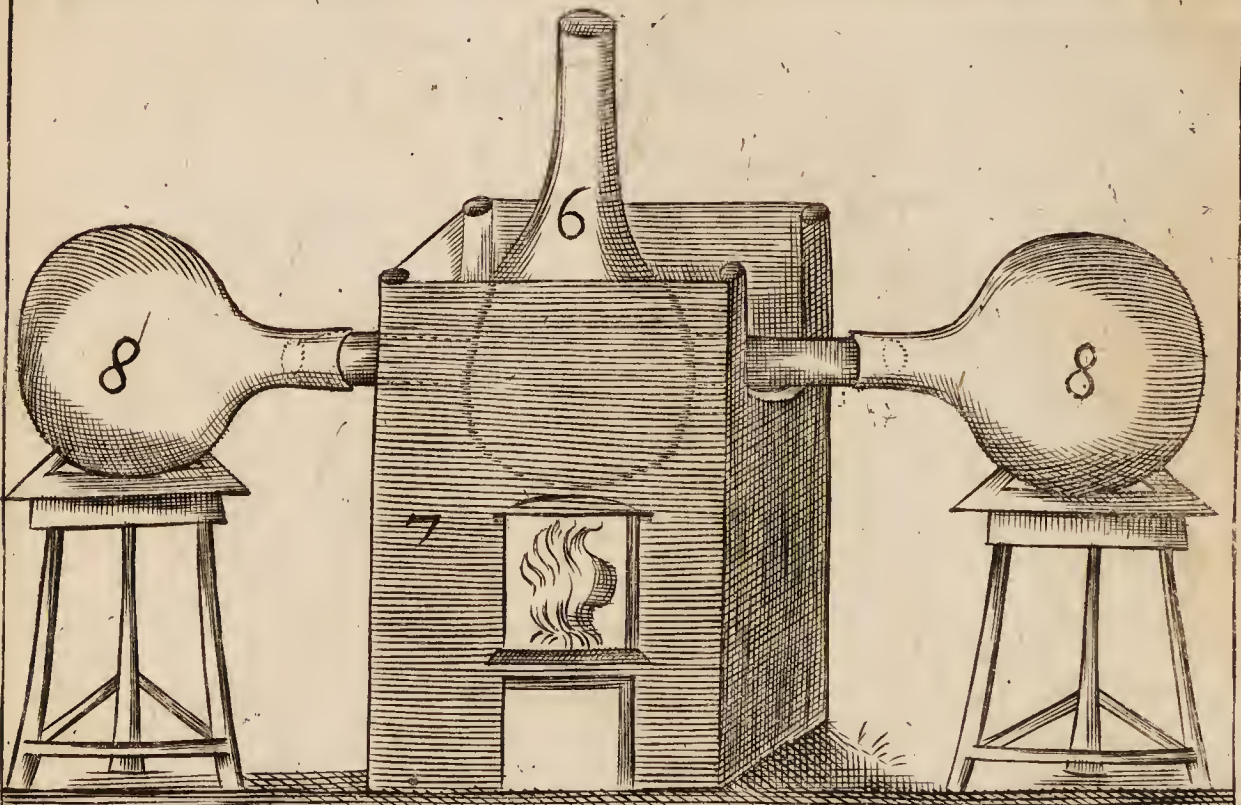
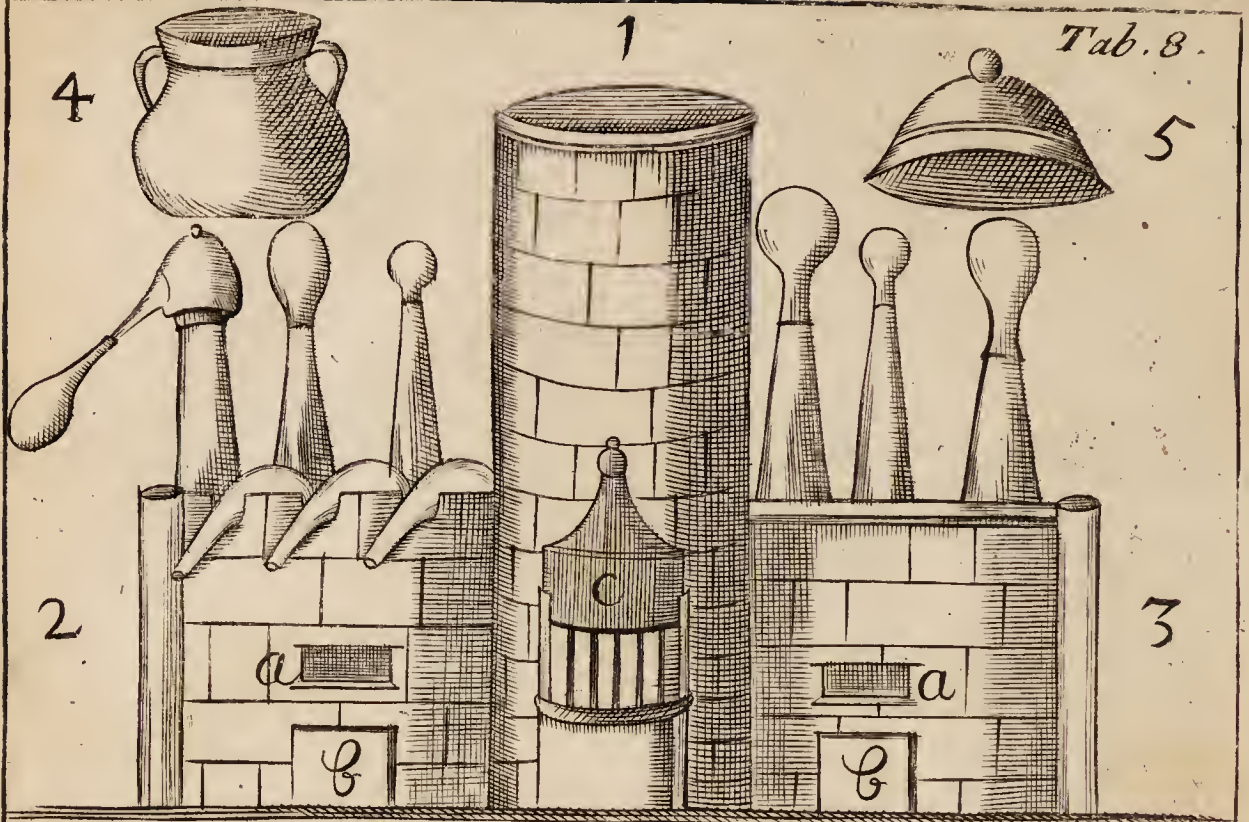
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JOHN HENRY MADDISON

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An Explanation of the Eighth Table.

- 1 **T**HE Tower of the Athanor.
- 2 The dry Bath of the Athanor.
- 3 The moist Bath of the Athanor.
- 4 A little Pot to place on the Top of the Tower, wherein you may boil or stew any thing at your pleasure.
- 5 The Cover of the Tower when the Pot is removed.
- a a The Holes by which you may cleanse the Flue, when there is Occasion.
- b b The Ovens, wherein you may bake ; in which you may also hatch Chickens.
- c An Iron-Door to slip up and down, as Occasion requires : when you would roast a Pullet, pull it up.

The Furnace called an *Athanor*, was invented to keep a constant Heat, even to twelve Months, or longer, as some Chymical Operations require ; which may be augmented or decreased, by opening or shutting the Registers, as you please, and according to the Magnitude of the Tower : it requires no Attendance above once in twenty-four or one hundred Hours.

- 6 *The Neck of the Vessel which contains the Matter you design to distil, or sublime.*
- 7 *The Body of the Furnace.*
- 8 *The Ballons or Receivers.*

This Furnace is to distil any Combustible Composition of Nitre, Sulphur, Antimony, &c. by projecting a little at a time into *Fig. 6.* and presently stopping the Orifice with a fit Stopple.

- 9 *The lower Part of the Furnace, from the Ashes-hole to the upper part of the Fire-hole.*
- 10 *The middle Part of the Furnace which contains the distilling Vessel.*
- 11 *The Dome, or upper Part of the Furnace.*

This is a Portable Furnace, easily removed, in which you may melt, or distil *in Balneo*, Sand, or naked Fire, as you please to order it. The outside of the Furnace may be made of Copper or Iron, and it may be lined with a Lute or Fire-stone.



