

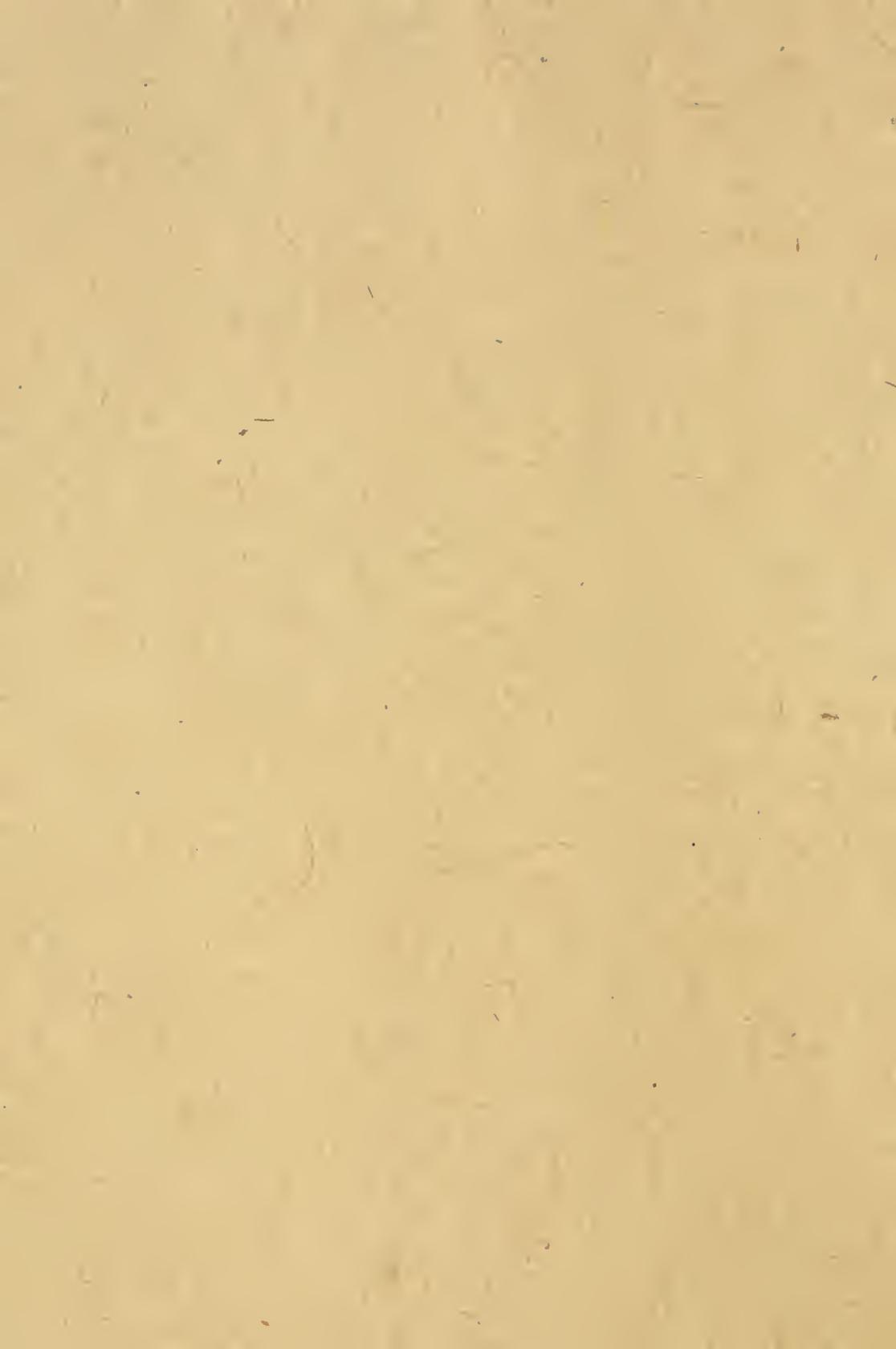
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POLYGRAPHICES

LIBER PRIMUS.

O F

DRAWING.

CHAP. I.

Of Polygraphice in General.

I. **P**olygraphice is an Art, so much imitating Nature, as that by proportional lines with answerable Colours, it teacheth to represent to the life (and that *in plano*) the forms of all corporeal things, with their respective passions.

This definition is clear out of the nature of the Art, (being also a liberal Art, as are Arithmetick, Geometry, Astronomy, Dialing, Musick, &c.) It is said to represent things in plano, to distinguish it from Carving, which is also a representation of natural things with Rotundity and thickness.

II. It is called, in general, in Greek *ἑσώματιον*, in Latin *Pictura*, and in English the *Art of Painting*.

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III. It

III. It is sevenfold (to wit) in *Drawing, Engraving, Etching, Limning, Painting, Washing* and *Colouring*.

IV. *Drawing* is, that whereby we represent the shape and form of any corporeal substance in rude lines only.

V. It consists in proportion and passion, as it hath relation to motion and situation, in respect of Light and Vision. If to *proportioned quantity*, you add *Colour*, you will have at length the form and perfection of the Figure: so that whosoever sees it may be able to say this is a *man*, that a *Peacock*, that a *Leopard*; and again, this is *John*, that *Thomas*, a third another man, &c. And by the exact performing of these things, you may depict one *Fearful*, another *Crying* and *Lamenting*, another *Angry*, another in *Love*, &c. and that so excellently, that the Party counterfeited may be thereby easily known.

VI. *Sanderfon* saith, This admirable Art is the Imitation of the surface of Nature in Colour and Proportion. 1. By Mathematical demonstration. 2. By Chorographical description. 3. By shapes of living creatures, 4. And by the forms of Vegetables; in all which it prefers Likeness to the life, conserves it after death, and this altogether by the Sense of Seeing.

VII. The *proportion* shews the true length, breadth or bigness of any part (in known measures) in respect of the whole, and how they bear one to another: The *passion* represents the visual Quality, in respect of love or hatred, sorrow or joy, magnanimity or cowardice, majesty or humility; of all which things we shall speak in order.

VIII. Herein also *Painting* differs from *Carving*; for the *Carvers* intent is only to give the self-same *quantity* to his Figure, which his natural Pattern hath, viz. equal to the Life in *Quantity* only: whereas the
Painter

Painter by the help of *Colours*, adds a kind of *Life* to the *Similitude*, and gives not only *quantity*, but a *Colourable resemblance* also.

CHAP. II.

Of the Instruments of Drawing.

I. **T**HE *Instruments* of Drawing are sevenfold, *viz.* Charcoals, feathers of a Ducks wing, black and red Lead Pencils, Pens made of Ravens quills, Rulers, Compasses and Pastills, or Crions.

II. *Charcoals* are to be chosen of Sallow-wood split into the form of Pencils, and sharpened to a point, being chiefly known by their pith in the middle.

Their use is to draw lightly the draught over at first, that if any thing be drawn amiss, it may be wiped out and amended.

III. The *Feathers* ought to be of a Ducks wing, (though others may serve well enough) with which you may wipe out any stroke of the Charcoal where it is drawn amiss, lest variety of Lines breed confusion.

IV. *Black and red lead Pencils*, are to go over your Draught the second time more exactly, because this will not wipe out with your hand, when you come to draw it over with the Pen.

V. *Pens* made of Ravens quills (but others may serve) are to finish the work: but herein you must be very careful and exact, for what is now done amiss there is no altering of.

VI. The *Rulers*, which are of use to draw straight or perpendicular lines, triangles, squares or polygons,

the which you are to use in the beginning, till practice and experience may render them needles.

VII. *Compasses* made of fine Brals with Steel points, to take in and out, that you may use black or red Lead at pleasure.

Their use is first to measure (by help of a curious scale of equal parts upon the edge of your Ruler) your proportions, and whether your work is exact which is done with the Charcoal. Secondly, To draw Circles, Ovals and Arches withal.

VIII. *Pastils or Crions* are made of several Colours to draw withal, upon coloured Paper or Parchment Thus,

Take Plaister of Paris or Alabaster calcined, and of the colour of which you intend to make your Pastils with, ana q.f. grind them first asunder, then together, and with a little water make them into paste, then with your hands roul them into long pieces like black-lead Pencils, then dry them moderately in the Air: being dryed, when you use them, scrape them to a point like an ordinary Pencil.

And thus may you make Pastils or Crions of what colour you please, fitting them for the *Faces of Men or Women, Land-skips, Clouds, Sun-beams, Buildings and Shadows.*

IX. *Another way to make Pastils or Crions.*

Take Tabaco-pipe Clay, and with a little water temper the same with what colour you please, making several according to the several heights or Colours you intend, which mix with the said Tabaco-pipe Clay, so much as the Clay will bear, work all well together, make or form it into *Pastils or Crions*, and let them dry for use.

X. *A Pastil or Crion for a brown Complexion.*

Grind on your stone Ceruse, red Lead, or Vermilion, English Oker, and a little Pink; to this add a propor-

Chap. 2. *The Instruments of Drawing.*

proportionable quantity of Plaister of Paris burnt and finely sifted, or Tabaco-pipe Clay; mix either of them with the said Colours, and then roul them up. Here note, that Ceruse is mixed with all the other Colours also. Roul them up upon a Marble Stone, and let them be about the length of a Finger, and the thickness of a Goose quill.

XI. These *Pastils* or *Crions* being dry, you may sharpen them (when you use them) with a Penknife to a point, so sharp that you may draw a hair. The Colour most difficult to work in this kind is *Crimson*, if you make use of *Lake*, which you may avoid by making use of *Rosset*: and be sure to mix Ceruse with all your other Colours and Shadows whatsoever.

After this manner with proper Compositions you may make all manner of beautifull Colours, as Greens for Land-skips, and other Colours for Rocks, Grounds, Skies, Walks, &c.

XII. *A Pastil or Crion for Greens.*

These *Crions* are made of Pink and Rice; and Masticote and Smalt; and Masticote and Indico, with which Colours you may make them lighter or deeper as you please; remembering that where you are to temper soft or firm Colours, as Umber, Oker, Indico, &c. you are to take the less *Plaister of Paris*; but where the Colours are loose, there bind them stronger and faster, by adding more *Plaister of Paris*.

XIII. *Another way to make Pastils or Crions.*

Take your Colours and grind them very fine upon a Marble, and sift them through a fine Tiffany sieve: Then take a piece of Tabaco-pipe clay, and lay it on your grinding Stone, and temper it and your Colours together with strong Ale-wort. You must be very carefull not to make them too wet, but o

an even temper; like moist Clay, to roul up with your hand upon your Stone; Then take a piece of Paper, and dry them in an Oven, after the Bread is taken out; or you may otherwise dry them in a Fire-shovel by degrees till they be hard enough, which to know, have a piece of paper by you, and try if they cast, which if they do, they are not dry enough, then dry them again longer till they will not cast: after which take a feather and some Sallet-Oyl, and oyl them lightly over, and so lay them to dry again, till the Oyl be drank well into them, which will make them excellent, and to work free and easie.

XIV. Observe that those Colours which bind hard of themselves, must be tempered with less Tabacopipe-Clay. Moreover, *Yellow-Oker* burnt and rouled up into a *Pastil* or *Crion*, and dryed with a moderate heat; and then being thoroughly dryed, and made very warm, and dipt into Linseed-Oyl, and dryed again till the Oyl becomes well soaked into it, becomes most excellent. This being sharpened to a very fine point, you may draw admirably withal; and it will have that quality, that what is drawn with it, although rubbed hard with your finger or hand, it will not rub off, nor any part of it stir. And without doubt all the other Colours may be made to have the same quality. The *German-Masters*, and those of the *Low-Dutch*, made all their *Crions* with that quality not to rub off, but were extreamly neat, brisk, lively, and (like Oyl-painting) very strong.

XV. *The way and manner of using your Pastils or Crions.*

Colour the paper that you intend to draw on with a *Carnation* or *Flesh-colour*, near the Complexion of the Party you intend to draw after; cover the whole paper with the said Complexion, which is made of *Ceruse*, *Minium*, and a little *yellow Oker* ground with

with a little Gum-Arabick. When you prepare them, make a good number of various Complexions together, it not being worth while to make one at a time; lay this Ground-colour with a wet sponge, but let the Colour be so bound with Gum, that it may not stir from the paper by rubbing. This being done and dry, draw the Outscetches or first rough Draught with Coal; that being as you would have it, draw over the same lines again more perfectly with red Chalk; then with your several Pastils or Crions, rub in your Colours first, and after, with your fingers sweeten and mix them together; driving and confounding them one into another, after the manner of Oyl-Painters. And because many times the *Crions* will not sharpen to so good a point as black or red Chalk, you must be very carefull to close and finish all your work at last with red and black Chalk, which you may sharpen at pleasure.

XVI. *Another way of Drawing with Pastils or Crions on blue Paper.*

The Ground Colours are to be rubbed in first with aencil, and afterwards with a stubbed Pencil or your Finger. After the same manner you may work in Parchment exceeding neatly and curiously, so that at a small distance they may be taken for Limning.

XVII. *To make white Pastils or Crions.*

Take Ceruse, or ordinary white Chalk, four Ounces: Roch-Allum, two Ounces, grind them together fine, make them up into a Maïs, Burn them in a Crucible, and keep them for use.

XVIII. To the former add good Copies, Patterns and Examples of good Pictures, and other Draughts, without which, it is almost impossible, that the young Artist should ever attain to any perfection in this Art.

Those that desire to be furnished with any excellent Patterns, Copies or Prints, may have of all sorts, whether of Humane shape, Perspective design, Landskip, Fowls, Beasts, Insects, Plants, Countreys, or any other artificial Figures, exquisitely drawn, at very reasonable rates, where this Book is to be sold.

CHAP. III.

Of the Precepts of Drawing in general.

I. **B**E sure to have all the necessaries aforesaid in readiness, but it will be good to practise as much as may be without the help of your Rule and Compasses; it is your eye and fancy must judge without artificial measurings.

II. *Then first begin with plain Geometrical Figures, as Lines, Angles, Triangles, Quadrangles; Polygons, Arches, Circles, Ovals, Cones, Cylinders, and the like. For these are the foundations of all other proportions.*

III. The *Circle* helps in all orbicular forms, as in the Sun, Moon, &c. the *Oval* in giving a just proportion to the Face and Mouth; the mouth of a Pot or Well, the foot of a Glass, &c. the *Square* confines the Picture you are to copy, &c. the *Triangle* in the half-face; the *Polygon* in Ground-plats, Fortifications, and the like; *Angles* and *Arches* in Perspective; the *Cone* in Spires, tops of Towers and Steeples: the *Cylinder* in Columns, Pillars, Pilasters, and their Ornaments.

IV. Having made your hand fit and ready in general Proportions, then learn to give every object its due shade according to its convexity or concavity, and to elevate

elevate or depress the same, as the object appears either nearer or farther off the light, the which is indeed the life of the work.

V. *The second Practice of Drawing*, consists in forming *Fruits*, as Apples, Pears, Cherries Peaches, Grapes, Strawberries, Peascods, &c. with their *Leaves*: the imitation of *Flowers*, as Roses, Tulips, Carnations, &c. *Herbs*, as Rosemary, Tyme, Hyssop, &c. *Trees*, as the Oak, Fir, Ash, Walnut, &c.

VI. *The third Practice of Drawing imitates*, 1. *Beasts*, as the Lamb, Elephant, Lion, Bear, Leopard, Dog, Cat, Buck, Unicorn, Horse, &c. 2. *Fowls*, as the Eagle, Swan, Parrot, Partridge, Dove, Raven, &c. 3. *Fishes*, as the Whale, Herring, Pike, Carp, Thornback, Lobster, Crab, &c. of which, variety of Prints may be bought at reasonable rates.

VII. *The fourth Praxis imitates* the Body of Man with all its Lineaments, the Head, Nose, Eyes, Ears, Cheeks, Hands, Arms, and Shadows all exactly proportional both to the whole, and one to another, as well to situation as magnitude.

VIII. *The fifth Praxis is in Drapery*, imitating Cloathing, and artificially setting off the outward Coverings, Habit and Ornaments of the Body, as Cloath, Stuff, Silk and Linen, their natural and proper folds; which although it may seem something hard to do, yet by much exercise and imitation of the choicest Prints will become facil and easie.

IX. In drawing of all the aforegoing forms, or whatever else, you must be perfect, first in the exact proportions: secondly in the general or outward lines, before you fall to shadowing or trimming your work within.

X. In mixed and uncertain forms, where Circle and Square will do no good (but only the *Idea* there-
of

of in your own fancy) as in Lions, Horses, and the like; you must work by reason in your own judgement, and so obtain the true proportion by daily practice. *Thus,*

Having the shape of the thing in your mind, first draw it rudely with your coal, then more exactly with your Lead or Pencil; then peruse it well, and consider where you have erred, and mend it, according to that Idea, which you carry in your mind; this done, view it again, correcting by degrees the other parts, even to the least Iota, so far as your judgment will inform you; and this you may do with twenty, thirty, forty or more papers of several things at once: having done what you can, confer it with some excellent pattern or print of like kind, using no rule or compass at all, but your own reason, in mending every fault, giving every thing its due place, and just proportion; by this means you may rectifie all your errors, and step an incredible way on to perfection.

XI. Having then good Patterns and Copies to draw by, the young Artist must learn to reduce them to other proportions either greater or smaller, and this by often and many tryals (as we shall hereafter more particularly teach) this requires great judgement, for in a Cut, you shall find neither circumscribing strokes, nor difference between light and light, or shadow and shadow; therefore serious observations are required in the sight of those things, whether coming forwards or going backwards.

XII. The drawing after Plaister-work, done by skilful Masters, as the Gladiator and children of *Francisco*, the Rape of the *Sabine* Women, the Wrestler, the *Venus* of Greece, *Hercules*, *Hermes*, anatomical dissections, and other pieces of antiquity, are main and necessary Introductions to attain a perfection in drawing after the life.

XIII. This

XIII This done, let the young Artist now begin to exercise in drawing after the life; (for that is the compleatest, best, and most perfect Copy, which Nature has set for observation) wherein the liberty of imitation is presented in the largest latitude: and this must be attained by much practice and diligent Exercise, adjoining the Instructions of a good Master.

XIV. In this Practice of Drawing, let there be a perfection attained, before ever there be the least thoughts of Colours or Painting: for that afterwards all things belonging to Painting, will in a short time be easily and perfectly understood.

C H A P. IV.

Of particular Observations in the Art of Drawing.

I. **I**N drawing after a Print or Picture, put it in such a light, as that the gloss of the Colours hinder not your sight, so as that the light and your eye may equally obliquely fall upon your piece; which place at such a distance, that at opening of your eyes, you may view it all at once, the greater your Picture is, the further off you must place it to draw after: the which you must always be sure to put right before you, a little reclining.

II. Observe to draw all your out-lines at first very faint with a Coal, because if amiss, you may rub them out with the feathers of a Ducks Wing, or a bit of bread, and so mend the fault the more easily, which if you lean hard and draw very black will be more difficultly rubbed out. These out-lines must be drawn true and agreeable to the Pattern, before you
begin

begin to shadow any part of it. The out-lines next the light draw very soft and faint; and having drawn one feature, let it be a direction for you in some measure to draw another, by observing with your eye (and being also guided by your Reason) the distance from that to the next feature, making a small mark at the place with your Coal, and then draw it, and so the next, till the whole Figure is designed.

III. Then observe the middle of your Picture to be copied, which touch upon your paper with the point of your Coal: then observe the most perspicuous and uppermost figures (if more than one,) which touch gently in their proper places, thus running over the whole draught, you will see the Skeleton, as it were, of the work.

But if you go on without these considerations, whereunto your Draught will tend or run; then having ended your work, you will be forced to draw the same many times over and over again, and it may be, every time to as little purpose; by the tediousness of which, your ingenuity will be dulled.

IV. Be secure of a right and true draught, though you do it slowly; what you think may be done in two or three hours, it will be better to bestow two or three days upon: by this means (though you act leisurely, yet you will act prudently, and) you will both sooner and better than can be imagined, attain the perfection of what you desire.

V. These out-sketches being made, view them diligently, whether they answer your pattern apparently; for the Gestures of the life ought to shew themselves eminently in the first and rudest draughts thereof; without which, be sure your work will be faulty.

VI Having

VI. Having viewed these sketches, begin to correct and amend them (where you find them amiss) and *gradatim* by adding or diminishing a little here and there, as you see it differ from your pattern, you will bring it nearer and nearer to the life.

VII. Observe the distance of one Muscle, or Joynt, or Limb to another, and the same in all other Accidents of the Figure: their Thickness, Bigness, Length, Breadth, Windings, Turnings, Shadows, &c. Shadow next to the light very faintly; and where you see bold and free Touches, be not fearful in expressing the same. In drawing a Head by the life or otherwise, observe to place your Features exactly right upon the Cross lines, whether it be a full face, or a three quarter face, as you may see in the examples. In *foreshorting*, there make the Cross lines to fly upwards, where they look upwards, but bending downwards in a circular manner, where the Aspect is downwards. And having the out-lines true made by a Coal, you must then proceed to trace over again the same lines with a Pen, drawing them more exactly; and by imitating all the Hatches, with their exact distances one from another, their crossings, turnings and winding, with much boldness and freedom perfect your design.

This with a Charcoal you may easily do, because you may wipe away what is amiss.

VIII. In drawing after Plaister and embossed works, chose a good North light, which let descend from above, not dilating or scattering it self too much, by which you may the more pleasantly shade your work.

If the Room has a South light, put oiled Paper before the window, or if you draw by Candle-light, have a Lamp shaded with oiled Paper; for a Candle will grow lower and lower,
which

which causes the shades to change, all which you avoid in a Lamp.

IX. Then set your self down about three times as far from the Pattern as the Pattern is high; so as your eyes in a direct line may view the same: then with a plumb line observe what parts of your Pattern appear to you, by the extending streight thereof, and how one under another they come in sight, and accordingly make your fundamental sketches, as we have just before taught.

X. In drawing the Muscles of a human body you must first have either the life or very good Patterns made either of Plaister, or drawn in Pictures, enough of which are to be found in Anatomical Books; but chiefly the Book of *Jacob Vander Gracht*, compleated with many varieties and curiosities; from whence the alterations and changes, rising and falling, extension and contraction, and other operations of the Muscles, Arteries and particular members are in imitation of the life excellently depicted.

XI. In drawing after a naked body, all the Muscles are not so plainly to be expressed as in Anatomical Figures; but that side whose parts are most apparent and significant in the performing of any action, must more or less appear according to the force of that action.

XII. In young persons the Muscles must not manifestly appear so hard, as in elder and full grown persons: the same observe in fat men, and fleshy, and such as are very delicate and beautiful. And in Women you must scarce express any at all, because that in the life they either appear not at all, or very little, unless it be particularly in some forceable action: and then you must represent them but very faintly, lest you spoil the singular Beauty of the body. The like observe in little Children.

XIII. In

XIII. In drawing of these Muscles the motion of the whole body is also to be considered: in the rising or falling of the Arms, the Muscles of the Breast more or less appear: the Hips the like according as they bend outward or inward; and the same chiefly in the Shoulders, Sides and Neck, according to the several actions of the body: all which alterations are first to be observed in the life.

XIV. The width and largeness of the Picture is also to be considered: about the Legs and Garments below it should be larger, shewing it slender above, as it were Pyramidal-wise, by discovering one shoulder, and hiding the other, which is shortned by turning the body.

XV. But sometimes the Figure is to be represented biggest in the upper parts, by representing either both the Shoulders, or both the Arms; shewing the one Leg and hiding the other, or both of them after one sort, as the discretion of the Artist shall see meet.

XVI. Neither ought this to be observed only in the whole Body, but even in every part: so that in the Leggs, when a Muscle is raised outwards on the one side; that which answers directly on the contrary side must be drawn in and hid, for so it appears in the life.

XVII. The proportion of the *Figure* ought to be multiplied by degrees, in proportion of one to two, three, four, &c. For herein the chief skill consisteth: the diameter of the biggest place between the knee and the foot, is double to the least; and the largest part of the thigh triple.

C H A P. V.

Of the Imitation of the Life.

I. **I**N order hereunto it will be necessary (having fixed a convenient time and place) to choose a good Master, with whom you may spend two days in a week at least; or else a society of about half a score or a dozen young men, who are experienced to draw after the life, by the advice and example of whom, and your own diligent observations and care, you may come not only to mend one anothers faults, but also one anothers judgements.

II. Then choose a well-shap'd man, one of large shoulders, of a fair breast, strongly muscled, full thighs, long legs, and of a proportionable height, not too tall nor too short, nor too thick nor too slender, but a person every ways of an admirable shape.

III. Let this Exemplar be made to stand in a good posture, representing some noble action of the life; letting the head turn it self to the right side if the left be shadowed; and contrariwise, making the parts of the apparent shoulder somewhat higher than that which is obscured; and the head if it looks upwards, leaning no farther backwards than that the eyes may be seen; and in the turning of it, let it move no farther than that the chin may only approach the shoulder; making also the hip on that side the shoulder is lowest, a little to stick out; and that arm foremost, where the leg is behind, and contrariwise.

IV. The same you must observe in all fourfooted Beasts; and this generally to make the limbs cross-wise to cohere together; and in the turning of it forward

ward, backward, upward, downward, sideways, ever to counterballance it by the opposition of other parts; the right knowledge of which is a great step to the Imitation of the life.

V. This done, let him, whose turn it is to begin; first schetch on the paper his own Idea's (being fixed in a convenient place and light; as in the former Chapter) wherein you must endeavour to make every part to agree with the whole; first in form; secondly in proportion, thirdly in action: after this begin again, running over your Draught, bring it to a conclusion; as we shall hereafter teach you.

VI. Observing always, that after you have schetcht your whole Figure, that you choose a part (which you most desire to finish) to perfect the same; in regard that with the rest stands in a good posture; the reason is, because time will not always easily permit to finish or compleat a whole Figure, unless it be with expert Artists: it being much better to perfect a part than to leave the whole imperfect; which as each Practitioner arrives and draws nearer to perfection; he may with so much the more boldness, security and certitude attempt the compleating of the whole.

VII. You are also to consider after what manner you would have your Figure to be seen, whether upon even ground, or from aloft; for accordingly you must make the position of your Exemplar.

VIII. Let the young Artist also at his conveniency; sometimes view the Country, and practise upon the drawing of Landskips, as much representing Nature (1. in their distance, 2. in their mutual position, 3. in visible aspect) as possible may be: by this means he will come to have a general and compleat understanding in the universal measures of all things.

IX. In drawing of the Face consider the circumference thereof, and whether it be round or long, fat or lean, great or small, so that ye be sure in the first place to take rightly the dimensions and bigness of the Face. In a fat face you must make the cheeks to swell out, and so make the Face look as if it were square. If it be neither too fat nor too lean, it will be round for the most part; but if it be a lean Face, the jaw bones will stick out, and the cheeks fall in, and the Face will be long and thin or slender.

X. Observe when you draw the outmost circumference of a Face, to take the head and all with it, otherwise you may be deceived in drawing the true bigness of a Face: and then you must judiciously consider and view all the gentle master-touches, which give the Spirit and life to a Face, and discover the Grace, affections and dispositions of the mind, wherein lies the excellency of the Art, and glory of the Artist.

XI. A smiling countenance is differenced in the corners of the mouth, when they turn up a little: A staid and sober countenance in the Eyes, when the upper Eye-lids come somewhat over the balls of the Eyes. A frowning countenance in the forehead, by the bending of the Eye-brows, and some few wrinkles between the two Eye-brows about the top of the Nose.

XII. A laughing countenance is from the universal composition of the whole Face; so also an angry countenance, which is discerned by extraordinary frowning. There are also some touches about the Eyes and Mouth, which you must diligently observe, thereby giving a kind of life and spirit to your Draught.

XIII. A graceful posture is a mighty thing to be observed in every Picture, that all things be exprest with proper Actions; to wit, in their true and natural

ral Motions, according to the life and spirit of it. In a *King*, express *Majesty*, by designing him in such a graceful Posture, as may cause the Spectators to behold him with reverence. A *Soldier* express in such a Posture, as bespeaks the greatest courage, boldness and valour. Make a *Clown* in a sordid and clownish Posture. A *Servant* or *Page*, as one waiting with the utmost diligence. And in all your draughts, make the inward affections of the mind, to be lively express in the outward actions, motions, and Gestures of the Body.

XIV. But to attain to the exquisite knowledge of these things you must diligently observe the works of the most famous Masters, and strive to imitate their examples, who of a long time had accustomed themselves to draw all varieties of Gestures and Postures; as the actions of *Wrestlers*, fighting at *Cuffs*, *Stage-players*, *Fencers*, the inticeing allurements of *Curtizans*, riding the great *Horse*, *Turnaments*, &c. wherein the motions of the *Eyes* and *Hands*, and the carriage of the whole *Body*, are exactly to be remarked, if you would in your drawings, express any thing to the life.

XV. But that this may appear the more natural, and not forced, you must observe in your Draught, a kind of *Carelesness* and *Loosness*, that the *Body* be not made stiff in any part, but that every joynt may have its proper bendings, that the intention of the *Figure* may not be lame, and the joynts as it were starcht, but that every limb may have its proper freeness and looseness, agreeable with the natural life of the *Picture*.

XVI. That every thing may thus naturally accord, you must often and diligently also observe the life. Should you draw a man turning his head over his shoulders, you must not turn or wind more than na-

ture will admit ; nor must any other action be forced beyond, or made to come short of the limits of Nature, yet it ought to be quickned to the highest pitch. As if you were to draw a Man fighting, either to strike, or avoid the stroke of his Enemy ; in Running, Wrastling, Leaping, &c. be sure you do not so much overdo nature, as to express a Posture, which cannot be imitated with his natural Body.

C H A P. VI.

Of the Imitation of Draughts.

I. **T**He Learner must, by many and often tryals, get a habit of Imitation ; which if it be to be done with the Pen, beware of scratching and making thin and lean stroaks, but rather broad, which you shall draw from above, downwards ; but according to the shades, some of the hatches must be sharp, some broad, some unequal, and some equal.

II. Hold your Pen or Pencil somewhat long, (and not so upright as when you write,) seeming as though you laid it straight forward : and if they be pastils, accustom your self to turn them in your hand ; by this means you will prevent their becoming so soon blunt, and they wearing to a point may serve without scraping the making of a whole Draught.

III. In shadowing of your Draught, you must first begin to do it faintly and smoothly, and straight against the edges of the light, so that it may look as if it had been dasht with a brush-pencil ; and then here and there overshadow it again in the darkest shades farther out, and adorn it with hatchings ; and where any
thing

thing more is required, put the same in nimbly and clearly by gentle touches, the which will add a great grace unto your work.

IV. Doessling (which is a certain besmeering of the work) is to be done with Crions of red or black Chalk, touching the Draught easily all over smoothly and evenly with the points thereof, and not with Cotton or the like put up into Quills, as some use: though that may be done in some cases, as where one work is to be brought into another.

V. If Copies be taken (chiefly upon coloured paper) to make it curious and neat, let the edges of the heightning be smoothed a little (not with cotton; but) with the like coloured paper rouled up to a sharp point at one end, and by this means you will take away the sharpness and hardness of your edges, and make them look sweet and pleasant.

VI. In performance of these things a certain kind of washing is sometimes necessary, performed with Pencils dipt in some coloured liquor, and so laid upon coloured paper; and this is to be done either through the whole work, or in a part thereof, to wit, in some principal flat shades; which may be afterwards loosely wrought over with a Pen or black Chalk, the which will look very pleasantly.

VII. This washing must be first done very weak and faint, yet smooth (without smoothing of it at the edges, except by a new stroak of your pencil moistened with your tongue; for much smoothing will spoil your work) this first washing being dry, go over again with your work, yet only those parts where there ought to be a darker shade; and afterwards again give some deeper and harder touches without smoothing, the which will very much set your work off.

VIII. Faint shadows, and things obscure, must be presented as faintly as may be, chiefly upon coloured paper, where the heightning helps you; but beware you go not too often over your shades, lest you spoil them, by making them too hard and ill-favoured.

IX. In drawing, whether it be after a Draught or the Life; first observe the thing in general, in respect of the circumferent stroaks; for them are they, which bound and contain all the parts of the whole, and without which the particular parts can never be perfectly distinguished, nor represent themselves in their being: This done, then consider in like manner the parts, and supposing the parts each to be a whole; you may come to represent the parts of parts, and by the same means to express the whole of any Draught whatsoever.

C H A P. VII.

Of Drawing the Face of a Man.

I. **I**N drawing of the Face you are first to observe its motion whether upwards, downwards, forwards, or sideways; whether it be long or round, fat or lean, great or little.

For if it be fat, the cheeks will seem to swell: if lean, the jaw-bones will stick out, and the cheeks fall in; but if neither too fat nor too lean, it will be for the most part round.

II. Touch lightly the features where the eyes, mouth, nose and chin should stand, (having first drawn the circle or oval of the Face) then make a stroak down from that place of the forehead which
is

is even with the chin, coming down where you should place the middle or tip of the nose, and middle of the mouth, which stroak must be made straight down in a full right Face, but arched or oval in an oblique Face, leaning that way towards which the Face doth turn: then cross the stroak about the middle of the eyes, either with a straight line in a right Face, or with a Curved either upwards or downwards according to the present action or posture of the Face: then make another answerable to that, where the end of the nose should come; and another for the mouth that it be not made crooked.

III. This Cross is difficult to be understood *in plano*; but upon a Face made upon a solid body, in form or shape of an Egg, the several variations of the said cross are most excellently demonstrated: and from hence may the Learner understand all the alterations of a Face, and thereby draw it all manner of ways, as sideways, upwards, downwards, forwards, backwards, &c. and that only by the motion of the said oval solid, accordingly as in the following Figures you may easily perceive.

IV. Then if the face look upwards towards Heaven, or downwards towards the Earth, let the Eyes, Nose, Mouth and Brows look accordingly with it; and now proceed to the placing of the Features.

V. In a just proportioned Face, the distances, 1. between the top of the forehead and the eye-brows; 2. between the eye-brows and the bottom of the nose, 3. between the bottom of the nose and the bottom of the chin are equal.

VI. In drawing the utmost circumference of a Face, take in the Head and all with it, lest you be deceived in drawing the true bigness.

VII. Then consider all those chief touches which give life to a face, adding grace thereto, and something discovering the disposition of the mind.

So the mouth extended and the corners a little turning up, shews a smiling countenance: the eye-brow bending, and the forehead and top of the nose between the eye-brows wrinkled, shews one frowning: the upper eye-lid coming something over the ball of the eye, shews one sober and stayed: with many other touches which give life and spirit to a face, which in good prints, by little and little, and diligent observation you will at last find out.

VIII. The distances between the eyes, is the length of one eye in a full face, but in a three-quarter or half-face, it is lessened proportionably: and exactly underneath the corners of the eyes place the nostrils.

IX. Having given touches where the eyes, nose, mouth and chin should be placed, begin to draw them more exactly, and so proceed till the Face be finished; and then make the hair, beard, shadows, and other things about it.

X. Be sure to make the shadows rightly, and be sure not to make them too dark, where they should be faint; for that can never be made light again, and so the whole Face is marr'd.

The shadows are fainter and lighter in a fair Face than in a swarthy.

XI. When you have finished the Face, give here and there some hard touches with your pen where the shadows are darkest; then come the ears and hair, wherein having drawn the out-line, draw the principal curls, or master stroaks in the hair, which will be a guide to you in the lesser curls, whose dependance are on them: always make the curls to bend exactly

accor-

according to the pattern, that they may lie loose, or carelessly, and not as if they were stiff and forced; the curls being rightly drawn, in the last place strike in the loose hairs which hang scatteringly out of the Circles.

XII. In forming the Ear, describe an oval as it were, and proceeding lightly, joyn stroak to stroak, in such manner as you see in the Figures; so that the ear may be entirely formed, without digressing from the bounds of Nature or Art.

XIII. Lastly, having practised a little by rule, and brought your hand in; in drawing of any thing, first strike the out-stroaks, principal veins and muscles lightly, and afterwards shadow them, ever following exquisite patterns and prints, which will both encrease your judgement, and bring command to your hand.

C H A P. VIII.

Of Drawing the Extreme parts.

I. **I**N drawing the Hands, draw not all the joynts, veins or other things to appear plainly, but only lightly and faintly, and strike out the bigness of the hand and the manner of its turning with faint touches, and not with hard stroaks; then that being done right, part the fingers according to the pattern with like faint stroaks; then mark that place where any of the fingers do stand out from the others, with a faint resemblance: this done, proceed to draw it more perfectly, making the bending of the joynts, the wrists and other principal things more exactly; and lastly, go over with it again, drawing every small bending or swelling of the fingers, nails, knuckles and veins, so many as do appear.

II. Learn

II. Learn by good prints the just proportions of the hands, with their equal distances, observing this rule, that according as it turns one way or another, to shorten proportionally as they appear to the eye.

For so much as it turns away from our eye, so much it loses in proportion, yea sometimes a whole finger, two or three or more is lost to our sight, which you must accordingly answer in your draught.

III. In drawing of the feet, the same rules which we even now enumerated, at the first and second Section of this Chapter, are to be understood here.

CHAP. IX.

Of Drawing the whole Body.

I. **F**irst begin with the head, and be sure to give it its just proportion, answerable to what you intend the whole body shall be; then draw the shoulders in their exact breadth; after them, the trunk of the body beginning at the arm-pits, and so drawing down to the hips on both sides, observing withal the exact breadth of the waste: lastly, draw the legs, arms and hands, exactly to your pattern.

II. But first draw with a coal, and that very lightly and faintly, drawing nothing perfect (that you may the easier mend it if it be amiss) and then afterwards finish one thing after another as curiously as you can.

III. Let the parallel sinews, muscles, veins and joynts, be placed opposite one to another in a straight line (as shoulder to shoulder, hip to hip, knee to knee, &c.) for which purpose draw straight cross lines to guide you therein; observing that which way
foever

soever the body turns or bows, these lines may answer accordingly.

IV. Let all perpendicular joynts, and parts also, be placed in a right line one under another (as they are in your pattern) for which end, draw a straight line (if the body be straight) from the throat thro' the middle of the breast and privities, to the feet, to which line draw all those particular points parallels, that the body may not appear crooked or awry.

V. In bowings and bendings of the body, let the extuberance of the outward part be just equal to the compression of the inward part; making all things of an equal proportion, that as opposite parts may be equal (as the arm to the arm, leg to leg, &c.) so every part may be proportionable to each other, (as the hand not too big for the arm, nor the arm for the body, nor the body for the legs, &c.) only with this difference, that (as the one part may appear fully to the eye, or the other may turn away either in part or in whole, or be seen side-way) it be made so much less than the other, by so much as it turns away from the sight.

VI. As you observe a just proportion in bigness, so also in length, that as every opposite part be of equal length, so that each part may not be too long one for another, but according to the proposed magnitude: And in this case that if the body be awry, or any ways hid, those parts may shorten accordingly, to what is out of sight.

VII. Observe the just distance of one thing from another, for by that means you will be more exact in your draught; and in short time, perfectly imitate your pattern or nature.

VIII. If you be to draw a labouring man, you must without any regard of the season, represent him with raised limbs, and strong Muscles swelling and standing forth, sweating and burning, especially in such as carry burthens, draw great weights, or use vehement Leaping, Walking, Jestings with Weapons, Fencing, and such like exercises.

IX. Lastly, But to such as are sleeping, you must be careful to give no such kind of Actions in their lying, as will not in probability give them leave to sleep: for being represented with their limbs or bodies supported by their own force, and not by the help of another thing, it shews the weakness and indiscretion of the Artist.

C H A P. X.

Of Drawing a naked Body.

I. **I**N drawing after the life, as there are variety of faces, so no certain Rules can be delivered for the same; yet the following precautions may be useful.

II. Draw out the head in an oval, one fourth part for the hair, one fourth part for the forehead and brows, one fourth for the nose, and the last for the mouth and chin.

III. Having drawn out the head, measure out eight times the length of the head (the head making one of the eight parts) and draw a straight line from the top of the head to the sole of the foot.

IV. One heads length from the chin is for the breast; the next eighth part reacheth to the navel, the fourth part to the privities, the fifth part to the middle of the

the thigh, the sixth part to the lower part of the knee, the seventh to the small of the leg, and the eighth part to the heel.

V. The muscles you must observe to draw exactly as they are in the life : the breadth of the shoulders, is about two measures of the head : the breadth of the hips, two measures of the face : the arms stretched out, are just the length of the whole figure, the breasts also accounted ; but without the breasts they are but six.

VI. The arms hanging straight down reach within a span of the knee : the length of the hand is the just length of the face.

VII. Observe first to draw the head exactly, and next, the shoulders in their just breadth : then draw the trunk of the Body, and the rest as at the first Section of the ninth Chapter.

VIII. Be sure to place the joynts, sinews, and muscles in their natural places, and also proportionately ; in respect of Magnitude, Similitude, and Parts : lest it seem crooked and deformed.

IX. See that every parallel joynt bend moderately, so as to answer in nature its opposite.

X. Lastly, It will be extreamly advantageous to draw very much after the life, and after good prints of Anatomy, and statues and Anatomies made of *Plaster of Paris*, which is the only way to arrive at the perfection of drawing a naked Figure well, and without which indeed, you can never expect to be a good Artist. The Picture also ought to be, quick, free, and lively ; and if you have many of them in one piece, they ought to be so ordered, as that they may not seem to be crouded, or to fall offensively, but ordering them gracefully (on the fore ground especially) so to manage the whole, that the rest of the Figures decline

cline and lessen proportionably and by degrees, both in height or magnitude and strength, according to their several distances.

C H A P. XI.

Of Shadowing a Naked Body.

I. **T**HE Shadows of the Neck, in a child or young woman, are very fine, rare and hard to be seen: In a man, the sinews and veins are expressed by shadowing of the rest of the neck, and leaving them white: the shoulder is shadowed underneath: the brawn of the arm must appear full and white, shadowed on one side.

II. The veins of the back of the hand and the knuckles are made with two or three hair stroaks with a fine touch of the pen.

III. The paps of a man are shewed by two or three stroaks given underneath, in a woman with an orbicular shade, somewhat deep; the ribs retain no shadow except you represent one lean or starved.

IV. The belly is made eminent by shadowing underneath the breast bone and the flank: The brawn of the thigh is shadowed by drawing small hair stroaks from the hip to the knee, and crossed again overthwartly.

V. The knee is to be finely shadowed underneath the joint; the shin-bone appears by shadowing one half of the leg with a single shadow.

VI. The ankle-bone appears by shadowing a little underneath (as in the knees) and the sinews thereof must seem to take beginning from the midst of the foot; and to wax bigger as they grow nearer to the toes.

VII. Lastly,

VII. Lastly, the shadows of the foot must take place according as reason and occasion requires, for which (as also in all the former precepts) the having of good prints will be no small advantage unto you

C H A P. XII.

The way and manner of Shadowing.

I. **I**F it be a surface only, it is best shadowed by drawing lines either straight or oblique, (according as the superficies is) through the better half thereof.

II. If it be in a Body, it is a double shadow, and is used when a superficies begins to forsake your sight, as in Columns and Pillars, where it is double darkned, and representeth to the eye, as it were the backside, leaving that unshadowed to the light.

III. The treble shadow is made by crossing over again the double shadow, and is used for the inward parts of things, as in clefts of the Earth, Wells, Caves, the insides of Pots, Cups and Dishes.

IV. In shadowing, let the shadow always fall one way, that is, on the same side of the Body; leaving the other to the light.

So in drawing a man, if I begin to shadow his right cheek, I must shadow the right part of his neck, arm, side, thigh, leg, &c.

V. But if the light side of the body be darkened by the opposition of some other body standing between the light and it, it must receive a contrary shadow, according as the light is obfuscated.

Ms So if three Pillars stand together, that in the midst must receive a shadow on both sides.

VI. All circular bodies must have a circular shadow (by the first Section of this Chapter) according to their form or appearance, and the orbicular shadow of the object which casteth it.

Ms VII. Let your shadow grow fainter and fainter, according to the greatness of the distance from the opacous Body shadowing.

And the reason is, because all shadows are pyramidal, in which case, space of place prevails with the light against the shadow.

VIII. Where contrary shadows concur, let the meanest and most solid body be first served; and in double and treble shadows, let the first lines be very dry for fear of blotting, before you cross them.

IX. All perfect lights receive no shadow at all; but being manifest, are only to be made apparent by that body which receives them; whose shadow must be according to the efflux of light: but the colour of the light ought to agree with the medium which receives it, whether it be Air, Crystal, Water, Amber, Glass, Transparent-wine, or the like.

X. Some Artists have used a little too much White, yet with a certain kind of Grace, although their work has been much lighter than the Pattern, in the lightest part of the Body; but then withall they made the shadow as much too much in the obscure parts, where the light fell by reflexion to set forth the decay of light in the same part of the Body, by this means the work seems to be much raised, thereby deceiving the sight. For the light which comes to the Eye in a Pyramidal form, comes with a blunter and larger angle, and so represents the object the more evidently, whence comes a wonderful *Eminency*; the
cause

cause of which is, for that there is much more shadow than needs in that part where the light decays most; so that the Visual lines failing, that part comes to the eye with a more acute angle, and therefore cannot be seen so perfectly, but seems to fly inwards, and stand farther off.

C H A P. XIII.

Of Expressing Passions in the Countenance.

I. **L**ove is expressed by a clear, fair and pleasant Countenance, without clouds, wrinkles, or unpleasant bendings: giving the forehead an ample height and breadth with majestick grace; a full eye with a fine shadow at the bottom of the eye-lid, and a little at the corner: a proportionable nose; nostrils not too wide: a clear cheek made by shadowing of it on one side: and a smiling mouth made by a thin upper lip, and shadowing the mouth-line at the corners.

II. *Fear* is expressed by making the eyes look hollow, heavy and downward, thin falln cheeks, close mouth, and staring careless hair about the ears.

III. *Envy* is best decyphered by the only hanging of the cheeks, and a pale countenance; and sometimes by grinning of the teeth.

IV. Let every Passion be represented according to the outward appearance thereof, as it is in those persons in whom it reigns; observing the rules at the sixth Section of the seventh Chapter.

V. If you design a perfection in this Art, you must endeavour to chuse out the best Actions for every purpose, in restraining the luxurious fury of Nature

by a deliberate discretion, which you ought to have in the Idea; by the benefit whereof, you will finish your design with delight and contentment, always expressing in each Member, a certain hidden resemblance of the principal motions, which affect the Eye and Soul of the Spectators, and merit the chiefest commendation.

VI. To express a passion truly, you ought to give every thing and part its proper motion, or that which best befits your intention, which is nothing else but the agreement of proportion and form, to the nature and matter of the Action or Passion intended, wherein consists the whole spirit and life of the Art, which by Artists is sometimes called the *jury*, sometimes the *Grace*, and sometimes the *excellency* of Art: For hereby you put an evident difference between the *living* and the *dead*, the *fierce* and the *gentle*, the *wise* and the *simple*, the *sad* and the *merry*; and in a word discover all the several passions and gestures which mans body is able to perform.

VII. But these things are impossible ever to be exactly done in a Picture, till you have first carefully beheld the life, that thereby you may come as near the same as possible may be; to which adding Art withal, you will meet with no motions so potent, which you will not be able Artificially to imitate: These things will be the more exactly accomplished, if you be often seeing, and continually practising what you have seen: by this means you will unawares attain to a most exact habit of doing well, and lively express all Gestures, Actions and Passions subject to natural Bodies.

VIII. The passions of the mind, are certain motions proceeding from the apprehension of some moving or powerful object: now this apprehension is
threefold,

threefold, viz. *Sensitive, Rational, and Intellectual*. From these three, there arise three principal passions in the mind, viz. *Pleasures of the senses; moral Virtues, or Vices; and a pious, Religious life, or irreligious and wicked.*

IX. From the particular passions or affections of the mind, as *Love, Hatred, Desire, Fear, Joy, Hope, Sorrow, Despair, Confidence, Boldness, Impudence, Constancy, Fortitude, Timorousness, Valour, Anger, Pleasantness, Innocency, Humility, Patience, &c* there arise so many kinds of actions; exactly to imitate which you ought to observe carefully, the motions of the Body, by which they are outwardly expressed, and so accordingly to distribute and dispose of them in your Picture, as you have observed them in nature: which if you fail in, you pervert the Order of nature and of things; run your self into confusion, and so lose the beauty of your work.

C H A P. XIV.

Of Human Proportion.

THE length of an upright body is equal to eight times the length of the face or head: The arm hanging straight down, reacheth within a span of the Knee: The length of the hand must be the length of the face: The arms extended must be the just length of the body.

Whosoever (saith Vitruvius) will proceed in his works with judgment, must needs be acquainted with the nature and force of proportion. For all designs carry with them so much the more grace and beauty, by how much more ingeniously they are proportioned: this being well understood

makes a man not only an excellent judge of ancient and modern Artists and their Workmanship, but also an admirable Inventor and performer of rare and excellent things himself. It adds Majesty and Beauty to his designs, and draws his Invention many degrees on to perfection.

II. Those parts of the body near to the Eye must be made greater and longer than those farther off, (because the eye judgeth so of them) and according to the distance from the eye, so must you vary from that which is otherwise the real true proportion of those.

It is almost impossible to do any thing in the Art of proportion commendably, without the knowledge of Arithmetick and Geometry; wherefore the knowledge of these Sciences is required as a thing most necessary: for how otherwise should any one understand the exact measure and proportion of a Body?

III. *To make a side way head.*

You must first form an equilateral Triangle, in what position you please, turning the Triangle, to make the face upon one of the three sides, be it which it will, either upwards or downwards, higher or lower, dividing that side into three equal parts: the one to serve from the lower part of the Hair to the lower part of the Forehead: the second thence to the upper part of the Nostrils, the third to the lower part of the Chin: now having framed these three lines draw a little crooked stroak with a Coal, Chalk, or Black-lead Pencil out of the right line, which may reach from the top of the Forehead unto the Eyebrow, from whence draw the slope line, bending at the end. To make the Nose (either long, short, gross, or thin, as you desire it,) let it end at the second distance where the Nostrils are to end. Then subdivide the remaining third part in the midst, where
the

the mouth shall be placed for the parting of the upper and under lips: Then frame the Chin, having respect to the perpendicular line, that it fall not out of the middle of the Chin, adjoining thereto, the under Chin, down to the Throat-pipe or Gullet, with the other two dividing lines, (the one from the top of the forehead downwards, ending in the midst of the back part of the Ear; and the other proceeding upwards from the Chin, ascending till it meets with the superiour descending line,) guide your self in describing the Ear, taking heed that its circumference stretch not out too far about the upper part of the forehead, describe a great circular line, by which form the roundness of the head, to the nape of the Neck, observing the natural proportion, and form thence downwards the rest of the Neck. Observe also that the tip of the Ear exceeds not the lower part of the Nostril.

IV. To describe the fore-right Face.

Form a perfect Oval, which divide in the midst with a line the longest way (*viz.*) a perpendicular line, which divide into three equal parts, allowing a fourth of one of the three parts for the Hair in the forehead. So have you the first third part for the Forehead and Hair; the second third part for the Nose; the third third part for the Chin. In the midst thereof must the mouth be formed, always remembering that the Eyes must be in one line; the cross line of the Nose and Mouth must always be correspondent to the cross line where the Eyes are placed; the Eyes must be the length of one Eye distant from another, and their inward corners let be exactly perpendicular over the out-side of the Nostrils. To make the Ears, they must be much foreshortned, by foreshortning: *viz.* for that the Eye doth not see their extend-

ed latitude, it must be abbreviated or drawn in ; and the length of the Ear must be from the Eye-brows to the bottom of the Nostrils ; then describe the neck with the Hair according to their natural situation.

V. *To draw a Head foreshortned.*

To do this with Frets, Grates, Squares, or Geometrical Instruments breeds only a confusion of lines, for that this face can scarcely be measured by any rule, unless the whole body be framed together : In this case therefore, make a circular draught (much like to that in the foreright face) with the aspect upwards or downwards as in the foreright head, where the transverse lines are straight, but these are drawn circularly. If the head lies upwards the traced strokes and the divisions must ascend or rise upwards ; but if it looks downwards, then they must all decline downwards ; with this caution that the Ears and Eyes fall not out of their due points, as you may see in the example.

VI. In foreshortning you must take things as they appear to the eye, and not to draw the full proportion of each part, but to shorten all, according to the rate or reason which they are obfuscated.

So if you would draw a Ship foreright, there can appear but only her forepart (for the rest being hid cannot be expressed :) the like of an horse looking full in my face, or a man lying along ; I must here of necessity foreshorten, to express the Visual property: And in this case your eye and reason must be your chief guide to give the true reason and measure of these appearances, whether in Drawing, Limning or Painting.

VII. The use of this foreshortning is to express all manner of actions in Man or Beast ; to represent many things in a little room ; to shew at one view to the eye and mind, the whole body of a Temple, with all its Arches and Pillars, whether the inside or outside, as also the sundry sides of Cities, Castles and Forts, and such like.

VIII. In

VIII. In every case you must make Nature the pattern of all Draughts, so that nothing be exprest, but what doth agree and accord with nature; and that nothing be either forced beyond nature, nor yet any thing to come short of nature.

As if in drawing the picture of a Man, be sure you draw not such a posture as is impossible for him to imitate with his natural body.

IX. Observe this rule in all foreshortnings, that you always rather imitate the visible proportions of things, than their proper and natural proportion by measure: for the Eye and understanding together, being directed by the *Perspective Art*, ought to be your guide in Drawing and Painting. And therefore in all foreshortnings there must be a proportion observed according to the judgment of the Eye, that what limbs or parts of any thing do appear, may agree in proportion, as well as in foreshortning.

X. If you make a side-face without any prescribed measure, or Triangle; you ought however to consider in your mind the natural distances and proportions, and by drawing many without a Rule or Limit, you will easily do it by the eye, and your hand will draw all things right by custom. And those first stroaks or Draughts being taken from the life, and reduced by the Pencil with colours, you will find it very correspondent and like, and as exact as you can desire it.

XI. *The Proportion of a man of ten Faces.*

From the top of the head to the soal of the foot is divided into ten equal parts. The first distance begins at the top of the Head, and reaches to the root of the Chin: The second from thence to the Throat-pit: The third thence to the parting of the breasts: The fourth thence to the Navel: The fifth thence to the Privities, which is just the middle of the

length of the Body : From thence to the foal of the foot are five parts more ; whereof two are between the Privities and the mid-knees, and three more to the foal of the foot.

XII. The first of the ten parts which is for the face, is to be divided into three equal parts : the first beginning at the upper part of the forehead, and ending upon the upper cross line of the Eye-brows : The second distance reacheth from thence to the bottom of the Nose : the third reacheth to the bottom of the Chin, which is the first and uppermost division. Now in a fore-right face be sure to place the Eyes, the length of one Eye distant from another ; and the length of one Eye, the bottom of the Nose is to be.

XIII. The breadth of this Body consists also of ten Faces, *viz.* between the extremities of both the middle fingers, when the arms are extended or spread abroad : and it is thus divided. The hand from the end of the middle finger to the Wrist, is the length of a Face, (or one of the tenth parts :) From the wrist to the elbow a face and half : From the elbow to the shoulder joint, two faces : thence to the Throat pit, one face : the hands have the proportion of one face : The Nipples must be placed at the distance of a face and half from each other, equal to the distance between the Wrist and the Elbow.

XIV. The compass of the head from the Eye-brows to the neck behind is double to the length of the whole head. The compass of the waist is the distance of three faces to the diameter thereof, and is all one with the trunk of the body. The circumference of the Body under the Arm-pits, and the space between them and the wrists, answer in a double proportion, and is agreeable to half of the Body.

XV. The

XV. *The measures which are equal between themselves.*

1. The space between the Chin and the Throat-pit, is equal to the diameter of the Neck. 2. The circumference of the Neck is equal to the distance of the Throat-pit from the Navel, 3. The diameter of the Waist is equal to the distance between the knob of the Throat, and the top of the head, and that is equal to the length of the foot. 4. The space between the Eye-lids and the Nōstrils is equal to that between the Chin and the Throat-bone. 5. The space from the Nose to the Chin is equal to that from the Throat-bone to the Throat-pit. 6. The distance from the hollow of the Eye-brow and from the Eye-brow, to the center of the Eye, is equal to the promineny of the Noftrils, and the space between the Noftrils and the end of the upper lip. 7. The distance between the top of the nail of the forefinger, and the joint next the Palm or Thumb, is equal to the distance between the said joint and the wrist. 8. The greater joint of the forefinger is the height of the forehead. 9. The space between that joint and the top of the Nail, is equal to the length of the Nose, from the tip to the Arch above the eyes, where the forehead and the Nose is divided. 10. The two first joints of the middle finger, are equal to the space between the Nose and the Chin.

XVI. 1. The first joint of the middle finger whereon the nail grows, is the distance between the Nose & the Mouth. 2. The second joint answers to the first which is equal to the space between the mouth and the chin. 3. The bigger joynt of the Thum is equal to the length of the mouth. 4. The space between the top of the Chin, and the dint under the lower lip, is equal to the lesser joint of the Thumb. 5. The least joint of each finger is double the length of the Nail. 6. The spaces between

between the middle of the Eye-brows, and the outward corner of the Eyes, is equal to the spaces between the said corners and the Ears. 7. The height of the forehead, the length of the Nose, and the distance of the Nose from the Chin are equal. 8. The breadth of the Hand is equal to the breadth of the Foot. 9. The length of the Foot is equal to the measure round about the instep. 10. Twice the breadth of the hand, is equal to the length thereof.

XVII. 1. The arches of the Eye-brows are equal to the arch of the upper lip, at the division of the mouth. 2. The breadth of the Nose is the length of the Eye, and are either of them equal to half the length of the Nose. 3. The Navel is in the middle between the Nose and the Knee. 4. from the top of the shoulder to the elbow is equal to two Faces, and from them to the wrist one and a half. 5. The breadth of the Body at the broadest-part of the shoulders is two faces and half, which is also equal to the distance between the elbow and the end of the middle finger. 6. The breadth of the body at the Privities is equal to two faces. 7. Thighs at the thickest part near the Privities, are the distance of two Faces broad. 8. The thickest part of the Leg is equal to the space between the top of the Forehead and the end of the Nose. 9. The breadth of the back at the Arm-pits is equal to two faces, and so are the hips at the buttocks. 10. The length of the middle finger is equal to the space between its last joynt and the wrist.

XVIII. *The proportions of a young man of nine Faces.*

A slender young body of nine heads, is equal to nine times the space between the top of the head and the end of the chin, that being a ninth part of the length of the whole body. And thence back again to the root of the hair a tenth or eleventh part: but
which

which way soever you draw it, this space is also divided into three equal parts, whereof the first makes the forehead, the second the nose, the third the chin. However, in a face for the eleventh part, is a tuft of hair, which is usually exprest, so that the forehead becomes lower by a third part, which rule the *Ancient Grecians* always observed.

XIX. The proportions of a man of eight Faces.

First draw a straight perpendicular line of the length you design the Figure, which divide into eight equal parts; the uppermost part of which is the length of the head, in which it behoves you to be very exact, because the whole body must answer in proportion to it. That eight part make into an Oval, which divide into four equal spaces; the first shall be for the hair, the second for the forehead, the third for the nose, the fourth from the lower part of the nose to the bottom of the chin. But drawing after the Life, you need not follow this Rule exactly, for nature is extreamly various in her Representations. Having drawn the head, there remain seven parts more from the bottom of the chin to the soal of the foot. The distance of the chin to the breasts is the length of the head. The third division reaches to the smallest part of the waste. The fourth to the Privities. The fifth to the middle part of the Thigh. The sixth to the middle part of the Knee. The seventh to the small of the Leg. The eight to the heel and sole of the Foot. In the several parts all the other proportions answer.

XX. The Proportion of a Body of seven Heads.

The length from the crown of the Head to the sole of the Foot is seven times the length of the head: this is a large Head, and all the Members and Limbs are answerable to it, *viz.* Strong, Sturdy, and Raised.

Yet

Yet the Ancient *Gracians* painted only the Goddess *Vesta* with this proportion, it being grave and Matron-like. But you may give it to any other Goddess, which has any kind of grave, or solid Resemblance, as also to the more staid and Ancient sort of Women, to *Sibylls*, Prophetesses and such like, whom to draw with a slender and delicate proportion would be a great oversight: As also to draw a Prophet with the proportions of a young man.

XXI. To make a Child of six Heads, you must divide the whole length of the Body into six parts, whereof the Head must be one. To draw a Child of five Heads, you must divide the whole length of the body into five parts, whereof the Head must be one. To figure out a Child of four Heads, you must divide the whole length of the Body into four equal parts, whereof the Head must be one.

C H A P. XV.

Of Drapery.

I. **D**raw the out-lines of the Garment lightly, and herein be careful, for the whole grace of the picture lies there; then draw the greatest folds first, and stroke those into lesser; and be sure they cross one another.

II. Sute your garments to the body and make them bend with the body, according as it stands in or out, straight or crooked, or turns one way or another: the closer the garment fits to the Body, the narrower and smaller must the folds be.

III. All your folds must consist of two lines and no more, which you may turn with the garment at pleasure; shadowing the innermost deeper, the outermost

most more light ; and if the folds be never so curiously contrived, spare not to shadow them (if they fall inward from the light) with a double or treble shadow, as the occasion requires.

IV. The greater folds must be continued through the whole garment, the lesser you may break off and shorten as you please.

V. The shades of silk and fine linnen are very thick and small, which require little folds and a light and rare shadow, commonly but double at most ; and so also fine Drapery requires more and sharper folds than course.

VI. That part of a garment which sits close to the body must not be folded at all, but only sweetly shaded, to represent the part of the body which lies under it.

VII. Observe the motion of the Wind and Air, for driving loose apparel all one way, drawing that part of the garment first, which lies highest and closest upon the body, before you draw the looser part that flies off from the body, *lest by drawing the loose part of the garment first you should be out, and so place the body crooked or awry.*

VIII. You ought also to examine the nature and disposition of light, especially as it has relation to the Sun, or any bright body ; for that colours cannot be seen but in the light : and by the help thereof they appear with a grace.

IX. Suppose *Blue* be equally dispersed through all the parts of a Garment, so that there is no more in one part than in another ; yet notwithstanding when it is illustrated by any light, it causeth one kind of brightness in that part where it striketh strongly ; another kind of lustre where it strikes more weakly ; and another in that part, where it yet shines less.

X. Now

X. Now to imitate this *Blue* ; you must take your Artificial *Blue* colour ; and temper it one way to express the natural *Blue* of the Garment : but another way to express it in the light : *viz.* You must mix so much White with your Blue, as you find light in that part of the Garment, where the light strikes : more White where it strikes with the greater force ; and less White where it strikes with less ; and still in proportion less and less, till you come to the parts where the light shines not.

XI. Where the light shines not but by *Reflection*, there you shall only mix so much shadow with your Blue, as shall be enough to express that counterfeit light, loosing it self as it were by degrees ; always providing that you make your light and shadow to answer.

XII. The Folds or Plaits ought to run out every way like Branches or Arms from the body of a Tree ; and to be so made that one plait may so rise from another, as one Branch or Bough, or one stream of Water, comes out from another, in such sort that there be no part of the Garment, wherein there appear not some of these folds.

XIII. Now these motions should be moderate, gentle, and free, without any interruption, more to be admired for their grace and facility, than for affected pains and industry : and because all sorts of cloths have their several motions, as well as Bodies ; it must needs be, that they differ between themselves, according to the things wherein they disagree.

XIV. For this cause, there must be more light in fine Cloth, as Sarcenet, Linnen, Cambrick, Cypress &c. in which the plaits are small, raised up, trembling, and as it were sweetly waving, somewhat puffed

puffed up, by extending and spreading themselves like a Sail, where the motion receiveth more strength by the Wind, they fall close upon the bare skin, as you may see in Womens Garments, upon whom by reason of their thinness, they fall close upon the parts on that side where the Wind bloweth, but are blown up on the contrary side: The same falls out in Mantles, the loose ends of Girdles and Garters; all which motions more fitly appertain unto the Apparel of Nymphs, Goddesses, &c. in respect of their lightness and airiness.

XV. Gross and dull shadows are found in stiff Cloths where the Plaits are few and gross, so that they are capable but of slow motion, and therefore they sink downwards, and can scarcely fall close to the bare skin, for that their own grossness sustains them; and these motions do mostly appear in cloth of Gold, thick Leather, course wollen Cloth &c, upon which the air can have little or no force.

XVI. Moreover the Plaits or folds must have their motions accordingly as they are managed by the wearer, as under the arm, and under the knee, by opening and stretching out the arm and leg; ever making hard, stiff, and gross folds, without weakness or pliability, in such sort, that by their appearance, the nature and quality of the Garment may be known.

XVII. But *mean motions*, which are neither too gross, nor too slight, are such as appear in the folds of Stuff, and other cloths of fine Wool; and these may easily enough be moved by the air, or become pliable to a mans limbs; and so make not only most sweet and pleasant folds, but follow the bare flesh very well, becoming moveable and nimble, and falling plially about the loins, or any other part.

XVIII. But

XVIII. But besides these, there are also other kinds of mixt motions, called turnings and crossings, which are proper unto Damasks, Taffataes, Sattins, Cloth of Gold, &c. in which *folds*, crossing and breaking one another, appear, from the various natures, qualities and conditions of the Drapery: but these things are so to be performed, that they may not favour of an over-affected imitation, without grace or order, to the scandal of the Artift and his designs.

C H A P. XVI.

Of mixed and uncertain Forms.

I. **F**OR the drawing the form of any beast, begin with your lead or coal at the forehead, drawing downward the nose, mouth, upper and nether chop, ending your line at the throat; then viewing it again where you begun, from the forehead, over the head, ears, and neck, continuing till you have given the full compass of the buttock, then mark out the legs and feet: Viewing it again, touch out the breast with the eminency thereof; Lastly, finish the tail, paws, tongue, teeth, beard, and several shadows.

II. In drawing Beasts you must be well acquainted with their shape and action, without which you shall never perform any thing excellent in that kind: and here if you draw it in an Emblem or the like, you ought to shew the Landskip of the Country natural to that beast.

III. In Birds begin also the draught at the head, (and beware of making it too big) then bring from under the throat the breast-line down to the legs, there stay and begin at the pinion to make the wing, which being

being joined to the back line will be presently finished: the eye, legs and train must be at last, letting always (in birds as in beasts) the farthest leg be shortest; their feathers (as the hair in beasts) must take their beginning at the head very small, and fall in one way backwards in five ranks, greater and greater to the conclusion.

IV. Insects, as flies, bees, wasps, grasshoppers, worms, and such like, are easie to be drawn and not hard to be laid in Colours; in doing these, it will at first be absolutely necessary to have the living pattern before your eyes.

V. To draw a flower, begin from the boss tuft or wart in the middle; as in a Rose or Marigold, with the yellow tuft, which being made, draw lines equally divided, from thence to the greatest compass or extent of your flower: you may draw them either fully open, or in the bud, and laden with dew, wet and Worms, and then you may draw rudely with the coal or lead the leaves afterwards, giving them their veins or jaggedness,

VI. To take the natural and lively shape of the leaf of any Herb or Tree:

First, take the leaf that you would have, and gently bruise the ribs and veins on the back-side of it: afterwards wet the side with linseed Oyl, and then press it hard upon a piece of clean white Paper, and so you shall have the perfect figure of the said leaf, with every vein thereof so exactly exprest, as being lively coloured it will seem to be truly natural.

C H A P. XVII.

Of Landskip.

I. **L**andskip is that which expresseth in lines the perfect vision of the earth, and all things thereupon, placed above the Horizon, as Towns, Villages, Castles, Promontories, Mountains, Rocks, Valleys, Ruins, Rivers, Woods, Forests, Chases, Trees, Houses and all other Buildings, both beautiful and ruinous.

II. First, Always express a fair Horizon, shewing the heavens cloudy or clear, more or less according to the occasion; and if you express the Sun, let it be either as rising or setting, and as it were behind or over some hill or mountain.

The Moon and Stars are seldom or never depicted, unless it be in representation of twilight; because all things are supposed to be seen by day.

III. Secondly, If you express the Sun, make his light to reflect upon all the Trees, Hills, Mountains, Rocks, or buildings; shading the contrary side, after which manner also shadow clouds, mists, and the like, making the shadows to fall all one way.

IV. Thirdly, be very careful to augment or lessen every thing proportionably to their distance from the eye, making them either bigger or lesser.

V. In expressing things at large distances, as ten, twenty or thirty miles off; where the object is hard to be discerned, as whether it be Temple, Castle, House or the like, shew no particular signs thereof, or any eminent distinction; but rather as weakly, faintly, and confusedly as the eye judgeth of it.

VI. If

VI. If Landskips be laid in Colours, the farther you go, the more you must lighten it with a thin and airy blue, to make it seem as if it were afar off, beginning at first with a dark green, so driving it by degrees into a blue, according to the distance.

VII. Make your Landskip to shoot (as it were) away, one part lower than another, making the nearest hill or place highest, and those that are farther off, to shoot away under that, that the Landskip may appear to be taken from the top of an hill.

VIII. Let every thing have its proper motion, as *in Trees* when they are shaken with the wind, making the smaller boughs yielding; the stiffer less bending: *in Clouds* that they follow the Winds: *in Rivers*, the general current, and flashing of the Waters against the boat sides: *in the Sea*, the waves and other proper agitations, the rowling of the Billows, the tumbling of Vessels up and down; Ships floating, some dipt, some half-drown'd, some standing almost an end, some hid almost with the Waves, through the uncertainty of the Surges, others endeavouring to live: In the motion of Waters falling from an high place, but especially when they fall upon Rocks or Stones, you must make it leaping up into the Air, and sprinkling all about. And lastly, *let every thing* which moveth, whether essentially or accidentally, have its proper representation.

IX. Let your work imitate the season you intend it for.

As if you intend it for a winter piece, represent felling of Wood; sliding upon the Ice; fowling by night; hunting of Bears or Foxes in the Snow; making the Trees every where naked or laden with a hoar frost; the Earth bare without greenness; Flowers or Cattle; the Air thick;

Water frozen, with Carrs passing over it, and Boys upon it, &c.

X. Lastly, let every site have its proper *parerga*, adjuncts, or additional graces, as the Farm-house, Wind-mill, Water-mill, Woods, Flocks of Sheep, Herds of Cattle, Pilgrims, Ruines of Temples, Castles and Monuments; with a thousand such other only proper to particular subjects.

C H A P. XVIII.

Of Diapering and Antique.

I. **D**iapering, is a tracing or running over your work again when you have, as it were, quite done, with damask branches, and such like.

It is used to counterfeit cloth of Gold, Silver, Damask, Velvet, Chamlet and the like, with what branch and in what fashion you please: it is derived from the Greek word διαπερῶ, transeo, to pass over, and only signifies a light passing over the same again.

II. If you Diaper upon folds, let your work be broken off accordingly, and taken as it were by the half.

For reason sheweth that the fold covereth something which cannot be seen by reason of it, which if it was drawn out at length would appear plain.

III. Let the whole work be *homogene*; that is, let the same work be continued throughout the whole garment, setting the fairest branch in the most eminent and perspicuous place, causing it to run upwards, for else your work would be ridiculous.

IV. You may either shadow the ground and leave your work white; or shadow your work and leave the ground

ground white; and as you shall please in this kind, your filling may be with small pricks, which will shew very fair.

V. Antique (*ab antes*) are buttereſſes whereon the building is ſtayed, as alſo the outwardmoſt ranges; uſed in fore-fronts of houſes, in all manner of Compartments, curious Architecture, Armourſ, Jewels; and Columns.

VI. The form of it is (only for delights ſake) a general or irregular compoſition of men, beaſts, birds, fiſhes and flowers and ſuch like, without either rule or reaſon.

VII. Laſtly, obſerve the continuation of one and the ſame work, through the whole piece, without the leaſt change or alteration.

As if it be naked Boys, playing, lying, ſitting, or riding upon Goats, Eagles, Dolphins and the like; ſtrings of Pearl, Satyrs, Tritons, Apes, Dogs, Oxen, bearing or drawing Fruits, Branches, or any wild fancy after your own invention, with a thouſand ſuch other idle toys; be ſure you obſerve the continuation.

C H A P. XIX.

To take the perfect draught of any Picture.

I. **T**AKE a ſheet of fine *Venice Paper*, wet it all over with linſeed oyl on one ſide thereof, which then wipe off as clean as you can; let the Paper dry, and lay it on any painted or printed Picture; then with a black-lead pen you may draw it over with eaſe: put this oyled paper upon a ſheet of clean white paper, and with a little pointed ſtick or feather out of a ſwallow's wing, draw over the ſtroaks which

you drew upon the oyled paper; so shall you have the exact form upon the white paper, which may be set out with colours at pleasure.

II. *Or thus*, The picture being drawn as before in the oyled paper, put it upon a sheet of white paper, and prick over the drawing with a pen: then take some small coal, powder it fine, and wrap it in a piece of some fine linnen, and bind it up therein loosely, and clap it lightly all over the pricked line by little and little, and afterwards draw it over again once or twice, with pen or pencil.

III. *Or thus*, Rub a sheet of white paper all over on one side with black-lead, or else with vermilion mixed with fresh butter; lay the coloured side upon a sheet of white paper, then lay the picture you would copy out upon the other side of the coloured paper, and with a small pointed stick or swallows quill, go over all the stroaks of your picture, and it will be exact on the white paper.

IV. *Or thus*, Lay a piece of Lanthorn horn upon the picture, then draw the stroaks of your picture with a hard nibbed pen upon the horn; and when it is dry, breath upon the horn twice or thrice, and press it hard upon white paper a little moistned.

V. *Or thus*, Take an oyled sheet (as at the first Section of this Chapter) rub one side of it with lamb-black or lake; lay it upon a sheet of fair paper with the coloured side downwards, and upon it lay the picture you would copy out, and trace it over with a swallows feather.

VI. *Or thus*, Take fine lake mixed with linseed oyl, and draw with it, instead of Ink, all the out-stroaks of any picture, and other material parts; then wet the contrary side of the picture and press it hard upon a sheet of paper, and it will leave behind it all that which you drew over.

VII. *Or*

VII. *Or thus,* Grind Printers black fine, and temper it with water, and with a pen dipt in it, draw over the out-lines and master stroaks: wet then some white paper with a sponge or the like, and press it hard thereupon; and you shall have the stroaks you drew upon the white paper.

VIII. *Or thus,* Lay the print (the back-side of it) upon a clear glass, or oyled paper, then lay a clean paper upon the print; hold it up against the light, so will you see all the stroaks which you may draw out, and shadow also if you please.

IX. *To take the shape of any Leaf, Herb, or Plant.*

Hold a whole Leaf or Sprig (as of Nettles, Plantane, &c.) in the smoak of Gum Sandrack, Rosin, a Link, or Wax-candle, till it is well blackt, which place between the leaves of a sheet of white paper, and carefully press upon the Leaf with some smooth thing; so shall you have in a moment the print on the paper, (especially the backside thereof) with the very Ramifications of the Fibres dispersed through it. This may be of good use in Travelling, when we meet with strange Plants.

X. *To take the Picture of an Herb, from an old Picture.*

Take Venice Soap, dip it in water, and rub or moisten the old Picture all over, and very well with it: then put upon it a piece of white paper, with other paper over it; and rub hard thereupon, or press them strongly together, and the old Picture will come off exactly upon the white paper.

C H A P. XX.

To extend or contract a Picture keeping the proportion.

I. **E**Ncompass your picture with one great square, which divide into as many little ones as you please: this done, according as you would have your picture either greater or less, make another square greater or less, which divide into as many equal squares which let be drawn with a black-lead plummet.

II. Take your black-lead pen, and draw the picture by little and little, passing from square unto square (by the example of the pattern) until you have gone all over with it: observing that in what part of the square the picture lies, you draw the like part in the square answerable thereto, till you have finished the whole.

III. Then draw it over with a pen, in which second drawing of it you may easily mend any fault, and shadow it at pleasure.

IV. *Lastly*, When it is throughly dry, rub it over with the crum of white-bread, and it will take off all the black-lead stroaks, so will your draught remain fair upon the paper.

C H A P. XXI.

Of Perspective in general.

OΠΤΙΚΗ in Greek, *Perspectiva* in Latin, the *Art of seeing* in English; is that by which we behold, contemplate, and draw the likeness of all magnitudes, just

just in form and manner as they appear to the Eye.

II. The matter to be seen or speculated is a magnitude: the manner of speculation is by radiations of Light, either direct, reflected or broken.

III. A magnitude is that which hath form; and it is either lineal, superficial, or solid; that is, either a complication of points, a complication of lines, or a complication of superficieses.

VI. A line is a complication of points; that is (according to *Euclid*) a length only without either breadth or thickness.

V. A superficies is a complication of lines; that is, a length having breadth without thickness.

For as the continuation of points makes a line: so the couching of lines makes a superficies: which is only the laying of points cross wise.

VI. A solid is a complication of superficieses; that is, a length and breadth, having depth or thickness.

And indeed it is nothing but the continuation of points upon a superficies either perpendicularly or bending.

VII. The Contemplation of the Object represents the matter to the mind, in the same manner as its outward appearance doth to the Eye.

And from hence comes Judgment where by the Artist is enabled to describe the same in lines; and delineate it, according to its apparent or visual proportions.

VIII. To draw or describe the Appearance in lines is the active part of this Art, whereby the *Idea* conceived in the mind (by sight and contemplation) is brought to light.

IX. A radiation is a beam of light, conveighing the likeness of the thing, to the Eyes, or sight; and the knowledge thereof to the mind or understanding.

And this radiation is twofold, either external from the external light, or intellectual from its being and power.

X. *Direct radiations* are those which consider the direct or streight beams, which pass between the eye and the object.

And this is the first kind of perspective; and is many times (alone) called the Opticks.

XI. *Reflected radiations* are those which consider the reflection of beams, and their shape upon any polish'd body, as on a Globe, Cone, Cylinder, Pyramid, or any regular solid.

And this is the second kind of Perspective; which is called the Art Catoptrica.

XII. *Broken radiations* are those which consider the breaking of beams, as they are to be seen through a glass or a Crystal cut into several plains or superficieses.

And this is the third and last kind of Perspective, which is called the Art Dioptrica.

C H A P. XXII.

Of the Active part of Perspective.

I. **T**He active part of Perspective is either *Ichnographical, Orthographical, or Scenographical.*

II. *Ichnographia*, is the description of the plain base or bottom of any body or building.

III. And it is twofold, to wit, either *Geometrical* or *Scenographical.*

IV. *Ichnographia Geometrical*, is that which gives the sight of the bottom or base of any body or building.

So a Circle is the base of a Column; and a square is the base of a Pedestal, and the like; but this Geometrical

cal Ichnography is not seen in Section, or through a Glass, unless it lies parallel to the base; and so it makes no Section with it.

V. *Ichnographia Scenographica* is the Appearance of the same base in Section, or through a Glass, erected upright on the same plain, on which the base stands.

And by this the said base is extended in length but contracted in breadth, for so it appeareth to the eye.

VI. *Orthographia*, is the vision of the foreright side of any plain; to wit, of that plain or superficies which lies equidistant to a right line, passing through the outward or convex centers of both eyes, continued to a due length.

And therefore Perspective Orthographia, is the delineation of the apparent right plain.

Scenographia is the description of a plain or other figure, that declines from the apparent or foreright plain; that is of that plain which makes Angles with the said foreright plain.

The Scenographick vision of any form, body or building is, of that side which declines from, or constitutes an Angle, with the right line, passing from the convex centers of both Eyes aforesaid: this Artists call the return of the foreright side. Now the difference between the Orthographick and Scenographick vision is this; the Orthographick shews the side of a body or building as it is beheld when the plain of the Glass is placed equidistant to that side: but the Scenographick shews the side of a body or edifice as it appears through a glass raised obliquely to the said side, or making an angle therewith.

C H A P. XXIII.

Of the Subject to be seen.

I. **T**He *Base* of any thing is the plain, flat, or floor upon which any solid body, or object is placed, or raised.

II. The *Altitude* or *height* is the perpendicular space of place, between the base and eye, or height of the visual point above the base.

III. The *Visual point*, is a point in the Horizontal line, wherein all the beams of the eyes unite.

Exempli gratia. If you look on a long straight River, the sides of which run parallel, yet by reason of the distance both sides of the River (although it be very broad) will seem to incline, touch and unite with each other in one common point or Center: and so if you look on a long straight brick-wall, the several lays of Brick, and courses of Mortar, will (at a great distance) seem to incline each to other in one common Point or Center; this point reflected on a glass raised upright on the base, is called the *visual point*.

IV. The *Horizontal line* is a line proceeding from the center of the Eye to the visual point, parallel to the Horizon of the Earth.

And this is, in men of ordinary height or stature, commonly about five foot from the ground or base.

V. The *Distance* is the space on the base between the Glass and point in the base which lies directly under the eyes.

VI. The *Section* is a plain of transparent or per-lucid matter (as of Glass) raised upright upon the plain of the base standing before you, parallel to a straight line, passing through the convex centers of both Eyes.

Without

Without the knowledge of this Section or Glass it is utterly impossible to understand perspective, or know what it means: Or be able to give a reason for the difference between the Orthographick and Scenographick figure.

VII. If the Glass is placed near the visual point, and far from the object, the figure which is seen will be very small: and the reason is, because all rays comprehending the Orthographical and Scenographical figures (though more remote from the object) fall into the visual point, as their common center.

VIII. If the visual point be more elevated (though at the same distance) the Scenographick figure or form will appear of a much larger magnitude: because the visual radiations being higher, the various perpendiculars raised on the Section or Glass, cut them in wider distances, because more remote from the Glass.

IX. If the Glass incline to the visual point, the Scenographick vision will be long-wise between the visual point and the object.

And the reason is, because the plain of the Glass heaps in more of the visual Radiations.

X. If the Glass recline from the visual point, the Scenographick figure will appear rounder, and begin to resemble the Orthographick.

XI. But if the Glass is fixed equidistant to the base, or plain the object stands upon; the Scenographick and Orthographick resemblance will be one and the same.

And the reason is, because the form of the figure is lost, or not visible in the Section.

XII. The *Visual Raies*, are those lines which proceed from the visual point, through the Glass, to any point higher or lower than the plain of the Horizon.

XIII. *Diagonal,*

XIII. *Diagonals*, or lines of distance, are such as are drawn from the point of distance to any other point higher or lower than the Horizon.

XIV. The *Object*, is that form, figure, body or edifice intended to be expressed in *Perspective* proportions.

C H A P. XXIV.

The General Practice of Perspective.

I. **L** Et every line which in the Object or Geometrical figure is straight, perpendicular, or parallel to its base, be so also in its Scenographick delineation.

II. Let the lines which in the object return at right Angles from the fore-right side, be drawn Scenographically from the Visual point.

III. Let all straight lines, which in the object return from the fore-right side, run in a Scenographick figure into the Horizontal line.

IV. Let the object you intend to delineate standing on your right hand, be placed also on the right hand of the visual point: and that on the left hand, on the left hand on the same point: and that which is just before, in the middle of it.

V. Let those lines which are (in the object) Equidistant to the returning line, be drawn in the Scenographick figure, from that point found in the Horizon.

VI. In setting off the altitude of Columns, Pedestals and the like, measure the height from the base-line upward in the front or foreright-side; and a visual ray drawn, that point in the front shall limit the altitude of
the

the Column or Pillar, all the way behind the fore-right side or Orthographick appearance, even to the visual point.

This rule you must observe in all figures, as well where there is a front or fore-right-side, as where there is none.

VII. In delineating Ovals, Circles, Arches, Crosses, Spirals and Cross-arches, or any other figure, in the roof of any room; first draw Ichnographically, and so with perpendiculars, from the most eminent points thereof, carry it up unto the Ceiling, from which several points carry on the figure.

VIII. The center in any Scenographick regular figure is found by drawing cross lines from opposite angles: for the point where the Diagonals cross is the Center.

IX. A ground plain of squares is alike, both above and below the Horizontal line; only the more it is distant above or beneath the Horizon, the squares will be so much the larger or wider.

X. In drawing a perspective figure, where many lines come together, you may for the directing of your eye, draw the Diagonals in red; the visual lines in black; the Perpendiculars in green, or other different colour from that which you intend the figure shall be of.

XI. Having considered the height, distance and position of the figure, and drawn it accordingly, with side or angle against the base; raise perpendiculars from the several Angles or designed Points in the figure, to the base, and transfer the length of each perpendicular, from the place where it touches the base, to the base on the side opposite to the point of distance; so will the Diametrals drawn to the perpendiculars in the base, by intersection with the Diagonals drawn to the several transferred distances, give the

the angles of the figure: and so lines drawn from point to point will circumscribe the Scenographick figure.

XII. If in Landskip there be any standing Waters, as Rivers, Ponds, and the like; place the Horizontal line level with the farthest sight or appearance of it.

XIII. If there be any houses or the like in the picture, consider their position, that you may find from what point in the Horizontal line to draw the fronts and sides thereof.

XIV. In describing things at a great distance, observe the proportion (both in magnitude and distance) in draught, which appears from the object to the eye.

XV. In colouring and shadowing of every thing, you must do the same in your Picture which you observe with your eye, especially in objects lying near; but according as the distance grows greater and greater, so the colours must be fainter and fainter, till at last they lose themselves in a darkish sky colour.

XVI. The *Catoptricks* are best seen in a common looking-glass or other polish'd matter; where if the glass be exactly flat, the object is exactly like its original: but if the glass be not flat, the resemblance alters from the original, and that more or less, according as the glass differs from an exact plain.

XVII. In drawing *Catoptrick* figures, the surface of the glass is to be considered, upon which you mean to have the reflexion; for which you must make a particular *Ichnographical* draught or projection; which on the glass must appear to be a plain full of squares, on which projection transfer what shall be drawn, on a plain divided into the same number of like squares: where

where though the draught may appear very confused; yet the reflection thereof on the glass will be very regular, proportional and regularly composed.

XVIII. The *Dioptrick* or broken beam may be seen in a Tube, through a Crystal, or Glass, which hath its surface cut into many others, whereby the raies of the object are broken.

For to the flat of the Crystal or Water, the raies run streight; but then they break and make an Angle, the which also by the refracted beams is made and continued on the other side of the same flat.

XIX. When these faces on a Crystal are returned towards a plain placed directly before it, they separate themselves at a good distance on the plain; because they are all directed to various far distant places of the same.

XX. But for the assigning to each of them a place on the same plain, no Geometrick rule is yet invented.

The end of the first Book.

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THE END

1800

POLYGRAPHICES
LIBER SECUNDUS.

Of ENGRAVING, ETCHING,
and LIMNING.

Shewing the Instruments belonging to the Work; the Matter of the Work, the way and manner of performing the same; together with all other Requisites and Ornaments.

CHAP. I.

Of Graving, and the Instruments thereof.

I. **G** *Graving* is an Art which teacheth how to transfer any design upon Copper, Brass, or Wood, by help of sharp pointed and cutting Instruments.

II. The chief Instruments are four, 1. Gravers, 2. An Oyl stone, 3. A Cushion, 4. A Burnisher.

III. Gravers are of three sorts, round pointed, square pointed

pointed and Lozenge pointed. *The round is best to scratch withal: the square Graver is to make the largest stroaks: the Lozenge is to make stroaks more fine and delicate; but a Graver of a middle size betwixt the square and Lozenge pointed, will make the stroaks or hatches shew with more life and vigour, according as you manage it in working.*

IV. The Oyl-stone is to whet the Gravers upon, which must be very smooth, not too soft, nor too hard, and without pin-holes.

The use is thus: *Put a few drops of Oil Olive upon the stone, and laying that side of it, which you intend shall cut the Copper, flat upon the stone, whet it very flat and even; and therefore be sure to carry your hand stedfast with an equal strength, placing the forefinger firmly, upon the opposite side of the Graver. Then turn the next side of your Graver, and whet that in like manner, that you may have a very sharp edge for an inch or more. Lastly, turning uppermost that edge which you have so whetted, and setting the end of the Graver obliquely upon the stone, whet it very flat and sloping in form of a Lozenge (with an exact and even hand) making to the edge thereof a sharp point. It is impossible that the work should be with the neatness and curiosity desired, if the Graver be not, not only very good, but also exactly and carefully whetted.*

V. The Cushion is a leather bag filled with fine sand, to lay the plate upon, on which you may turn it every way at ease.

You must turn your plate with your left hand, according as the stroaks which you grave do turn, which must be attained with diligent care and practice.

VI. The burnishing Iron is of use to rub out scratches and specks or other things which may fault your work in the plate; as also if any stroaks be graved

too deep or gross to make them appear less and fainter by rubbing them therewith.

VII. To make your Gravers.

Provide some cross-bow steel, and cause it to be beaten out into small rods, and softened, then with a good file you may shape them at pleasure: when you have done, heat them red hot, and straight dip it into Soap, and by so doing it will be very hard: where note that in dipping them into the Soap, if you turn your hand never so little awry, the Graver will be crooked. If your Graver be too hard, take a red-hot Charcoal and lay the end of your Graver upon it till it begins to wax yellowish, and then dip it into tallow (some say water) and it will be tougher.

VIII. Have by you a piece of Box or hard wood, that after you have sharpned your Graver, by striking the point of it into the said Box or hard wood, you may take off all the roughness about the points, which was caused by whetting it upon the oyl-stone.

IX. Lastly, take a file and touch the edge of the Graver therewith; if the file cut it, it is too soft, and will do no good: but if it will not touch it, it is fit for your work.

If it should break on the point, it is a sign it is tempered too hard; which oftentimes after a little use by whetting will come into a good condition.

C H A P. II.

Of Polishing the Copper Plate.

I. **T**Ake a plate of Brass or Copper of what bigness you please, and of a reasonable thickness, taking heed that it be free from fire-flaws.

II. Beat it as smooth as you can with a hammer, and then rub it as smooth as you can, with a pumice-stone void of Gravel (lest it scratch it, and so cause as much labour to get them out) and a little water.

III. Then drop a few drops of oyl Olive upon the plate, and burnish it with your burnishing Iron; and then rub it with Charcoal made of Beech wood quenched in Urine.

IV. Lastly, with a roul made of a piece of a black Felt, Castor, or Beaver, dipt in oyl Olive, rub it well for an hour, so shall your plate be exactly polished.

C H A P. III.

Of holding the Graver.

I. **I**T will be necessary to cut off that part of the knob of the handle of the Graver which is upon the same line with the edge of the Graver; thereby making that lower side next to the plate flat, that it may be no hindrance in graving.

For working upon a large plate, that part of the handle (if not cut away) will so rest upon the Copper, that it will hinder the smooth and even carriage of your hand in making your strokes, and will cause your Graver to run into your Copper deeper than it should do. This done,

II. Place the knob at the end of the handle of the Graver in the hollow of your hand, and having extended your fore-finger towards the point of the Graver, laying it a top, or opposite to the edge which should cut the plate; place your thumb on the one side of the Graver, and your other fingers on the other side, so as that you may guide the Graver flat and parallel with the plate.

III. Be

III. Be wary that your fingers interpose not between the plate and the Graver, for they will hinder you in carrying your Graver level with the plate, and cause your lines to be more deep, gross and rugged, than otherwise they would be.

C H A P. IV.

Of the way and manner of Engraving.

I. **H**AVING a Cushion filled with Sand about nine inches long and six broad, and three or four thick, and a plate well polished; lay the plate upon the Cushion, which place upon a firm Table.

II. Holding the Graver (as aforesaid) according to Art, in making straight stroaks be sure to hold your plate firm upon the Cushion, moving your hand, leaning lightly where the stroak should be fine; and harder where you would have the stroak broader.

III. But in making circular or crooked stroaks, hold your hand and Graver stedfast, your arm and elbow resting upon the Table, and move the plate against the Graver; for otherwise it is impossible to make those crooked or winding stroaks with that neatness and command that you ought to do.

IV. Learn to carry your hand with such a slight, that you may end your stroak as finely as you begin it; and if you have occasion to make one part deeper or blacker than another, do it by degrees; and that you may do it the more exactly, observe that your stroaks be not too close, nor too wide.

For your more exact observation, practise by such prints which are more loosely shadowed, lest by imitating the more dark, you should not know where to begin or end.

V. After you have graved part of your work, it will be needful to scrape it with the sharp edge of a burnisher or other Graver, carrying it along even with the plate, to take off the roughness of the stroaks; but in doing it, beware of making scratches.

VI. And that you may the better see that which is Engraven, with the piece of Felt or Castor (at the fourth Section of the second Chapter) dipt in oyl rub the places graven.

VII. Lastly, whatsoever appears to be amiss, you may rub out with the burnisher, and very exactly polish it with your piece of Felt or Castor and oyl; which done, to cleanse the plate you may boil it a little in Wine-vinegar, and rub it gently with a brush of small Brass-wire or Hogs bristles.

C H A P. V.

Of the Imitation of Copies or Prints.

I. **H**AVING a piece of Bees wax tyed up in a fine holland rag, heat the plate over the fire, till it may be hot enough to melt the wax; then rub the plate with the wax tyed up in the rag, till you see it covered all over with wax, (which let be very thin :) if it be not even, heat it again by the fire, and wipe it over gently with a feather.

II. If you would copy a printed picture, to have it print off the same way; then clap the print which you would imitate with the printed side next to the plate; and having placed it very exactly, rub the backside of the print with a burnisher, or any thing that is hard, smooth and round, which will cause it to stick to the wax upon the plate: then take off
the

the print (beginning at one corner) gently and with care, lest you tear it (which may be caused also by putting too much wax upon the plate) and it will leave upon the wax the perfect proportion in every part.

Where note, if it be an old picture, before you place it upon the wax, it will be good to track it over in every limb with a black-lead pencil.

III. But if you would have it print the contrary way, take the dust of black-lead, and rub the backside of the print all over therewith, which backside put upon the waxed plate; and with your needle or drawing point, draw all the out-lines of the design or print, all which you will find upon the wax. This done,

IV. Take a long Graver either Lozenge or round (which is better) very sharp, and with the point thereof scratch over every particular limb in the out-stroak; which done, it will not be difficult to mark out all the shadows as you Engrave, having the proportion before you.

V. Lastly, for Copies of Letters, go over every letter with black-lead, or write them with ungum'd Ink, and clap the paper over the waxed plate as before.

See Chap. 9. Sect. 20. ad 25. following.

C H A P. VI.

Of Engraving in Wood, called Carving.

I. **T**He figures that are to be carved or graven in Wood must first be drawn, traced, or pasted upon the wood; and afterwards all the other standing of the wood (except the figure) must be cut away with little narrow pointed knives made for that purpose.

This

This graving in wood is far more tedious and difficult than that in Brass or Copper; because you must cut twice or thrice to take out one stroak; and having cut it, to be careful in picking it out, lest you should break any part of the work, which would deface it.

II. For the kind of the wood let it be hard and tough: the best for this purpose is Beech and Box: let it be plained inch thick; which you may have cut into pieces according to the bigness of the figure you grave.

III. To draw the figures upon the wood.

Grind white lead very fine, and temper it with fair water; dip a cloath therein, and rub over one side of the wood and let it dry thoroughly: This keepeth the Ink (if you draw therewith) that it run not about, nor sink, and if you draw with Pastils, it makes the stroaks appear more plain and bright.

IV. Having whited the wood as before (if it is a figure you would copy,) black or red the blank side of the print or copy, and with a little stick or swallow's quill, trace or draw over the stroaks of the figure.

V. But if you paste the figure upon the wood, you must not then white it over (for then the figure will pill off) but only see the wood be well plained: then wipe over the printed side of the figure with Gum-Tragacanth dissolved in fair water, and clap it smooth upon the wood, which let dry thoroughly: then wet it a little all over, and fret off the paper gently, till you can see perfectly every stroak of the figure: dry it again, and fall to cutting or carving it.

C H A P. VII.

Of Etching, and the Materials thereof.

I. **E***tching* is an artificial Engraving of Brass or Copper-plates with *Aqua fortis*.

II. The Instruments of Etching (besides the plate) are thirteen. 1. *Hard Varnish*. 2. *Soft Varnish*. 3. *Prepared Oyl*. 4. *Aqua fortis*. 5. *Needles*. 6. *Oyl-stone*. 7. *Brush-Pencil*. 8. *Burnisher*. 9. *A Scraper*. 10. *Compasses*. 11. *Ruler*. 12. *Stift*. 13. *The Frame and Trough*.

III. *To polish the plate*.

Although in Chap. 2. of this Book, we have sufficiently taught how to polish the plate, yet nevertheless we think it convenient to subjoyn these following words. First, the plate being well planished or forged, choose the smoothest side to polish; then fix it upon a board a little declining, and rub it firmly and evenly all over with a piece of Grindstone, throwing water often on it, so long till there be no dints, flaws, or marks of the hammer: wash it clean, and with a piece of good Pumice-stone, rub it crosswise to the former, so long till there be no rough stroaks or marks of the Grindstone: wash it clean again, and rub it with a fine Hoan and water crosswise to the former, till the marks of the Pumice-stone are rubbed out: wash it again, and with a piece of Charcoal without knots (being heat red hot and quenched in Urine, the outside being pared off) rub the plate with water till all the small stroaks of the Hoan be vanished; lastly, if yet there remain any small stroaks or scratches, rub them out with the end of the burnishing Iron;

Iron; but in case they are very deep, you must make use of your Scraper, and scrape them out, and burnish them afterwards, and then lastly take a Charcoal prepared as aforesaid, and rub therewith with water, till the plate is glased, so shall the plate be fitted for work.

IV. *To make the hard Varnish for Etching.*

Take Greek or Burgundy-pitch, Colophonium or Rozin, of each five ounces, Nut-Oyl four ounces; melt the Pitch or Rozin in an earthen pot upon a gentle fire; then put in the Oyl, and let them boil for the space of half an hour: cool it a little upon a softer fire till it appear like a Glewy Syrup: cool it a little more, strain it, and being almost cold, put it into a glased pot for use. Being thus made, it will keep at least twenty years.

V. *To make the soft Varnish for Etching.*

Take Virgin-wax three ounces, Mastich in drops two ounces, Asphaltum one ounce: grind the Mastich and Asphaltum severally very fine: then in an earthen pot melt the wax and strew in the Mastich and Asphaltum, stirring all upon the fire till they be well dissolved and mixed, which will be in about half a quarter of an hour; then cooling it a little, pour it into a bason of fair water (all except the dregs) and with your hands wet (before it is cold) form it into rouls.

Or thus, *Take Virgin Wax, four ounces: Asphaltum, two ounces: Amber, Mastick, of each one ounce: the three last being in fine Powder, mix it over a gentle fire, that it may not be burnt; then taking it from the fire, put it into a pot of fair water, and make it up into Balls or Rouls, and preserve it from the dust; when you use it, take a quantity of it, and bind it up in a piece of Taffaty or Silk, and use it as hereafter we shall direct.* Or thus, for a
Red

Red Ground. Take Red Lead, grind it very well, and temper it with Varnish. Or thus, for a White Ground. Take Rosin, two ounces: Wax, one ounce: melt them together, adding Venice Ceruse finely ground, two drams. Or thus, for a Black Ground. Take Asphaltum four ounces; Bees Wax, two ounces; melt them together, being warm, lay it thinly on with a Lawn Rag. Or thus, for another Red Ground. Take Red Lead or Vermilion, grind it very well, then grind it with Linseed Oyl; lay it on very thin. Or thus, out of a Manuscript. Take Virgin Wax, four ounces: Asphaltum, Amber, Mastick, of each two ounces (but if cold weather, but one ounce of Mastick) Rosin, Shoemakers Pitch, of each an ounce: Common Varnish, half an ounce: melting the Wax in an Earthen Pot, put in the other things by degrees, which when well mixed, make it up into Balls or Rouls, and keep it from dust for use. Or thus, from Rinebrant: Take Asphaltum burnt, Mastick, Amber, of each half an ounce: Virgin Wax, an ounce: melt the Wax and mix therewith the former things in Powder, then make it into Balls or Rouls for use: when you use it heat not the plate too hot, and lay your Black Ground very thin, and the White Ground upon it.

VI. To make the prepared Oyl.

Take Oyl Olive, make it hot in an earthen pot, and put into it a sufficient quantity of tried Sheeps Suet (so much as being dropped upon a cold thing, the oyl may be a little hardened and firm) boil them together for an hour, till they be of a reddish colour, lest they should separate when you use them. This mixture is to make the fat more liquid, and not cool so fast, for the fat alone would be no sooner on the pencil, but it would grow cold; and be sure to put in more oyl in Winter than in Summer.

VII. *To make the Aqua fortis.*

Take distilled White-wine Vinegar three pints; Sal-Armoniack, Bay-salt, of each six ounces; Verdegriese four ounces. Put all together into a large well glazed earthen pot (that they may not boil over) cover the pot close, and put it on a quick fire, and let it speedily boil two or three great walms and no more; when it is ready to boil, uncover the pot, and stir it sometimes with a stick, taking heed that it boil not over: having boiled, take it from the fire, and let it cool being close covered, and when it is cold, put it into a Glass bottle with a Glass stopple: If it be too strong in Etching, weaken it with a glass or two of the same Vinegar you made it of. There is another sort of *Aqua fortis*, which is called Common, which is exhibited in *Pharmacopia Rondonensis & Deron*. But because those Books may not be in every mans hand, we will here insert it; it is thus: Take dried Vitriol two pound, Salt-peter, one pound, mix them and distil by a Retort, in open fire by degrees.

VIII. *To make the Etching Needles.*

Choose Needles of several sizes such as will break without bending, and of a fine grain; then take good round sticks of firm wood (not apt to split) about six inches long, and as thick as a large Goose-quill, at the ends of which fix your Needles so that they may stand out of the sticks about a quarter of an inch or something more. You ought to have twenty Needles at least; which you may fix in such sticks, as to have a pencil at the other end.

IX. *To whet the points of the Needles with the Oyl-stone.*

If you would have them whetted round, you must whet their points short upon the Oyl-stone (not as sowing Needles are) turning them round whilst you whet

whet them, as Turners do. If you whet them sloping, first make them blunt upon the Oyl-stone, then holding them firm and steady, whet them sloping upon one side only, till they come to a short and roundish oval.

X. The *brush pencil* is to cleanse the work, wipe off dust, and to strike the colours even over the ground or varnish, when laid upon the plate.

XI. The *burnisher* is a well hardened piece of steel somewhat roundish at the end. Its uses are what we have spoken at the sixth Section of the first Chapter, and the third Section of the second Chapter.

XII. The *scraper* is one of the Instruments fitted for clearing the plate of all deep scratches or stroaks which the burnisher will not take away; you are first to scrape them out with the scraper, (carrying your hand evenly, that you make not more work) and then afterwards to burnish upon what you have scraped.

XIII. The *Compasses* are chiefly of use to measure a distance, or strike a Circle, or some part or portion of a Circle, where you desire your work to be exact.

XIV. The *Ruler* is of service chiefly, to draw all the straight hatches or lines of your design, upon the plate; or, to mark out distances upon a straight line.

XV. The *Stift* is used to draw through all the outmost Lines or Circumferences of the Print, Pattern, or Drawing, which you Etch after.

XVI. *To make the Frame and Trough.*

The Frame is an entire board, about whose top and sides is fastened a ledge two inches broad, to keep the *Aqua fortis* from running off from the sides when

when you pour it on : the lower end of this board must be placed in the Trough, leaning sloping against a wall or some other thing, wherein you must fix several pegs of wood to rest the plate upon. The Trough is made of a firm piece of Elm or Oak set upon four legs, whose hollow is four inches wide; and so long as may best fit your use : the hollow must be something deeper in the middle, that the water running thither way fall through a hole (there made for that purpose) into an earthen pan well Leaded *The inside of this board and trough must be covered over with a thick oyl colour, to hinder the Aqua fortis from eating or rotting the board.*

C H A P. VIII.

The way and manner of using the hard Varnish.

I. **H**AVING well heat the polished plate over a Chafing dish of coals, take some of the first varnish with a little stick, and put a drop of it on the top of your finger, with which lightly touch the plate at equal distances, laying on the varnish equally, and heating the plate again as it grows cold, keeping it carefully from dust or filth; then with the ball of your thumb tap it upon the plate; still wiping your hand over all, to make it more smooth and equal.

And here beware that neither the varnish be too thick upon the plate, nor your hand sweaty.

II. Then take a great lighted candle burning clear, with a short snuff, (placing the corner of the plate against a wall) hold the varnished side downward over the candle, as close as you can, so it touch not the varnish, guiding the flame all over, till it is all

per-

perfectly black, which you must keep from dust or filth till it is dry.

III. Over a fire of Charcoals hang the varnished plate to dry with the varnish upwards, which will smoak; when the smoak abates, take away the plate, and with a pointed stick scratch near the side thereof, and if the varnish easily comes off, hang it over the fire again a little, so long till the varnish will not too easily come off; then take it from the fire and let it cool.

If the varnish should be too hard, cast cold water on the back-side of the plate to cool it, that the heat may not make it too hard and brittle. This done,

IV. Place it upon a low desk, or some such like thing, and cover that part which you do not work on, with a sheet of fine white paper, and over that a sheet of brown paper, on which may rest your hand, to keep it from the varnish.

V. If you use a ruler, lay some part of it upon the paper, that it may not rub off the varnish; and have an especial care, that no dust or filth get in between the paper and the varnish, for that will hurt it.

C H A P. IX.

The way and manner of Etching.

I. **I**N making lines or hatches, some bigger, some lesser, straight or crooked, you must use several sorts of Needles, bigger or lesser, as the work requires.

II. The great lines are made by leaning hard on the Needle; its point being short and thick, (but a round point will not cut the varnish clear :) or by making divers lines, or hatches, one very close to another, and

then by passing over them again with a thicker needle; or by making them with an indifferent large needle, and letting the *Aqua fortis* lie the longer thereon.

The best Needles for this work are such as are whet sloping with an oval, because their sides will cut that which the round ones will not.

III. If your lines or hatches ought to be of an equal thickness from end to end, lean on the needle with an equal force; leaning lightly where you would have the lines or stroaks fine or small; and more heavy where you would have the lines appear deep or large; thereby the needle may have some Impression in the Copper.

IV. If your lines or hatches be too small, pass over them again with a short round point, of such a bigness as you would have the line of, leaning strongly where you would have the line deep.

V. The manner of holding the needle with oval points (which are most proper to make large and deep stroaks) is much like that of a pen, only the flat side whetted is usually held towards the thumb: but they may be used with the face of the oval turned toward the middle finger.

VI. If you would end with a fine stroak, you ought to do that with a very fine needle,

VII. In using the oval points, hold them as upright and straight in your hand as you can, striking your stroaks firmly and freely, for that will add much to their beauty and clearness.

VIII. In Landskips, in places farthest from the sight, as also nearest the light, use a very slender point, leaning so lightly with your hand as to make a small faint stroak.

IX. In working be careful to brush off all the dust which you work off with the needles.

X. But

X. But this you are to observe, that you be able to copy any Drawing or print exactly, and to draw after good heads of Plaster, or Figures, according to your own fancy, and skilful in shadowing every thing exactly according to art: And therefore when you imitate Plaster, be sure to take the true out-lines or circumferences, and taking notice how the shadow falls, to do it very faint and soft as the design requires.

XI. Therefore it is convenient that you be able to hatch with the Pen, exactly after good Prints or Copies, and when you can perfectly do that, and draw after Plaster, then to imitate the life; but before you draw after the life, you must be very exact and true in your out-lines or circumferences.

XII. Now to take the outmost lines in any Drawing or Print, upon the ground of the plate, you must scrape a little white lead upon the back side of it; then take a feather, and rub it over every where alike, and shake off that which remains loose. This done, take the print and lay it upon the Plate, on that side the ground is, and fasten the four corners thereof to the plate with a little soft Wax: and take the *Stift*, and draw upon the Print all the outmost lines or circumferences exactly; which done, take off the print from the plate, and all the same out-lines and circumferences; which you drew upon the print with the *Stift*, will be exactly found upon the ground.

XIII. Then observe exactly how your original or pattern is shadowed, and how close the hatches joyn, how they are laid, and which way the light falls or comes in: and be sure to make the light to fall all one way; if the light falls side-ways in the Print, you must hatch the other side darkest, which is farthest from the light, and so place your lights altogether on

one side, and not confusedly, part on one side, and part on another.

XIV. Observe how close all the hatches joyn, how they incline, and which way they twist and wind; which follow as exactly as possibly you can: but before you begin to hatch or shadow, you must be sure to draw all the outmost lines with a Needle upon the ground as artificially as you can, which shadow with your Needles of several sorts, according to your Original.

XV. When you are to make a broad stroak, then break off the point of your Needle, and whet it upon the oyl stone, four square till it comes to a point: if you hatch fine strokes then you must use fine pointed Needles: if middle sized strokes, then break off the point of a middle sized Needle, and whet it as aforesaid; and so in like manner according to all the sizes: but some Artists, in making a bold or broad-stroke, hatch it first fine, and so by degrees make it broader.

Etching Land-skips.

XVI. When you etch Land-skips, hatch that which is nearest to the eye darkest, and so let it loose or decline its shadows by degrees, making that which is farthest off faintest.

XVII. The same thing you must observe in etching of the sky. For that which is nearest to the eye, must be darkest shadowed, but in general as faint and soft as may be, loosing it self by degrees as is before directed; and the nearer the sky comes to the ground, the more it must loose and be fainter: when they both meet as it were together, the sky must be quite lost.

XVIII. When you have hatched it as exactly as you can possible with your Needles, after the Print or
Drawing,

Drawing, then compare them exactly together, that you may supply any defect, or mend what is done amiss.

XIX. In etching a piece of *Perspective* after a Draught or Print, beware of Perfection at a distance, and be sure to shadow that which is nearest to the eye, perfectest and strongest, and the farther from the eye, it must decline in length, breadth, and height according to Art and Proportion; letting the shadows loose, and grow fainter and fainter, *gradatim*, till they are nearly lost.

Etching or Engraving of Letters.

XX. Screw the Copper plate (being fit for etching, by one of its corners) to a hand Vice, which hold over a Charcoal fire till it be warm: then take a piece of Virgin Wax, and rub it all over the plate, until it is covered every where alike.

XXI. This done, take a stiff Ducks-wing feather (not ruffled) and therewith drive the Wax even and smooth, every where alike, and so let it cool.

XXII. Then write the Letters or hand, which you intend to put upon the plate, on a piece of Paper with ungun'd Ink: this paper thus written, lay with the written side downwards, upon the waxed plate, and fasten the four corners with a little soft Wax; the writing being so placed that the lines may run straight.

XXIII. Then take a Dogs tooth, and rub the paper all over with it, not missing any place; which done take off the Paper from the plate, so will all the letters which you wrote on the papers be left exactly upon the Wax.

XXIV. Take now a *Stift*, and draw all the letters through the Wax upon the plate, and take a linen rag, or Pencil brush, with which cleanse the work

from the loose Wax; so will all the letters be drawn upon the Copper.

XXV. This, if you pour upon it good *Aqua-fortis*, will be etched: but if you take away all the Wax, you may better and more commendably perform it by Graving, with good Gravers well ground, and made sharp towards the points; then whetted very smooth and sharp upon a good Oyl-stone.

CHAP. X.

Of using the Aqua fortis.

I. **I**F there be any stroaks which you would not have the *Aqua fortis* eat into; or any places where the varnish is rubbed off, melt some prepared Oyl, and with a pencil, cover those places pretty thick.

II. Then take a brush pencil, or rag, and dip it in the prepared oyl, and rub the back-side of the plate all over, that the *Aqua fortis* may not hurt it, if by chance any should fall thereon.

III. Before you put the *Aqua fortis* to the plate, gently warm or dry the plate by a fire to dry up the humidity, which it might contract by reason of the Air; and to prevent the breaking up the varnish upon the first pouring the *Aqua fortis* thereon.

IV. Place the plate by the 12th. Section of the 7th. Chapter of this Book, and with the *Aqua fortis* in an earthen pot pour upon the plate, beginning at the top, so moving your hand that it may run all over the plate, which do for eight or ten times: then turn it corner-wise, and pour the *Aqua fortis* on it that way ten or twelve times; and then turn it again corner-wise the other way, pouring on the *Aqua fortis* eight

or ten times as before ; doing thus several times for the space of half a quarter of an hour or more, according to the strength of the water, and nature of the Copper.

For there must be less time allowed to hard and brittle Copper for pouring on the Aqua fortis, but more to the soft.

V. But you must have special regard to cast on the *Aqua fortis* as occasion shall require, and as the work is ; casting it on at several times, and on several places ; where you would have it very deep, often ; where less deep, fewer times : where light, less yet ; where lighter, lesser yet : and where so light as it can scarcely be seen, once or twice : wash it with water, and cover it where you would have it lighter.

VI. Having thus covered your plates as occasion requires ; for the second time, place the plate on the frame as aforesaid, and pour on it your *Aqua fortis* for a full half hour.

VII. Then wash it with water and dry it, covering the places which require lightness or faintness (that they may be proportionable to the design) then pour on the *Aqua fortis* for the last time more or less according to the nature of your work, and the deepness that it requires.

VIII. You may rub off the varnish or ground, as occasion in your work requires with a Charcoal, to see whether the water hath eaten deep enough ; by which you may judge of the space of time, that you are after to imploy in pouring on the *Aqua fortis*, in the works you will have to do, which if the shadows require much depth, or ought to be very black, the water ought to be poured on (at the least time) for an hour or better ; yet know no certain rule of time can be limited for this.

C H A P. XI.

Of Finishing the Work.

I. **A**LL the former operations being done, wash the plate with fair water ; and put it wet upon the fire, till the mixture be well melted, and then wipe it very clean on both sides with a linnen cloth, till you have cleansed it of all the mixture.

II. Take Charcoal of Willow, take off the rind of it, and putting fair water on the plate, rub it with the Charcoal, as if you were to polish it, and it will take off the varnish.

Where note, that the Coal must be free from all knots and roughness, and that no sand or filth fall upon the plate.

III. Take ordinary *Aqua fortis*, to which add two third parts of water, and with some linnen rags dipped therein rub the plate all over, so will you take away its discolouring, and recover its former beauty.

IV. Then take dry linnen rags, and wipe the plate so as to take off all the aforesaid water, and then holding it a little to the fire, put upon it a little Oyl Olive, and with a piece of an old Beaver rolled up rub the plate well all over, and lastly, wipe it well with a dry cloath.

V. Then if any places need touching with the Graver, as sometimes it happens, especially where it is to be very deep or black, perfect them with care ; which done, the plate is ready for the Rolling-Press

C H A P. XII.

The way of using the soft Varnish.

I. **T**He plate being prepared by cleansing it with a Charcoal and clean water, wash it well and dry it, then with fine white Chalk scraped and a fine rag, rub it well over, not touching it with your fingers.

II. Lay down your plate over a Chafing-dish of small-coal, yet so as the fire may have air; then take the ground or soft varnish (it being tied up in a fine rag) and rub it up and down the Copper, so as it may sufficiently cover it, (not too thin nor too thick :) then take a stiff Ducks feather, and smooth it as well, as possibly you can all one way, and then cross it till it lie very well.

But you must take heed that the plate be not too hot, for if it lie till the ground smoak, the moisture will be dried up, and that will spoil the work, and make the ground break or fly up.

III. Then grind some Ceruse or White-lead with Gum-water, so that it may be of a convenient thickness to spread on the Copper; and with a large pencil, or small brush, strike the plate cross over, twice or thrice till it is smooth; and then with a larger brush (made of Squirrels tails) gently smooth the white, and then let it lie till it is dry.

IV. Or you may black the varnish with a Candle, as we taught at the Second Section of the Eighth Chapter, and then if it be cold, warm it over the fire, till the varnish begin to melt, that the smoak may melt into the ground, so that you rub it not off with your hand.

C H A P. XIII.

The way of Etching upon the soft Varnish.

I. **T**HE way of Etching is the same with that in the hard varnish, only you must be careful not to hurt your varnish, which you may do by placing on the sides of your plate two little boards, and laying cross over them another thin one, so as that it may not touch the plate, on which you must rest your hand whilst you work.

II. Then place the plate on a Desk (if you so please) for by that means the superfluous matter will fall away of it self.

III. But if you have any design to transfer upon the plate from any Copy or Print, scrape on the backside thereof some red Chalk all over; then go over that, by scraping some soft Charcoal, till it mingle with the Chalk; and with a large stiff pencil rub it all over till it be fine and even, and so lay down the design upon the plate: with a blunt Needle draw over the out strokes: *and as you work, you need not scratch hard into the Copper, only so as you may see the Needle go through the Varnish to the Copper.*

IV. Always be sure when you leave the work, to wrap the plate up in Paper, to keep it from hurt, and corrupting in the air, which may dry the varnish: and in Winter time wrap the plate up in a piece of Woollen, as well as paper, for if the frost get to it, it will cause the Varnish to rise from the Copper in the eating.

An inconveniency also will accrew, by letting the Varnish lie too long upon the Plate before the work is finished; for three or four months will consume the moisture and so spoil all.

V. The

V. The marking of the design upon the soft varnish, is best done with Black-lead or Chalk, if the ground is white ; but with red Chalk, if the ground is black.

VI. Having Graved what you intend upon the varnish, take some fair water, a little warm, and cast it upon the Plate ; and then with a soft clean Sponge, rub upon the White-lead to moisten it all over ; and then wash the plate to take away the whiting, and dry it.

VII. Or lastly, with *Aqua fortis* mixed with fair water, wash it all over, and by this means you may take away the whiting, which then wash with common water and dry it ; and thus have you the plate prepared for the *Aqua fortis*.

C H A P. XIV.

Of using the Aqua fortis, and finishing the Work.

I. **P**Ut soft wax (red or green) round the brims of the plate, (being first drawn into a long slender roul or string) and let it be raised above the varnish about half a Barley Corns length ; so that placing the plate level, the water being poured upon the plate may by this means be retained. But that you may be sure that the *Aqua fortis* shall not run out, you must take a knife and heat it in the fire, and sear the wax round about under the plate, very close : and be sure to fasten the Wax as near to the edges of the plate, as you can conveniently. This done,

II. Take single or common *Aqua fortis* six ounces, common water two ounces ; mix them, and pour it gently upon the plate, so that it may cover it fully
all

all over ; so will the stronger hatchings be full of bubbles, while the fainter will appear clear for a while, not making any sudden operations to the view.

Note, to weaken the Aqua fortis, you may also mix it with Vinegar, or a little of that Aqua fortis which has been used formerly : for if your liquor be too strong, it will make the work very hard, and sometimes make the ground to break up. The deeper the Aqua fortis lies, the harder it will eat.

III. When you perceive the water to operate a small time, pour it off into a glazed earthen dish, keeping it to use with some other ; and throw fair water upon the plate, to wash away the *Aqua fortis*, then dry the plate : and where you would have the Cut to be faint, tender or sweet, cover it with the prepared Oyl, and then cover the plate again with *Aqua fortis* as before, leaving it on for eight or ten minutes, or longer : then put off the *Aqua fortis* as before washing and drying the plate, and covering with the prepared Oyl other places which you would not have so deep as the rest : Lastly, put on the *Aqua fortis* again, for the space of half an hour (more or less) and then pour it off, washing the plate with fair water as before.

As you would have your lines or stroaks to be deeper and deeper, so cover the sweeter or fainter parts by degrees with the prepared Oyl, that the Aqua fortis may lie the longer on the deep stroaks. Then,

IV. Take off the border of wax, and heat the plate, so that the Oyl and varnish may thoroughly melt ; which wipe away well with a linnen cloth : then rub the plate over with Oyl Olive and a piece of an old Beaver roll'd up, which done, touch it with the Graver where need is.

V. But if any thing be (at last) forgotten ; then rub the plate aforesaid with crums of bread, so well that no filth or oyl remain upon the plate.

VI. Then

VI. Then heat the Plate upon a Charcoal fire, and spread the soft varnish with a feather upon it (as before) so that the hatchings may be filled with varnish ; black it, and then touch it over again, or add what you intend.

VII. Let your hatchings be made by means of the Needles, according as the manner of the work shall require, being carefull before you put on the *Aqua fortis*, to cover the first graving on the Plate with the prepared Oyl, (lest the varnish should not have covered all over :) then cause the *Aqua fortis* to eat into the work ; and lastly cleanse the Plate as before.

VIII. Your plate being cleansed, if you perceive that the *Aqua fortis* has not eaten as deep in some places, as it should have done, you must help those defects with a Graver.

IX. To know when the *Aqua fortis* has eat deep enough after it has layen a quarter or half an hour, pour off the *Aqua fortis* from the Plate into a Glasse, wash it with a little fair water, and with a knife scrape off a little bit of the ground, where it is hatcht, and may be least prejudicial to your work ; and if you find it not deep enough, cover the bare place of your Plate with your prepared Oyl, and put the *Aqua fortis* upon it again, letting it lye till you think it deep enough ; or mix it with some new *Aqua fortis*, if you think what you have used to be too weak ; by many Tryals and Practice, you will at length come to a certainty.

X. Or you may make the Tryal upon a waste piece of Copper rudely hatcht ; pouring the *Aqua fortis* both upon the Plate, and that at one and the same time : after a sufficient season, with a knife take off a little piece of the ground from the waste piece of Copper where it is hatcht, and if it be not deep enough,

enough, cover it again with your prepared Oyl, and make a new Tryal, and so proceed on, till you find the *Aqua fortis* has eaten deep enough: observe to wash the Plate with a little fair water, before you warm it, for otherwise, the *Aqua fortis* will stain the Plate.

XI. If the ground be broken up in any place, put off the *Aqua fortis* from the Plate, wash it with fair water, and cover it with your prepared Oyl, then pour on the *Aqua fortis* again, thus will you preserve your Plate from injury.

XII. To make your *Aqua fortis* work harder or softer, you must cover those places of your Plate which you would have to be faint (after that the *Aqua fortis* has been once poured off your Plate) with your prepared Oyl, which Oyl you must use by degrees, as you would have your work fainter: this in Etching Landskips you will find necessary, for that they must lose and stand at a distance, *gradatim*.

C H A P. XV.

Of Limning, and the Materials thereof.

I. **L**imning is an Art whereby in water Colours, we strive to resemble Nature in every thing to the Life.

II. The Instruments and Materials thereof are chiefly these. 1. *Gum.* 2. *Colours.* 3. *Liquid Gold and Silver.* 4. *The Grind-stone and Muller.* 5. *Pencils.* 6. *Tables to Limn in.* 7. *Little Glasses, or Horsemuscle-shells.*

III. The

III. The *Gums* are chiefly these four, Gum-Arabick, Gum-Lake, Gum-Hedera, Gum-Amoniack.

IV. The principal *Colours* are these seven, *White, Black, Red, Green, Yellow, Blue, Brown*: out of which are made mixt or compound *Colours*.

V. The *Liquid Gold and Silver* is either natural or artificial.

The natural is that which is produced of the *Metals* themselves: the artificial is that which is formed of other colours.

VI. The *Grindstone, Muller, Pencils, Tables, and Shells, or little Glasses*, are only the necessary instruments and attendants, which belong to the practice of *Limning*.

VII. Chuse such *Pencils* as are clear and sharp pointed, not dividing into parts: of these you must have many in a readiness, a several *Pencil* at least, for every several *Colour*.

C H A P. XVI.

Of the Gums, and their Use.

I. **T**He chief of all is Gum-Arabick, that which is white, clear and brittle; the Gum-water of it is made thus:

Take Gum-Arabick, bruise it and tye it up in a fine clean linnen cloath, and put it into a convenient quantity of pure spring-water, in a glass or earthen vessel; letting the Gum remain there till it is dissolved; which done, if the water is not stiff enough, put more Gum into the cloath; but if too stiff, add more water: of which Gum-water have two sorts by you, the one strong, the other weak; of which you may make a third at pleasure.

II. But

II. But if you be where Gum-Arabick is not to be got, you may instead of that use the preparation of Sheeps leather or parchment following:

Take of the shreds of white Sheep-Skins (which are to be had plentifully at Glovers) or else of parchments, one pound; Conduit or running water two quarts, boil it to a thin gelly, then strain it whilst hot through a fine strainer, and so use it.

III. Gum-Lake, it is made of whites of Eggs beaten and strained a pint, Honey, Gum-Hedera, of each two Drams, strong wort four spoonfuls, mix them, and strain them with a piece of sponge till they run like a clear Oyl, which keep in a clean vessel till it grows hard.

This Gum will dissolve in water like Gum-Arabick, of which Gum-water is made in like manner; it is a good ordinary varnish for Pictures.

IV. Gum-Hedera, or Gum of Ivy; it is gotten out of Ivy; by cutting with an Axe a great branch thereof, climbing upon an Oak-tree, and bruising the ends of it with the head of the Axe; at a Months end, or thereabouts, you may take from it a very clear, and pure fine Gum, like Oyl.

It is good to put into Gold-size and other Colours, for these three reasons: 1. It abates the ill scent of the size: 2. It will prevent bubbles in Gold-size and other Colours: 3. Lastly, it takes away the fat and clamminess of Colours; besides which it is of use in making Pomanders.

V. Gum-Amoniacum, It is a Foreign Gum, and ought to be bought strained. Grind it very fine with juice of Garlick and a little Gum-Arabick water, so that it may not be too thick, but that you may write with it what you will.

When you use it, draw what you will with it, and let it dry, and when you gild upon it, cut your Gold or Sil-

ver to the fashion which you drew with the size or gum, then breath upon the size, and lay the Gold upon it gently taken up, which press down hard with a piece of wool; and then let it well dry; being dryed, with a fine linnen cloth strike off the loose Gold; so will what was drawn be fairly gilded if it were as fine as a hair: it is called Gold-Armoniack.

C H A P. XVII.

Of the seven Colours in General.

I. **T**HE chief *Whites* are these, Spodium, Ceruse, White-lead, Spanish-white, Egg-shells burnt, This Colour is called in Greek λευκός of λεύσσω, video, to see, because λευκοτής ἐστὶ διακειπὸν ὄψεως, whiteness (as Aristotle said) is the object of sight: in Latin *Albus*, from whence the *Alps* had their name, by reason of their continual whiteness with Snow. The *Spanish-white* is thus made. Take fine Chalk three ounces, Alum one ounce, grind them together with fair water till it be like pap; roul it up into balls, which dry leisurely: then put them into the fire till they are red hot; take them out, and let them cool: it is the best white of all, to garnish with, being ground with weak Gum-water.

II. The chief *Blacks* are these, Harts-horn burnt, Ivory burnt, Cherry-stones burnt, Lamp-black, Charcoal, Sea-coal, Verditer burnt, Mummy burnt.

Black, in Latin *Niger*, is so called from the Greek word νεκρός, which signifies dead, because putrefied and dead things are generally of that colour. Lamp-black is the smoak, of a Link, Torch, or Lamp gathered together.

III. The chief *Reds* are these, Carmine, Vermilion, Red-lead, Indian-lake, native Cinnabar, Red-Oker, Yellow-Oker burnt, Indian Red. It is called in Latin *Ruber* πᾶσι τὴν ῥοὴν ἀ corticibus vel granis mali punici; from the Rinds or Seeds of Pomegranates, as *Scaliger* saith.

IV. The chief *Greens* are these, Green Bice, Green Pink, Verdigrise, Verditer, Sappgreen, Pink mixt with Bice. This Colour is called in Latin *Viridis* from *Vires*: in Greek χλωρὸν ἀ χλοῦ, Grass or Green Herb, which is of this Colour.

V. The chief *Yellows* are these, Orpiment, Masticot deep and light, Saffron, Pink-yellow, dark and light, Oker de Luce, English-Oker, Roman-Oker, Gallstone. This Colour is called in Latin *Flavus*, *Luteus*, in Greek ξανθός, which is *Homer's* Epithete for *Melenaus*, where he calls him ξανθός Μενελάου.

VI. The chief *Blews* are Ultramarine, Indico, Smalt, Blue Bice. This Colour is called in Latin *Ceruleus*, in Greek κυάνειον ἀ κύανον, the name of a stone which yields Ultramarine.

VII. The chief *Browns* are Umber, Spanish-brown, Colens Earth, Gallstone, rust of Iron, Mummy. It is called in Latin *Fuscus*, quasi φῶς σκιαῖται, from darkning the Light, in Greek φαιός.

VIII. This is to be noted, that of the aforementioned colours, *Vermillion*, *Verdigrise*, *Orpiment* and some others are too course and gritty to be used in water Colours, unless they be purified and prepared. And *Turnsole*, *Litmose blue*, *Roset*, *Brasil*, *Logwood*, and *Saffron*, are more fit for washing Prints, than curious limning.

C H A P. XVIII.

Of Colours in Particular.

L *Ceruse*, Grind it with glair of Eggs, and it will make a very good white. It is too yellow for some purposes, coarse and gritty.

II. *White-lead*, Grind it with a weak water of Gum-lake, and let it stand three or four days, after which if you mix with it Roset and Vermilion, it makes a fair Carnation.

To make that your White-lead shall neither rust nor shine (both which are great faults in the Art of Limning) before you grind it lay it in the Sun two or three days, to exhale that greasy and salt matter that poysons and starves the colour; scraping away also the outside that is foul or dirty, which then grind with fair Water, or Lavender, or Rosemary water upon a Porphyre. When it is ground have in a readines a chalk stone, with furrows in it, into which furrows put the colour whilst it is wet, and so let it dry in the Sun, and it will be very clean and white: being through dry, let it be washt in this manner. Take of the former cleansed Lead a pound, put it into a bason of spring water, stir it a while together till the water is all very white, then let it stand, and a kind of greasie scum will arise, which blow off, and pour the white water, (being stirred a fresh, and a little settled again) into a clean Bason, leaving the grosser body at the bottom behind (not fit for our purpose:) let this water stand an hour or two, till it is quite settled, then decant the clear water, and put to the sediment fresh water, stir it as before mentioned, then let it settle half the time it did at first, and pour off the white water into another clean bason, leaving again the courser part behind; let this water settle, and de-

cant away the clear water from it : the remaining Lead dry, and then put it up into papers for your use. Thus refined five or six times, it will be most pure, and best for use. When you have occasion for it, spread a little of it about a shell with your finger, and temper it with Gum-water. In the same manner must *Ceruse* be washed. Observe also in grinding of White, that you grind it not too much, lest it prove greasy or Oily, or of a dirty colour.

III. *Spanish-white*, It is the best white of all, to garnish with, ground with Gum-water.

IV. *Lamp-black*, ground with Gum-water, it makes a good black.

V. *Vermilion*, Grind it with the glair of an Egg, and in the grinding put a little clarified honey, to make its colour bright and perfect. *Native Cinnabar* is better and a brisker colour.

VI. *Cinnabar-lake*, it makes a deep and beautiful red, or rather purple, almost like unto a Red-rose. Grind it with Gum-lake and Turnsole-water : if you will have it light, add a little *Ceruse*, and it will make it a bright Crimson ; if to Diaper, add only Turnsole water.

VII. *Red lead*, Grind it with some Saffron, and stiff Gum-lake ; for the Saffron makes it orient, and of a Marigold colour.

VIII. *Turnsole*, Lay it in a Sawcer of Vinegar, and set it over a Chafing-dish of coals ; let it boil, then take it off, and wring it into a shell, adding a little Gum-Arabick, let it stand till it is dissolved : It is good to shadow Carnation, and all Yellows.

IX. *Roset*, Grind it with Brazil-water, and it will make a deep purple : put *Ceruse* to it, and it will be lighter ; grind it with Litmose, and it will make a fair Violet.

X. *Spanish*

X. *Spanish-brown*, Grind it with Brazil-water : mingle it with Ceruse, and it makes a horse-flesh Colour. *It is not so brisk and lively as Indian Red.*

XI. *Bole-Armoniack*, It is a faint colour ; its chief use is, in making size for burnish'd gold.

XII. *Green-bice*. Order it as you do Blue bice ; when it is moist, and not through dry, you may Diaper upon it with the water of deep green.

XIII. *Verdigrise*, Grind it with juyce of Rue, and a little weak Gumwater, and you will have a most pure green : if you will Diaper with it, grind it with Lye of Rue (or else the decoction thereof) and there will be a hoary green : Diaper upon Verdigrise-green with Sap-green : also Verdigrise ground with white Tartar, and then tempered with gum-water, gives a most perfect green.

It is extreamly course unless it be purified as I have taught in my Doron, lib. 3. cap. 6. Sect. 13. §. 2. Being so prepared one ounce will be worth Ten of the Course, or that which is bought in the shops. It is done with spirit of Vinegar.

XIV. *Verditer*, grind it with a weak Gum-Arabick water: it is the faintest green that is, but is good to lay upon black, in any kind of Drapery.

XV. *Sap-green* ; lay it in sharp Vinegar all night ; put into it a little Alom to raise its colour, and you will have a good green to Diaper upon other greens. *It is a shining but a fading colour, use green Pink instead of it ; for it has neither of those faults.*

XVI. *Orpiment, Arsenicum or Auripigmentum*, grind it with a stiff water of Gum-lake, because it is the best colour of it self, it will lie upon no green, for all greens, White and Red-lead, and Ceruse stain it : wherefore you must deepen your colours so that the Orpiment may be highest, and so it may agree with all Colours. *It is of a Venomous property, and some of it is course.*

XVII. *Masticot*, Grind it with a small quantity of Saffron in gum-water, and never make it lighter than it is: it will endure to lie upon all colours and metals.

XVIII. *Saffron*, Steep it in glair: it may be ground with Vermilion.

XIX. *Pink-yellow*, If you would have it sad coloured, grind it with Saffron; if light, with Ceruse: mix it with weak gum-water, and so use it.

XX. *Oker de Luce*, grind it with pure Brazil water: it makes a passing hair-colour; and is a natural shadow for gold. *Roman Oker is the more glowing of all the Okers.*

XXI. *Umber*, It is a more sad brown colour. Grind it with gum-water, or gum-lake; and lighten it (if you please) with a little Ceruse and a blade of Saffron: to cleanse it, burn it in a Crucible, then grind it, and it will be good, and when you temper it in your shell, use a drop or two of Onion water, and it will preserve it from crackling.

XXII. *Ultramarine*, If you would have it deep, grind it with Litmose-water; but if light, with fine Ceruse and a weak Gum-Arabick water. *In grinding Ultramarine and other colours, let not your motion be too swift, but grind it gentle and slow, because the swiftness of the motion, causeth the stones to heat, which will cause your colour to starve or loose somewhat of its Lustre, especially if it be a colour of no great body, as Pink, Indico, &c.*

XXIII. *Indico*, Grind it with water of Gum-Arabick, as Ultramarine.

XXIV. *Blue-bice*, Grind it with clean water, as small as you can, then put it into a shell, and wash it thus: put as much water to it as will fill up the vessel or shell, and stir it well, let it stand an hour, and the filth and dirty water cast away; then put in more clean water,

do thus four or five times ; and at last put in Gum-Arabick water somewhat weak, that the Bice may fall to the bottom ; pour off the gum-water, and put more to it, wash it again, dry it, and mix it with weak gum-water (if you would have it rise of the same colour.) but with a stiff water of Gum-lake, if you would have a most perfect blue ; if a light blue, grind it with a little Ceruse ; but if a most deep blue, add water of Litmose.

XXV. *Smalt*, Grind it with a little fine Roset, and it will make a deep Violet : and by putting in a quantity of Ceruse, it will make a light Violet.

XXVI. *Litmose-blue*, Grind it with Ceruse : with too much Litmose it makes a deep blue ; with too much Ceruse, a light blew : grind it with the weak water of Gum Arabick.

Take fine Litmose, cut it in pieces, lay it in weak water of Gum-lake for twenty four hours, and you shall have a water of a most perfect Azure ; with which water you may Diaper and Damask upon all other blues, to make them shew more fair and beautiful.

XXVII. *Orchal*, Grind it with unslak'd Lime and Urine, it makes a pure Violet : by putting to more or less Lime, you may make the Violet light or deep as you please.

XXVIII. Mummy burnt, makes a good black : but otherwise it is ill conditioned, hard, and will not flow from the pencil, you may burn it in a Crucible well luted.

XXIX. *English Oker*, It is a yellow colour, and lies even in the shell, of it self : it is of great use being well ground.

XXX. *Pink mixed with Bice*, It is a good Green, the fairest Pink is best, well ground and tempered with blue Bice, allowing one quantity of Pink, to three

of blue Bice. To deepen this colour in Landskip or Drapery, mix with it a little *Indico* finely ground.

XXXI. *Indian Lake*. It makes a delicate Purple, grind it with a little Gum-water, and when it is ground fine, before you put it into the shell, mix a little powder of white Sugar-candy with it, which will preserve it from cracking; then may you spread it thinly with your finger about the shell.

XXXII. *Indian Red*. It makes a dark Red, because this colour is very coarse, you may use *Umber*, and a little *Lake* tempered, which is as good.

XXXIII. *Ivory black*. Grind it with a little white Sugar-candy, it will preserve it from crackling out of your shell: it makes a black.

XXXIV. *Cherry stone*. It is burnt in a Crucible (as is the former) and so ground. It is good for Drapery, and for a black Sattin. Temper it with a little white, *Indian-Lake*, and *Indico*. Heighten it with a lighter mixture, deepen it with Ivory black; this was *Hilliards* way.

XXXV. *Caput mortuum of Vitriol*, First grind it well upon a Porphyry; then carefully wash it as we have taught you to wash White-lead in *Chap. 18. Sect. 2.* a-foregoing; after grind it with a weak Gum-lake-water: it makes a deep red, or almost a purple colour.

C H A P. XIX.

Of mixt and compound Colours.

I. **M**Urry, It is a wonderful beautiful colour, composed of purple and white: it is made thus. Take *Cinnabar-lake* two ounces; *White-lead* one ounce, grind them together. See the 24. Section.

II. A

II. *A glass gray*, mingle Ceruse with a little Azure.

III. *A bay colour*, mingle Vermilion with a little Spanish brown and black.

IV. *A deep purple*, It is made of Indico, Spanish-brown and white.

It is called in Latin Purpureus, in Greek πορφυρεῖον from πορφυρα, a kind of shell-fish that yields a liquor of that colour.

V. *An Ash-colour, or Gray*, It is made by mixing White and Lamp-black ; or white with Sinaper ; Indico and black make an Ash-colour.

It is called in Latin Cæsius, and color Cinereus ; in Greek Γλαυκός and τεφρώδης.

VI. *Light Green*, It is made of Pink and Smalt ; with white to make it lighter if need require.

VII. *Saffron colour*, It is made of Saffron alone by infusion.

VIII *Flame colour* It is made of Vermilion and Orpiment, mixed deep or light at pleasure : or thus, Take Red-lead and mix it with Masticot , which heighten with white.

IX. *A Violet colour*, Indico, White and Cinnaber-lake make a good Violet. So also Ceruse and Litmole, of each equal parts.

X. *Lead colour*, It is made of White mixed with Indico.

XI. *Scarlet colour*, It is made of Red-lead, Lake, Vermilion : yet Vermilion in this case is not very useful.

XII. *To make Vermilion.*

Take Brimstone in powder four ounces, mix it with Quicksilver a pound, put it into a Crucible well luted, and upon a Charcoal-fire heat it till it is red hot ; then take it off and let it cool. You have a better way to do this in my *Pharmacopœia Londinensis lib, 3. cap. 7. Sect. 54.* to which I referr you.

XIII. *To*

XIII. *To make a bright Crimson.*

Mix tincture of Brazil with a little Ceruse ground with fair water.

XIV. *To make a sad Crimson.*

Mix the aforesaid light Crimson with a little Indico ground with fair water.

XV. *To make a pure Lake.*

Take Urine twenty pound, boil it in a Kettle and scum it with an Iron scummer till it comes to sixteen pound; to which add Gum-Lake one pound, Alom five ounces; boil all till it is well coloured, which you may try by dipping therein a piece of linnen cloth; then add sweet Alom in powder a sufficient quantity, strain it and let it stand; strain it again through a dry cloth till the liquor be clear: that which remains in the cloth or bag is the pure Lake.

XVI. *To make a Crimson-Lake.*

Its usually made of the flocks shorn off from Crimson cloth by a Lye made of Salt-peter, which extracts the colour; which precipitate, edulcorate, and dry in the Sun or a Stove.

XVII. *A pure green.*

Take white Tartar and Virdigrise, temper them with strong White-wine Vinegar, in which a little Gum-Arabick hath been dissolved.

XVIII. *A pure Violet.*

Take a little Indico and tincture of Brazil, grind them with a little Ceruse.

XIX. *A pure Purple colour.*

Take fine brimstone an ounce and an half, Quicksilver, Sal-Armoniack, Jupiter, of each one ounce; beat the Brimstone and Salt into powder, and make an Amalgama with the Quicksilver and Tin, mix all together, which put into a great glass goard; make under it an ordinary fire, and keep it in a constant heat for the space of six hours.

XX. *To*

XX. *To make a Yellow colour.*

Take the Yellow chives in white Lillies, steep them in gum-water, and it will make a perfect Yellow; the same from Saffron and Tartar tempered with gum-water.

XXI. *To make a Red colour.*

Take the roots of the lesser Bugloss, and beat them, and strain out the juyce, and mixt it with Alom-water.

XXII. *To make excellent good Greens.*

The Liver of a Lamprey makes an excellent and durable grass green: and yellow laid upon blue will change into green: so likewise the juyce of a blue Flower de Luce, mixed with gum-water, will be a perfect and durable green or blue, according as it is used.

XXIII. *To make a Purple colour.*

Take the juyce of Bilberries, and mix it with Alom and Galls, and so paint with it.

XXIV. *To make a good Murry.*

Temper Roset with a little Rose-water, in which a little gum hath been dissolved, and it will be good, but not exceeding that at the first Section of this Chapter.

XXV. *To make Azure or Blew.*

Mix the Azure with glew-water, and not with gum-water.

XXVI. *To make a Yellow Green, or Purple.*

Buck-thorn-berries gathered green and steeped in Alom-water yield a good yellow: but being through ripe and black (by the eighteenth Section of the twenty seventh Chapter of the third Book) they yield a good green: and lastly, being gathered when they are ready to drop off, which is about the middle or end of *November*, their juyce mixt with Alom water yields a good Purple colour.

C H A P. XX.

Of Colours for Drapery.

I. **F**or *Yellow Garments.* Take Masticot deepened with Brown-Oker and Red-Lead.

II. *For Scarlet.* Take Vermilion deepened with Cinnaber-lake, and heightened with touches of Masticot.

III. *For Crimson.* Lay on Lake very thin, and deepen with the same.

IV. *For Purple.* Grind Lake and Smalt together: or take Blue-bice, and mix it with Red and White-Lead.

V. *For an Orient Violet.* Grind Litmose, Blew-Smalt, and Ceruse; but in mixture let the Blew have the upper hand.

VI. *For Blem.* Take Azure deepned with Indy-Blew or Lake heightened with white.

VII. *For black Velvet.* Lay the garment first over with Ivory black, then heighten it with Cherrystone black, and a little white.

VIII. *For black Sattin.* Take Cherrystone black; then white deepened with Cherrystone black; and then lastly, Ivory black.

IX. *For a pure Green.* Take Verdigrise, bruise it, and steep it in Muscadine for twelve hours, then strain it into a shell, to which add a little Sap-green: (but put no gum thereto.)

X. *For a Carnation.* Grind Ceruse, well washed, with Red-lead; or Ceruse and Vermilion.

XI. *For Cloth of Gold.* Take brown Oker, and liquid Gold water, and heighten upon the same with small stroaks of Gold.

XII *For*

XII. *For white Sattin.* Take first fine Ceruse, which deepen with Cherrystone-black, then heighten again with Ceruse, and fine touches where the light falleth.

XIII. *For a Russet Sattin.* Take Indy-blew and Lake, first thin, and then deepned with Indy again.

XIV. *For a hair Colour.* It is made out of Masticot, Umber, Yellow Oker, Ceruse, Oker de luce, and Sea-coal.

XV. *For a Popenjay Green.* Take a perfect Green mingled with Masticot.

XVI. *For Changeable Silk.* Take water of Masticot and Red-lead; which deepen with Sap-green.

XVII. *For a light Blew.* Take Blew-bice, heightened with Ceruse or Spodium.

XVIII. *For to shadow Russet.* Take Cherrystone-black and white; lay a light Russet, then shadow it with white.

XIX. *For a Skie Colour.* Take Blew-bice and Venice Ceruse: but if you would have it dark, take some blew and white.

XX. *For a Straw Colour.* Take Masticot, then white heightened with Masticot, and deepned with Pink. Or thus, Take Red-lead deepned with Lake.

XXI. *For Yellowish.* Thin Pink deepned with Pink and Green: Orpiment burned makes a Marigold colour.

XXII. *For a Peach Colour.* Take Brazil water, Log-water and Ceruse.

XXIII. *For a light Purple.* Mingle Ceruse with Logwood water: or take Turnsole mingled with a little Lake, Smalt and Bice.

XXIV. *For a Walnut Colour.* Red-lead thinly laid, and shadowed with Spanish brown.

XXV. *For a Fire Colour.* Take Masticot, and deepen it with Masticot for the flame.

XXVI. *For a Tree.* Take Umber and white, wrought with Umber, deepned with black.

XXVII. *For the Leaves.* Take Sap-green and green Bice, heighten it with Verditure and white.

XXVIII. *For Water.* Blew and White, deepned with blew, and heightned with white.

XXIX. *For Banks.* Thin Umber, deepned with Umber and black.

XXX. *For Feathers.* Take Lake frizled with Red-lead. See Chap. 26. following.

C H A P. XXI.

Of Liquid Gold and Silver.

I. *Liquid Gold and Silver.*

L Take five or six leaves of Gold or Silver, which grind (with a stiff Gum-lake water, and a good quantity of Salt) as small as you can; then put it into a vial or glazed vessel; add so much fair water as may dissolve the stiff gum-water; then let it stand four hours, that the Gold may settle: decant the water, and put in more, till the Gold is clean washed: to the Gold put more fair water, a little Sal-Armoniack and common Salt, digesting it close for four days: then put all into a piece of thin Glovers leather (whose grain is peeled off) and hang it up, so will the Sal-Armoniack fret away, and the Gold remain behind, which keep.

Or thus, Grind fine leaf Gold with strong or thick gum water very fine; and as you grind add more thick gum-water being very fine, wash it in a great shell, as
you

you do Bice : then temper it with a little quantity of Mercury sublimate, and a little dissolved gum to bind it in the shell ; shake it, and spread the Gold about the sides thereof, that it may be all of one colour and fineness, which use with fair water, as you do other colours. The same observe in liquid Silver ; with this observation, That if your Silver, by length of time, or humidity of the air become rusty ; then cover the place with juyce of Garlick before you lay on the Silver, which will preserve it.

When you use it, temper it with glair of Eggs, and so use it with pen or pencil. Glair of Eggs is thus made. Take the whites and beat them with a spoon, till that rise all in a foam ; then let them stand all night, and by morning they will be turned into clear water, which is good glair.

II. *Argentum Musicum.*

Take one ounce of Tin, melt it, and put thereto of Tartar and Quicksilver of each one ounce, stir them well together until they be cold, then beat it in a mortar and grind it on a stone ; mix it with gum water, write therewith, and afterwards polish it.

III. *Burnished Gold or Silver.*

Take Gum-lake and dissolve it into a stiff water ; then grind a blade or two of Saffron therewith, and you shall have a fair Gold : when you have set it, being thoroughly dry, burnish it with a dogs tooth. Or thus, having writ with your pen or pencil what you please, cut the leaf Gold or Silver into pieces, according to the draught, which take up with a feather, and lay it upon the drawing, which press down with a piece of wool ; and being dry, burnish it.

IV. *Gold Armoniack.*

This is nothing but that which we have taught at the fourth Section of the sixteenth Chapter of this Book.

V. *Size for burnished Gold.*

Take Bole-Armoniack three drams, fine Chalk one dram; grind them as small as you can together with fair water, three or four times, letting it dry after every time: then take glair, and strain it as short as water, with which grind the Bole and Chalk, adding a little Gum-Hedera, and a few blades of Saffron: grind all as small as possible, and put them into an Ox horn (I judge a glass vessel better) and set it to rot in horse dung for six weeks; then take it up, and let it have air, and keep it for use.

Its use is for gilding parchments, book-covers, and leather, thus lay this size first upon the parchment, then with a feather lay the Gold or Silver upon it, which when dry burnish it.

VI. *To Diaper on Gold or Silver.*

You must Diaper on Gold with Lake and Yellow Oker: but upon Silver with Ceruse.

VII. *Aurum Musicum.*

Take fine Crystal, Orpiment, of each one ounce, beat each severally into a fine powder, then grind them together well with glair.

You may write with it, with pen or pencil, and your letter or draught will be of a good Gold colour.

VIII. *Another way to do the same.*

Take of the best English Tin, of the best Spanish Quicksilver, of each an ounce: make an Amalgama, by putting the Crude Mercury to the melted Tin, and stirring it together: then powder them well, and mix them with flowers of Sal-Armoniack, flowers of Sulphur, of each an ounce: Calcine gently till the Sulphur is consumed, so will the *Aurum* stick to the upper Crust or Scoria.

This powdered fine, and ground with glair, will with Pen or Pencil, give your Figure or Picture a Golden colour.

C H A P. XXII.

Of Preparing the Colours.

I. **C**olours; according to their natures have each a particular way of preparation: to wit, by grinding, washing or steeping.

II. The chief *Colours to be ground* are these; White-lead, Ceruse, Cinnaber-lake, Oker yellow and brown, Pink, Indico, Umber, Colens Earth, Spanish-brown, Ivory-black, Cherrystone-black, Lamp-black, Indian-Red, Indian-Lake.

III. The chief *Colours to be wash'd* are Red-lead, Masticot, Green Bice, Cedar Green, Ultramarine, Blue Bice, Smalt, Verditure.

IV. The chief *Colours to be steep'd*, are Sap-green, Saffron, Turnsole, Stone-Blue, Venice Berries.

V. *To grind Colours.*

Take the Colour you would grind, and scrape off from it all the filth, then lay it upon the stone, and with the muller bruise it a little; then put thereto a little spring water, and grind all together very well, till the colour is very fine; which done, pour it out into certain hollows or furrows cut in Chalkstone, and there let it lie till it is dry, which reserve in papers or glasses.

In grinding your Colours, put not too much water to them, upon the stone, for they ought to be ground somewhat thick, like pulp or pap: and they ought not to be left too moist, but thick and clammy. If after your Colour is dry in the shell, you can rub it off with your fingers, it must be better bound with Gum; and if there is too much Gum, it will shine, and be apt to crackle off, after it is used.

VI. *To wash Colours.*

Put the colour into a glazed vessel, and put thereto fair water plentifully, wash it well, and decant (after a while) the water; do this six or seven times; at last put the water (being just troubled) into another glazed vessel, leaving the dregs at bottom: then into this second vessel put more fair water, washing it as before, till the water (being settled) be clear, and the colour remain fine at bottom: we have taught another way at the twenty fourth Section of the eighteenth Chapter of this Book.

Before you take the colour out of the Vessel, spread it very thin, about the sides thereof, and when it is dry, some of it will fall to the bottom, which keep by it self: but the remainder which sticks to the side of the Bason, is the best of all, which with a feather strike off from the sides of the Vessel, for it will be finer than any flower.

VII. *To steep Colours.*

Take a quantity thereof, and put it into a shell, and fill the shell with fair water, to which add some fine powder of Alum, to raise the colour; let it thus steep a day and night, and you will have a good colour.

Where note, Saffron steeped in Vinegar gives a good colour; and the Venice Berries in fair water and a little Alum, or a drop or two of oyl of Vitriol makes a fair yellow. But some colours are to be boyled, as Brasil, Logwood, Turnsole, Rinds of Walnuts, Woodfoot, &c. these when boyled are to be kept close stoppt in Glasses, till you have occasion to use them.

VIII. *To temper the Colours.*

Take a little of any colour, and put it into a clean shell, and add thereto a few drops of gum-water, and with your fingers work it about the shell, then let it dry; when dry, touch it with your fingers, if any colour

colour comes off, you must add stronger gum-water: but being dry, if the colour glister or shine, it is a sign there is too much gum in it, which you may remedy by putting in fair water.

IX. To help the defects.

Some colours, as Lake, Umber, and others which are hard, will crack when they are dry; in this case, in tempering them add a little white Sugar-candy in very fine powder, which mix with the colour and fair water in the shell, till the Sugar-candy is dissolved.

X. These colours, Umber, Spanish-brown, Colen Earth, Cherry-stone, and Ivory-black, are to be burnt before they be ground or wash'd.

XI. To burn or calcine Colours.

This is done in a crucible, covering the mouth thereof with clay, and setting it in a hot fire, till you are sure it is red-hot through: which done, being cold, wash or grind it as aforesaid.

XII. To prepare shadows for Colours.

White is shaded with Black, and contrariwise: Yellow with Umber and the Okers: Vermilion with Lake: Blue-bice with Indie: Black-coal with Roset, &c.

XIII. The several temperatures for colouring and shadowing of Histories.

They are twenty in number, viz. 1. Sea-cole mixt with Lake. 2. Umber with Masticot. 3. Yellow Oker burnt with white. 4. Umber with Ultra marine. 5. Yellow with Umber. 6. Umber with Lake. 7. Verditer burnt with Red-lead and White. 8. Ultramarine with Lake. 9. Ultramarine with Red-lead. 10. Ultramarine with white. 11. Indico with white. 12. Indico and Lake with white. 13. Indico, Pink with white. 14. Indico with Oker

and white. 15. Indico with Masticot and white.
 16. Cherrystone burnt with White and Red-lead.
 17. Burnt Ivory with Lake. 18. Indico and Pink
 with the best Rust of Iron. 19. Lake and Rust of
 Iron with light Pink. 20. Rust of Iron and Lake,
for the deeper shadows.

XIV. *The several temperatures or mixtures for shadowing Heads after the Life.*

The principal mixtures are twelve in number, viz.

1. Lake with Indian Red.
2. Red-lead with Roman Oker.
3. Indian Red with Ultramarine.
4. Indian Red with Pink and Gall-stone.
5. Yellow Oker with Indico.
6. Red-lead with Pink and Indico.
7. Red-lead with Roman Oker and Indico.
8. Red-lead with Pink, Yellow Oker and Lake.
9. Indico, Lake and Roman Oker with white.
10. Indico, Pink, and Roman Oker with Indian Red.
11. Red-lead with Umber, Masticot, and Pink
12. Pink with Roman Oker.

XV. *The several mixtures for shadowing hair.*

1. White and Roman Oker *for light hair.*
2. White and Yellow Oker *for lighter hair.*
3. White with Rust and Roman Oker.
4. Light Pink with Sea-Cole and Yellow Oker.
5. Dark Pink with Rust and Roman Oker.
6. Pink with the best Rust and Gall-stone.
7. Florence Pink with Lake and burnt Ivory, *a good shadow for hair and face.*
8. White with Umber and Yellow Oker, *for light hair.*
9. The last mixture with more Umber and Cherrystone-black *for a deeper hair.*
10. Yellow Oker with Umber and Cherrystone-black *for dark hair.*
11. The last mixture with Umber and Cherrystone-black *for a darker hair.*

XVI. To do these things artificially, you may temper the natural Colours with your pencil upon your

your pallat, being first placed in order, then wet your pencil in water, and temper upon the colour you intend to make use of first in your mixture; then rub your Pencil in a clean place of your Pallat, leaving part of the colour upon the place: and in the same manner take from as many of the other as shall be directed for such and such temperatures or mixtures. Or thus, Dip your finger in water, and temper or mix your colours as you did with your Pencil, placing your colours so mixed upon your pallat in order.

C H A P. XXIII.

Of the Manual Instruments.

I. **T**He manual Instruments are four (by the second Section of the fifteenth Chapter of this Book) to wit, The *Grinding-stone* and *Muller*, *Pencils*, *Tables* to Limn on, and shells or little glasses to hold your colours.

II. The *Grinding-stone* may be of Porphyry, Serpentine or Marble, but rather a Pebble, for that is the best of all others: *Muller* only of Pebble, which keep very clean.

These may be easily got of Marblers or Stone-cutters in London.

III. Choose your pencils thus: by their fastness in the quills, and their sharp points after you have drawn or wetted them in your mouth two or three times; so that although larger, yet their points will come to as small as a hair, which then are good; but if they spread or have any extravagant hairs they are naught.

IV. *To wash your pencils.*

After using them, rub the ends of them well with Soap, then lay them a while in warm water to steep, then take them out and wash them well in other fair water.

V. *To prepare the Table.*

It must be made of pure fine paste-board, such as Cards are made of (of what thickness you please) very finely slick'd and glazed with a Dogs tooth. Take a piece of this paste-board of the bigness you intend the Picture, and a piece of the finest and whitest parchment you can get (virgin parchment) which cut of equal bigness with the paste-board; with thin, white, new made starch, paste the parchment to the paste-board, with the outside of the skin out-wardmost: lay on the starch very thin and even, being thus pasted let it dry thoroughly; then the grinding stone being clean, lay the Card thereon with the parchment side downwards, and as hard as you can, rub the other side of the paste-board with a Boars-tooth set in a stick; then let it be thorow dry, and it will be fit to work or Limn any curious thing upon.

VI. The shells holding or containing your colours, ought to be Horse-muscle shells, which may be got in *July* about Rivers sides; but the next to these are small Muscle-shells, or in stead thereof little glass vessels in the same form if possible.

VII. Your Table or Card being thus prepared, you are to lay a ground of flesh colour, before you begin your work, and that must be tempered according to the complexion of the face to be drawn: if the complexion be fair, *Temper white Red-lead and lake together.* If an hard, swarthy complexion, *Temper with your White and Red a little fine Masticot, or English Oker.* But note that your ground ought always to be fairer than the
face

face you draw: for it is an easy matter to darken a light colour, but a difficult to lighten a deep one. Your ground thus prepared, lay it upon your Card, with a Pencil full of colour, and rather thin and waterish, than thick and gross, and with two or three daubs of your great Pencil, lay it on in an instant, the nimbler it is laid on, the evener the colour will lye. Cover also rather too much of your Card, than too little, with this prime colour; somewhat more of the Card with the ground colour, than you shall use for the face.

VIII. This done, take a pretty large Pallat of Ivory or Cocuswood, and before you begin to work, temper certain little heaps of several shadows for the face, which you must mix with your finger, about the Pallat.

C H A P. XXIV.

Of Preparations for Limning.

I. **H**Ave two shells or small glasses, in either of which must be pure clean water, the one to wash the pencils in being foul; the other to temper the colours with, when there is occasion.

II. Besides the pencils you Limn with; a large, clean and dry pencil, to cleanse the work from any kind of dust, that may fall upon it, which are called Fitch-pencils.

III. A sharp Pen-knife to take off hairs that may come from your pencil, either among the colours or upon the work; or to take out spots that may fall upon the Card or Table.

IV. A paper with a hole cut therein, to lay over the Card, to keep it from dust and filth, to rest your hand upon, and to keep the soil and sweat of your hand

hand from sullyng the parchment, as also to try your pencils on before you use them.

Let the shells or small glasses, water, pencils and pen-knife lie all on the right hand.

V. Have ready a quantity of light Carnation or flesh colour temper'd up in a shell by it self with a weak gum-water; if it be a fair complexion, mix White and Red-lead together; if a brown or swarthy, add to the former, Masticot, or English Oker, or both: but be sure the flesh colour be always lighter than the complexion you would Limn; for by working on it you may bring it to its true colour.

VI. In a large Horse-muscle shell place your several shadows (for the flesh colour) in little places one distinct from another.

VII. In all shadowings have ready some white, and lay a good quantity of it by it self besides what the shadows are first mixed with; for Red for the cheeks and lips, temper Lake and Red-lead together: for blew shadows (as under the eyes and in veins) Indico or Ultramarine and white: for gray faint shadows, white, English Oker, sometimes Masticot: for deep shadows, white, English Oker, Umber: for dark shadows, Lake and Pink, which make a good fleshy shadow.

VIII. To make choice of the light.

Let it be fair and large and free from shadows of Trees or Houses, but all clear Skie-light, and let it be direct from above, and not transverse; let it be Northerly and not Southerly; and let the room be close and clean, and free from the Sun-beams.

IX. Of the manner of sitting.

Let your desk on which you work be so situate, that sitting before it, your left arm may be towards the light, that the light may strike sidling upon your work. Let the party

party that is to be Limned, be in what posture themselves will design, but not above two yards off you at most, and level with you; wherein observe their motion, if never so small, for the least motion, if not recalled, may in short time bring on you many errors: Lastly, the face being finished, let the party stand (not sit) at a farther distance (four or five yards off) to draw the posture of his clothes.

X. If you design to Limn upon Sattin; you must take Ising-glafs, and steep it four and twenty hours in water, then boyl it in spirit of Wine, until it be very clammy, which you will perceive by dipping your finger into it: then after your out-lines are drawn upon the Sattin, take an indifferent large pencil, and wash it thin over, as far as your out-lines are, which will prevent your colours from sinking or flowing.

XI. To prevent your colours from sinking into your Card, Paper, or Parchment, you design to Limn on.

Take Roch-Alom, boyl it in spring water, then take a bit of a sponge, and wet the back side of your paper, that you intend to draw on very thin, whilst the Water is hot, be as quick in wetting of it as you can; this will prevent the colours sinking.

XII. Lastly, these general things are to be observed.

1. That if your colours peel, or by reason of the greafness of your Parchment, will not lie on, you must mix with them a very little ear Wax, and it will help them.
2. That you sit not above two yards from that you draw by.
3. That the person you draw, sit in a higher seat, than you that draw.
4. That you draw not any part in the face of a Picture, exactly at first; neither finish an Eye, Nose, or Mouth, till the rest of your work come up, and be wrought together with it.
5. That when you have finished the Face, let the party stand up, to draw the Drapery by.
6. That blew Bice is never used in a Face,
7. That black

black must not by any means be used : for other shadows, your own observation must direct you, it being impossible to give a general Rule for the shadows in all Faces.

CHAP. XXV.

Of the Practice of Limning in Miniture, or Drawing of a Face in Colours.

I. **T**O begin the work.

Have all things in a readines (as before) then on the Card lay the prepared colour (answerable to the complexion presented) even and thin, free from hairs and spots, over the place where the Picture is to be : the ground thus laid, begin the work, the party being set, which must be done at three sittings : at the first sitting the face is only dead coloured, which takes up about two hours time : at the second sitting, go over the work more curiously, adding its particular graces or deformities, sweetly couching the colours, which will take up about five hours time : at the third sitting, finish the face, in which you must perfect all that is imperfect and rough, putting the deep shadows in the face, as in the eyes, eye-brows, and ears, which are the last of the work, and not to be done till the hair curtain, or backside of the Picture, and the drapery be wholly finished.

II. *The operation or work at first sitting.*

The ground for the complexion being laid, draw the out-lines of the face, which do with Lake and white mingled ; draw faintly, that if you miss in proportion or colour you may alter it : this done, add to the former colour Red-lead, for the cheeks and lips ; let it be but faint (for you cannot lighten a deep colour)

lour) and make the shadows in their due places, as in the cheek, lips, tip of the chin and ears, the eyes and roots of the hair: shadow not with a flat pencil, but by small touches (as in hatching) and so go over the face. In this dead colouring rather than to be curious, strive as near as may be to imitate nature. The red shadows being put in their due places; shadow with a faint blew, about the corners and balls of the eyes; and with a grayish blew under the eyes and about the temples, heightening the shadows as the light falls, also the harder shadows in the dark side of the face, under the eye-brows, chin and neck. Bring all the work to an equality, but add perfection to no particular part at this time; but imitate the life in likeness, roundness, boldness, posture, colour, and the like. Lastly, touch at the hair with a suitable colour in such curls, folds and form, as may either agree with the life, or grace the Picture: fill the empty places with colour, and deepen it more strongly, than in the deepest shadowed before.

III. *The operation or work at second sitting.*

As before rudely, so now you must sweeten those varieties which Nature affords, with the same colours and in the same places driving them one into another, yet so as that no lump or spot of colour, or rough edge may appear in the whole work; and this must be done with a pencil sharper than that which was used before. This done, go to the backside of the Picture which may be Landskip, or a curtain of blew or red Sattin: if of blew, temper as much Bice as will cover a Card, and let it be well mixed with gum; with a pencil draw the out-lines of the curtain; as also of the whole Picture; then with a large pencil lay thinly or airily over the whole ground, on which you mean to lay the blew; and then with a large pencil lay over
the

the same a substantial body of colour; in doing of which be nimble, keeping the colour moist, letting no part thereof be dry till the whole be covered. If the curtain be Crimson, trace it out with Indian-Lake; lay the ground with a thin colour; and lay the light with a thin and waterish colour, where they fall; and while the ground is yet wet, with a strong dark colour tempered something thick, lay the strong and hard shadows close by the other lights. Then lay the linnen with faint white, and the drapery flat of the colour you intend it. In the face, see what shadows are too light or too deep, for the curtain behind, and drapery, and reduce each to their due perfection; draw the lines of the eye-lids, and shadow the entrance into the ear, deepness of the eye-brows, and eminent marks in the face, with a very sharp pencil: lastly, go over the hair, colouring it as it appears in the life, casting over the ground some loose locks or hairs, which will make the Picture stand as it were at a distance from the curtain; *shadow the linnen with white, black, and a little yellow and blew; and deepen your black, with Ivory-black mixed with a little Lake and Indico.*

IV. *The operation or work at third sitting.*

This third work is wholly spent in giving strong touches where you see cause, in rounding, smoothing and colouring the face, which you may better see to do, now the curtain and drapery is limned, than before. And now observe whatsoever may conduce to the perfection of your work, as gesture, scars or moles, casts of the eyes, windings of the mouth, and the like; and be sure never to make your deepest shadows so deep as they appear in the life.

V. *The ground colour for hair, and how to heighten and deepen it.*

You must lay on the hair in miniture, of a Colour not so light as the lightest, nor so deep as the deepest shadow, but in a middle proportion between both, on which you may either heighten or deepen at pleasure. If you lay it on with the lightest colour, it will require a long time to work it down; and if so dark as the deepest, you cannot deepen it lower with the same colour. Moreover you must lay this Ground colour, extreamply even and smooth, and the speedier you are in doing it, the better. In doing of it, use a Goose-quil-pencil, and let the temper thereof not be too thin, because the Parchment will appear then through the ground, which it ought to cover; and rather than it should so appear, when the first laid Ground is dry, go over the same again, with the same colours.

C H A P. XXVI.

Of Limning Drapery.

I. **A** Full and substantial ground being laid all over where you intend the Drapery; as if blew, with Bice smoothly laid, deepen it with Lake and Indico; lightning it with a fine faint white, in the extreme light places, the which understand of other colours.

II. If the body you draw be in *Armour*, lay liquid Silver all over for a ground, which being well dried and burnished; shadow it with Silver, Indico, Litmose and Umber, according as the life directs you.

III. For *Gold Armour* lay liquid Gold as you did the Silver, and shadow upon it with Lake, English Oker, and a little Gold.

Or thus, Take the finest shell Gold, and lay it flat and smooth on the place you intend for Armour: when it is dry, burnish it all over with a small Weefels or Dogs tooth, set in the end of a Pencil stick, but something longer. For the shadows, temper lake, Roman Oker, and gall stone with a little shell Gold. The Heightnings being burnished, are to be left bright. In the fainter parts of the shadows, use a little shell Gold, and also in the deepest, which must be neatly and sweetly wrought into the Gold. Also take Gall stone, and temper it with shell Gold, it gives an excellent lusture to all Gold works. In the darkest and deepest shadows, mix a little black. The heightnings are only the first Gold burnished very bright. See how to do Silver Armour at Sect. 33. following.

IV. For Pearls, your ground must be Indico and white; the shadows black and pink. To express the roundness and lusture of a Pearl, shadow it with Indico, Cherry-stone black, and Pink. Or your Pearl may be laid with a white mixed with a little black, a little Indico and Mastick, but very little in comparison of the White, scarcely to the hundredth part: this being dry, give the light of the Pearl with a little Silver, somewhat more to the light than the shadowed side; then take a White allayed with Masticot, and underneath the shadowed side, give it a compassing stroke, which shews a reflection, then without that, a small shadow of Sea-cole, undermost of all; but note, your Silver must be laid round and full.

V. For Diamonds, lay a ground of liquid Silver, and deepen it with Cherry-stone-black and Ivory-black: the deeper the shadow, the fairer the Diamond.

VI. For Rubies, lay a Silver ground, which burnish to the bigness of a Ruby: then with pure Turpentine temper'd with Indian Lake, from a small wire heated in a Candle, drop upon the burnished place, fashioning

ing it as you please with your Instruments, which let lie a day or two to dry: and if it be too long in drying, add to the composition a little powder of Mastick.

VII. For *Emeraulds*, or any green stone, temper Turpentine with Verdigrise, and a little Turmeric root, first scraped, with Vinegar, drying it, grind it to fine powder and mix it.

VIII. For *Saphires*, mix or temper Ultramarine with pure Turpentine, which lay upon a ground of liquid Silver polisht: which must be the ground for all these stones.

To make liquid Gold or Silver: see the first Section of the twenty first Chapter of this Book.

IX. For *Scarlet*, Temper Carmine, and deepen it with Indian-Lake. Or thus, Temper native Cinnabar, and a little Red-lead, and shadow it with Indian-Lake.

X. For *Crimson*, Temper Cinnabar, Lake and White: deepen it with Lake.

XI. For *Carnation*, Temper Lake and White, and deepen or shadow it with Lake. For a *Peach Colour*, Temper Carmine and a little White; and deepen or shadow it with Lake.

XII. For a *Violet*, Temper fine Dutch-Bice and Lake; and deepen it with Indico. For a *Purple*, Temper Bice and Lake, and a little White; and deepen it with Lake and Indico.

XIII. For an *Orange*: Temper the best Red-Lead, and a little fine yellow Masticote; shadow it with Gall-stone and Lake. For an *Orange Tawney*: Temper Cinnabar, light Pink, and a little yellow Masticote; shadow it with Gall-stone and Lake.

XIV. For a *Sea-Green*: Temper Bice, Pink, and White: and deepen it with Green Pink. For a *French Green*: Temper light Pink one part, with Dutch-bice six parts; and deepen with green Pink.

XV. For

XV. *For Sky*: Temper Ultramarine with a little White; and deepen with Indico. *For Poppinjay*: Temper Pink, and a little Indico: and deepen it with Indico.

XVI. *For Straw*: Temper yellow Masticote with a very little Cinnabar; and deepen it with dark Pink. *For a Lyon Tawney*: Temper Red-lead and Masticote, and deepen it with Umber.

XVII. *For Ash colour*, Temper Cherry-stone and White; and deepen it with Ivory black. *For a bright Red*: Temper Indian-Lake with native Cinnabar: The *Indian-Lake* is the best of all other Lakes; but it being very scarce and dear, you may use *Florence-Lake* instead thereof.

XVIII. For all colours where Dutch-Bice is used, be sure to make choice of that which is very fine, or else you will find, that in working, it will lye very rough and uneven, and not cover well.

XIX. And be sure that when you temper any of these colours for a *Complexion* or *Garment*, you temper it on your Pallat or shell with your finger; and temper them very well to mix them altogether, to make a good mixture and not too waterish.

XX. Be sure also to preserve all your colours from dust, and before you temper either in the shell or upon your pallat, to brush off with a large Pencil or Hairs foot, or to blow it off.

XXI. In drawing of Cloths, be extream careful in habiting every one, according to the degrees and Functions of the person described; giving them also their right and proper colours.

For Example, the *Virgin Mary* is commonly represented in Purple and Azure. *John the Evangelist* in Scarlet. *John Baptist* in a Hairy Mantle. The rest of the Apostles in Green or Crimson.

XXII. There

XXII. There are two ways of working Drapery, *The first way* is that which the *Italians* use; which is done with the point of a Pencil and hatching it. Some places are touched all over alike, yet so, as when it is finished, you may perceive the Parchment appear in several places, quite through the work, which is indeed too slight a way, and ought not to be called Limning, but Washing.

XXIII. *The second way*, which is the best. First lay a good full flat ground all over where you design your Drapery, of what colour you would have it: this done, you will find it much easier to work upon; and you may either heighten or deepen it, according as your ingenuity or the Life shall direct you.

XXIV. If you would have the Drapery blew, you may take an indifferent large Pencil with Ultramarine, or instead of that, Dutch-Bice well prepared; let your Pencil be almost full of either of these colours, and therewith lay the colour even and smooth, all over the place you intend for Drapery: this you may deepen with Lake and Indico. Heighten very faintly, and fair in the extreamest lights: the like observe in all other colours of Drapery whatsoever.

XXV. Crimson Velvet, Red, Green, and Blew, may be heightned with fine shell Gold, it gives a most admirable ornament in cloth of Gold, especially if you mix some of the Gold, with the ground colour it self, which will make it much the fairer. Thus great Painters heightned all their works of Architecture and Buildings, especially in stately Rooms and Palaces.

XXVI. Be sure that you draw the out-lines of the Garment very true and faint, because the whole grace of a picture consists much in the outmost draught, and more than in the curious work within. To do this,

you must sute the Garments to the body, and make them bend and yield with it, and not strait and stiff where it bendeth. To fit the Garments rightly to the body; observe which part of the body bends in or out, that the Garments may answer to the body upon the least turning any way.

XXVII. That the Garment may turn with it, you must observe where the body should be, if it were bare, and there form the Garments in the right places, making them to bend or sit out, according to the Joynts and Limbs, and sometimes plainly to appear through the Garments, and especially where they are driven by the wind, or any other action to lye loose from the body. In this case expresse them lightly, and with a kind of transparency.

XXVIII. Begin at the upper part of the Garment, and so draw down that part of the Garment (on both sides) that lies close to the body, before you draw the loose parts, that fly off from the body: for if you draw the loose parts first, before you have finished those parts which lye close to the body or its parts, you will be presently out, and be apt to draw the body awry. Therefore some great Artists draw lightly the naked body first, and put on the Garments afterwards, by which means they can better see to place the Cloathing rightly, and to hang even upon the body.

XXIX. You must also draw the greatest folds first, and so strike the greater folds into the less; and be sure that you make not one fold to cross another. Break also some of the folds into less, and make them the narrower, where the Garments sit closer. Observe also to order your Drapery so, that the folds may fall all one way, especially in a standing Figure, though it will be otherwise sometimes in a
Figure

Figure that is drawn sitting. For the Garments of a standing Figure, are lyable to be driven by the Air and therefore must be placed one way. Be sure also not to make folds, where the Garment should sit streight and close, as the Breasts, Knees, Thighs, &c. which bear them out, and therefore in such places ought always to fit plain.

XXX. *To shadow in Linnen*: use black, white, a little yellow, and less blew: the black must be deepened with burnt Ivory, with which mix a little Lake and Indico, or Litmose-blue. For greater variety of Colours and Mixtures, *see Chap. 20.* beforegoing.

XXXI. As for Sattens and Silks, and all other shining Stuffs, they ought to have certain bright reflections, exceeding bright, with sudden light Glances, especially where the light falls brightest; And so by how much the Garment falls the more inward from the light, by so much the Reflexions will be the less bright. The like is seen in Armour, Brass-Pots and Kettles, or any Glistering Metal, where you see a sudden brightness in the middle or Center of the light, from the shining quality and disposition of those things.

XXXII. *Chased, Embossed or shining Armour.* The lighter places of it must be sparkling, which you may express by raising the high and round places, with a Temper of Gall-stone, and Roman Oker, by touching with your pencil full of the Colour of it, over and over, in one and the same place, till the Touches be raised above the other work. Then cover over the raised work, with the finest shell Gold, (that is made at *Antwerp*) and burnish it with a Weefels Tooth; and the like if it be Silver Embossed.

XXXIII. *Silver Armour*. Take shell Silver, and lay it on, as you did the Gold (at Sect. 3. above,) and burnish it also when it is dry, as you did the Gold. For the shadows, temper Lake and Indico, with a very little Umber: work all the shadows down even and smooth, according to what you observe in the Life. The heightnings are to be left (the Silver being brightly burnished) as in the Gold. The thinner part of the shadows, being part of the depth of the shadows, must be tempered with a little shell Silver, and sweetly and neatly wrought into the Silver, being laid very flat and even as before mentioned. Cherrystone burnt, Dark Pink, and Rust of Iron, are a very good shadow for Embossed Silver Armour: so also is Ivory Black mixt with Dark Pink.

CHAP. XXVII.

Of Limning Landskip.

ALL the variable expressions of *Landskip* are innumerable, they being as many as there are men and fancies; the general rules follow.

I. Always begin with the Sky, Sun-beams or lightest parts first; next the yellowish beams (which make of Masticot and white) next the blewness of the Sky, (which make of Ultramarine or Smalt only:) for purple Clouds, only mix Lake and white.

II. At first working, dead Colour all the Piece over, leave no part of the ground uncovered, but lay the Colours smooth all over.

III Work the Sky downwards, towards the Horizon fainter and fainter, as it draws nearer and nearer.

rer the earth, except in tempestuous Skies: the tops of mountains far remote, work so faint that they may appear as lost in the Air.

IV. Let places low, and near the ground be of the colour of the earth, of a dark yellowish, or brown, or green; the next lighter green; and so successively as they lose in distance, let them abate in colour.

V. Make nothing which you see at a distance perfect, by expressing any particular sign which it hath, but express it in colours, as weakly and faintly as the eye judgeth of it.

VI. Always place light against darkness and darkness against light, by which means you may extend the prospect as a very far off.

VII. Let all shadows lose their force as they remove from the eye; always letting the strongest shadow be nearest hand.

VIII. Lastly, Take Isinglass in small pieces half an ounce, fair Conduit-water two quarts, boil it till the glass is dissolved, which save for use: with which mix spirit or oyl of Cloves, Roses, Cinnamon or Ambergrise, and lay it on and about the Picture where it is not coloured (lest it should change the colours: but upon the colours use it without the perfumes) so it will varnish your Pictures, and give them a gloss, retaining the glory of their colours, and take from them any ill scent which they might otherwise retain.

See the way of tempering Colours for Shadowing, in Chap. 22. Sect. 13. aforegoing.

IX. For Trees you must have a dark Green, which you may make by mixing *Verditer* with *Pink* and *Indico*: the deepest shadows of all in Green, are made with *Sap-Green* and *Indica*.

X. *To preserve your Colours in Limning.*

Take Rosemary-water double distilled, or pure Spirit of Rosemary, and with a few drops of it, temper your shell of white. However dead and faded it was before, it will instantly become perfect white. This Water or Spirit hinders also the Bubbles in *White* and *Umber*, which are troublesome in Grinding.

C H A P. XXVIII.

Of Light and Shadow.

I. **L**ights and shades set in their proper places in such a just and equal proportion, as Nature doth give, or the life require, give a true Idea of the thing we would represent; so that 'tis not any colour whatsoever, nor any single stroak or stroaks which is the cause thereof, but that excellent Symmetry of Light and Shadow, which gives the true resemblance of the light.

II. In shadowing, be careful you spoil not your work by too gross a darkness, whether it be hard or soft.

III. This Observation of light and dark is that which causeth all things contained in your work to come forward or fall backward, and makes every thing from the first to the last to stand in their just places, whereby the distance between thing and thing seems to go from you or come to you as if it were the work of Nature it self.

IV. Suppose it were a plaister Figure, take good notice what appears forwards and what backwards, or
how

how things succeed one another; then consider the cause which makes them in appearance either to incline or recline, and consider the degrees of light and darkness, and whether they fall forward or backward, accordingly in your draught give first gentle touches, and after that heighten by degrees according as the example and your own ingenuity shall direct.

V. Those parts are to be heighten'd in your work which appear highest in your Pattern: The greatest life which we can give on white paper is the paper it self, all lesser lights must be faintly shadowed in proportion to their respective degrees. But on coloured paper white Crions and Tobaccopipe-clay are used for the first and second heightenings, putting each in their proper places, as more or less light is required, which is a singular observation in this manner of drawing. Then you must take heed you heighten not too many places, nor heighten any thing more than what is needful, nor too near the dark or shadows, or any out-line, (except where you intend some reflexion,) lest your work shew hard and rough. In heightening, or such figures as require great light, put the greatest light in the middle, and the lesser towards the edges for the better perspicuity of your work. Lastly, leave sufficient faint places on the ground of your paper between your lights and shades, that they may appear pleasantly with a singular plainness and smoothness.

VI. Reflection, is to be used in delineating, glittering, or shining bodies, as Glass, Pearl, Silver, &c. let the cause of the reflection, be it more or less, be seen in the thing it self.

VII. In plain drawing, lay all your shades smooth, whether it be in hatching or smutching, keeping every thing within its own bounds, and this is done

by not making your shades at first too hard, or putting one shadow upon another too dark.

VIII. Observe that the greater parts of light and shadows, and the small parts intermixt in the same, may always so correspond as thereby to make more apparent the greater.

IX. In Pictures, let the highest light of the whole, (if any darkness stand in the middle of it) appear more dark than indeed it is: and in working always compare light with light, and dark with dark, by which you will find the power of each, and the general use thereof in all operations.

X. Let all your lights be placed one way in the whole work, whether in the Figure, Face, or Garments. If the light fall sideways on the Picture, you must make the other side which is farthest from the light darkest, and let the lights be placed all together on the other side, and not confusedly on both sides, as if it stood in the midst of many lights, for the body cannot be lightned equally in all places. But when you express a Dungeon or Prison with a Torch lighted in it, you must observe that every thing in it, as well as the Garments, must receive their lights from it, and therefore must be shadowed all on the contrary side, which observe in all shadowings of the same kind.

XI. The true and natural disposition of light, is that which gives the principal grace to a Picture, for that without its due light, is clearly another thing; and although so, it may be beautiful in its kind, so far as it is wrought; but if afterwards it shall be shadowed without judgment and Art, so that the *shadows* be confusedly placed, where the *lights* ought to be; or contrariwise, the *lights* where the *shadows* should be; and the *Concavities* and *Con-*
vexities

vexities out of their natural situations, the work will not only be confused, but wholly spoiled: whereas on the contrary having *lights* rightly disposed, it so mightily adds to the perfection of the Figure, that it makes the *Flat* or *Plane* seem to be *imbossed*.

XII. And thus *light* rightly disposed, does that in the *Painters* work, which *substance* or *matter* does in the *Carvers* work; insomuch that they seem to be *Imbossed* outwards, such is the force of *light* and *shadow*: and herein you will find admirable *scenes* and *foreshortnings*, proceeding purely from the true disposition of the *light*; without which the Figure would not only be imperfect, but lose also much of its grace, though otherwise well proportioned and placed.

XIII. This *light* is the cause or formal reason whereby coloured things are seen, whose Shapes and Images pass to the Phantasy, and especially enlighten the eyes in which the Image is formed; which first passeth to the Common-sense, afterwards to the Phantasy, and last of all to the understanding; whereby every thing is discovered to be what indeed it is.

XIV. In respect of this light, three things occur to our visive faculty, *viz.* the visual lines, the coloured body, and the faculty of seeing, which is in the eye.

XV. *The Visual lines lightned*, (which are the proper subject of *Perspective*) come to the eye in a Pyramidal form, the base of which Pyramis resteth in the object; and the Cone or Angle thereof comes to the eye more blunt or obtuse, if the said object be near; but more sharp or acute, if it be farther off, whereby it is not so clearly or easily discerned, as otherwise it would.

XVI. *The*

XVI. *The coloured Object or Body*, comes not to the eye, but its visible species or shapes are diffused through the clearness of the Air unto the Eye; which species are only certain Images like those we see in a Glass: And if the coloured body stand near to this Image, it comes to our eye in the same quantity and bigness of the Angle of the Pyramis, which being obtuse or blunt, makes the Image seem as great as indeed it is, and so discerned the more distinctly: but if far off, the visible species appears less, according to the proportion of the distance and acuteness of the Pyramidal Angle.

XVII. *The faculty of seeing* is formed by the Concurrence of the other two things, *viz.* the visual lines, and the coloured body; which informeth the eye by reducing it from meer Ability into Act, and so performing its operations, and causing the thing also to be seen more apparently and distinctly.

XVIII. From hence it is apparent, that the self-same body cannot be equally lightned in all places.
 1. Because the light doth not directly illuminate any more than that part which is directly opposite to it; the other parts which are oblique to it are illustrated more imperfectly, by reason of the interception or obliquity of an opake body, through which its beams cannot pierce. 2. From the several distances of the eye to the parts of the same body; for as the first part of the body is seen and placed nearest the eye, and so comes to it with a more obtuse Angle, so being more lightned, it is also seen more distinctly, whereas the other parts being farther off, come to the eye in a more acute Angle, and being lesser lightned, cannot be so plainly seen.

XIX. If two, three, or four men stood one behind another, all of them equally receiving the light;
 yet

yet in respect of your eye they do not ; and therefore by the former Doctrine, you must paint the second which is farthest off from the eye darker, the third darker than that, and the fourth darkest of all, and so on if there be more, till the eye can see no farther. The reason is because the second standing farther off, comes to the eye with a lesser Angle (as aforesaid) whereby it cannot be seen so evidently as the first, the same reason is for the third, fourth, fifth, &c.

XX. The same thing is also to be understood, if the visible species of one or many objects be seen sideways, for according to their distance and obliquity to the eye, so you must shadow them.

XXI. That part of the body must be made lightest, which has the light most opposite to it : if the light be placed above the head descending ; then the top of the head must be made lightest, the shoulder next lightest, and so you must shadow, by losing the light by degrees : That part of the body which stands farthest out, must be made lightest, because it comes nearest to the light, and the light loses so much of its brightness, by how much any part of the body bends inward, because those parts which stick out, do hinder the Glory and full Brightness of the light from those parts that fall any thing more hollow. Therefore, by how much one part of the body sticks out beyond another, by so much it must be made lighter than the other, and *è contrario*, so much the darker.

C H A P. XXIX.

Of Colours more particularly.

I. **O**ker is a good colour, and much in use for shadows, in Pictures of the life, both for Hair and Drapery: In Landskips it is used for Rocks and High-ways.

II. *Pink*, the fairest, with blew, makes the fastest greens for Landskip and Drapery.

Sap-green and green-bice are good in their kind; but the first is so transparent and thin, the other of so course and gross body, that in many things they will be useless, especially where a beautiful green (made of Pink and Bice mixed with Indico) is required.

III. *Umber*, is a greasie foul colour; but being calcined and ground, it works sharp and neat.

IV. *Spanish-brown*, is exceeding course and full of gravel; being prepared, it is used for a mixture made of Red-lead mixt with a little Umber, which makes the same colour,

V. *Colens earth* or *Terra Lemnia*, it is used to close up the last and deepest touches in the shadows of Pictures of the life, and in Landskips; use it when new ground.

VI. *Cherry stone-black*, is very good for Drapery and black apparel: mixt with Indico, it is excellent for Satten; it appears more beautiful or shining if mixed with a little white: if deepned with Ivory-black, in hard reflections, and strong deep touches, it is wonderful fair.

VII. *Ivory black*, it serves for a deep black, but is not easie to work without it be well tempered with Sugar-candy, to prevent peeling.

VIII. *Red-*

VIII. *Red-lead*, well wash'd, is a good colour, but *Vermilion* for those pieces which require an exquisite redness.

IX. *Indian-lake*, is the dearest and most beautiful of all ordinary reds; it is to be ground as white-lead, and mixt with a little white Sugar-candy and fair water, till the colour and Sugar-candy be throughly dissolved, which being dry will lie very fast, without danger of cracking or peeling.

C H A P. XXX.

Observations of making some Original Colours.

I. **T**O make white-lead.

Put into an earthen pot or Crucible several plates of fine Lead, cover them with White-wine Vinegar, covering the top of the pot close with clay, bury it in a Cellar for seven or eight weeks, and you will have good white lead upon the plates, which wipe off.

II. *To make Verdigrise.*

This is made by hanging plates of Copper over the fumes of *Aqua fortis*, or spirit of Nitre, or by dipping them in the same or in Vinegar.

III. *To make an Emerald Colour.*

Take Verdigrise in fine powder, which temper with varnish, and lay it upon a ground of liquid Silver burnisht, and you have a fair Emerald.

IV. *To make a Ruby colour.*

Mix the same with Florence Lake, and you shall have a very fair Ruby colour.

V. *To make a Saphire Colour.*

The same, *viz.* Verdigrise mixt with Ultramarine, makes a glorious Saphire.

VI. *To*

VI. *To make a Crimson Velvet.*

Take Turnsole and mix it with Indian-lake (well ground with gum and Sugar-candy) lay it full, and when it is wet, wipe away the colour with a dry pencil, where you would have the heightning of the Crimson Velvet appear, and the stronger reflections will be well expressed.

VII. *To make a Silver black.*

Take fine Silver filings or plates, which dissolve in spirit of Nitre or *Aqua fortis*, and evaporate to dryness, or precipitate *cum Oleo Sulphuris* or Salt-water, and you shall have a snow-white precipitate, which mixt with water makes the best black in the world, to dy all manner of Hair, Horns, Bones, Wood, Metals, &c.

VIII. *To make a Murry or Amethyst.*

It is made of Indian Lake ground with Gum-Arabick water only.

IX. *To make a Red or Ruby for Limning.*

It is made of Indian-Lake (which breaks off a Scarlet colour) ground with Gum-water and Sugar-candy.

X. *To make Azure blew, or Sapphire.*

It is made of Ultramarine of *Venice* (which is best) the best blew Smalt, or blew bice ground with gum-water only: you may make good shadowing blews of Indico, Flory and Litmose, all which need no washing, nor Litmose no grinding, but only infused in a Lixivium of Soap-ashes.

XI. *To make a Green or Emerald.*

It is made of Cedar green: in place whereof, take Green-bice to draw with: Pink is good also for Landskips, mixed with Bice-ashes; as also with Masticot and Ceruse.

XII. *To make a Yellow or Topaz.*

It is made of Masticot which is the best, of which there

there are divers sorts, viz deeper and paler: Yellow-Oker also for want of better may do. Shadow Masticot with Yellow-Oker deepen it with Oker de Luce.

XIII. *To mak Ultramarine.*

Take the deepest coloured *Lapis Lazuli* (having few veins of Gold upon it) heat it red-hot in a Crucible close covered, then quench it in Urine, Vinegar or water in a Leaded earthen pot, dry it well, then with a pair of pinsers nip off the hard, gray, and whitest part from it, and grind the remainder with honied water as fine as may be, then dry it for use. The honied water is made of water a quart, boiled with honey two spoonfuls.

CHAP. XXXI.

The sum of the Observations of Limning to the life in general.

I. **L**ET the Table be prepared very exactly by the fifth rule of the twenty third Chapter of this second Book.

II. Let the ground be of flesh colour, tempering it according to the complexion to be painted.

III. If it be a fair complexion, mix a good quantity of Red and White-Lead together somewhat thick.

IV. If swarthy or brown, mix with the former a little fine Masticot or English Oker, or both, always observing that your ground be fairer than the complexion painted.

For fairness may be shadowed or darkened at pleasure; but if it be sad or dark, you can never heighten it, for in Limning, the picture is always wrought down to its exact colour.

V. Lay the ground upon the Card or Tablet, with a larger pencil than ordinary, free from spots, scratches

of

of the pencil, or dust, and as even as possible may be; and let the colour be rather thin and waterish than too thick, doing it very quick and nimbly with two or three dashes of the pencil.

VI. This done, prepare your shadows in order, by the seventh rule of the four and twentieth Chapter of this second Book.

VII. Then draw the out-lines of the face with Lake and white mingled together very fine; so that if you should mistake in your first draught, you may with a strong stroak draw it true, the other line by reason of its faintness being no hinderance.

These lines must be truly drawn, sharp and neat, with the greatest exactness imaginable.

VIII. Observe the most remarkable and deep shadows, which keep in memory when you go over them with more exactness; drawing out also (if you so please) the shape of that part of the body next adjoining to the face, viz. a little beneath the shoulders, with a strong and dark colour, which in case of mistake in proportion may easily be altered.

IX. The first sitting is to dead colour the face: the second sitting is the exact colouring and observation of the several shadows, graces, beauties or deformities, as they are in Nature: the third sitting is making smooth what was before rough and rude; clothing what was naked, and giving strong and deepning touches to every respective shadow.

X. The dead colour is thus made.

Take of the aforesaid ground (at the third or fourth Section of this Chapter) and mix it with fine Red-lead, tempering it exactly to a dead colour of the cheeks and lips, having a great care, that you make it not too deep; which if light, you may do at pleasure.

XI. The

XI. The face is first begun to be coloured in the reds of the cheeks and lips, and somewhat strongly in the bottom of the chin (if beardless) also over, under, and about the eyes with a faint redness.

XII. The ear is most commonly reddish; as also sometimes the roots of the hair.

XIII. The ground being wash'd over with this reddish or dead colour, let the shadows be as well bold and strong as exact and curious.

A good Picture, if but dead coloured only, and seeming near hand very rough, uneven and unpleasant, yet being boldly and strongly done and shadowed will appear very smooth, delicate, and neat if but viewed at a distance from the eye. Therefore curiosity and neatness of Colour, is not so much to be regarded, as bold, lofty, and strong expressing what is seen in the life.

XIV. The next thing to be done is the use of the faint blews, about the corners and balls of the eyes and temples, which you must work out exceeding sweetly, and faint by degrees.

XV. Always be sure to make the hard shadows fall in the dark side of the face, under the nose, chin, and eye-brows, as the light falls, with somewhat strong touches.

XVI. The light shadows being done and smoothed, work the hair into such forms, curlings, and dispositions as best adorn the piece.

First draw it with colours, neatly and to the life; then wash it roughly as the rest; and the next time perfect it: filling up the empty places with colour, and the partings thereof with blew.

XVII. And ever remember, when you would have your colours or shadows deep, strong, and bold; that you do them by degrees, beginning faintly, and then encreasing the same.

L

XVIII. First,

XVIII. First, use the former colours in the same places again, driving and sweetning them into one another, that no part may look uneven, or with an edge, or patch of colour, but altogether equally mixt and dispersed, lying soft and smooth, like smoak or vapours.

XIX. Secondly, this work being done for an hour or two, lay the ground for behind the Picture of Blew, or Crimson, like to a Sattin or Velvet Curtain.

XX. If blew, let it be done with Bice well tempered in a shell: First draw the out-lines with the same colour, with a small pencil: then with a thin and waterish blew wash over the whole ground with a larger pencil: lastly, with thicker colour cover the same which you before wash'd, swiftly, that it dry not before all be covered, so will it lie smooth and even.

XXI. If Crimson, work with Indian-lake, in those places where the strong lights, and high reflections fall, let the light be done with thin and waterish Lake; the deepning and strong shadows, close by the light with thicker colour: this done, the Picture will be much changed; the beauty of these grounds will much darken and deaden it.

XXII. Let the apparel with suitable colours be done only flat with heightening or deepning; and then go over the face again, reducing the shadows to smoothness and neatness with a sharp and curious pencil: drawing the eyes, the lines of the eye-lids; redness of the nostrils; shadow of the ears; deepness of the eye-brows, and those other remarkable marks of the face: *so sweetning the out-lines of the face (by darkning the ground, above from the light side, and below on the dark side) that when the work is done, the*
ground

ground may stand as it were at a distance from the face behind; and the face may seem to stand off forward from the ground.

XXIII. Then go over the hair, making it light or deep by the life: and in apparel make the several folds and shadows, and what else is to be imitated, as it is in the life it self; lightning the lines with the purest white, a little yellow and some blew; and deepening with Ivory black, and heightning with black mixed with a little Lake or Indico.

XXIV. This done, and the person gone, your work being yet rough, by your self polish it, and strive to make it smooth and pleasant, filling up the empty places, and sweetning the shadows, which yet lie uneven and hard.

XXV. The apparel, hair, and ground being finished, now give strong touches for the rounding of the face; and observe whatsoever may conduce to likeness and resemblance, as moles, smilings, or glancings of the eyes, motion of the mouth, &c. for which purpose, you may find an occasion of discourse, or cause the person to be in action, and to look merrily and chearfully.

XXVI. Lastly conclude, that the eye gives the life; the nose the favour; the mouth the likeness; and the chin the grace.

XXVII. In fair coloured Drapery, if the lightning be done with fine shell Gold it will add a most wonderful lusture, and be a singular ornament to your work; and if this Gold be mixt with the very ground it self, the apparel will appear much the fairer.

XXVIII. *The Dead colouring of a whole figure designed for Historical Limning.*

It is twofold. 1. To temper a fresh colour somewhat lighter than you intend it to be after it is wrought

down by the Variety of *shadowing mixtures*, which flesh Colour you must temper in a large shell, because it requires a quantity; it must be of a good mixture, neither too thick nor too thin; then take a Goose-quil-pencil full of the same colour, and lay it on quick, even, and smooth, on the place where you design the Figure; if you be not very nimble in the laying it on, it will not lye even. 2. The other way is thus. Instead of flesh Colour, make use of the best *Lake-white*, well prepared, and lay it on with the same sized Pencil as before mentioned, and so your dead Colour is as the Oyl-painters do, which must be done free, rough, and boldest of all. But note, That you draw all the out-lines of your figure first with a *Temperature of Lake and White*, before you lay the ground Colour for the flesh. Also, in *dead colouring*, leave not your shadows too dark, harsh, or hard, next to the light; but faint, even and misty. This done, mix *Flake-White*, and a little *Red lead*, with which touch all the deep places both in Face and Body, as your ingenuity, or the life shall direct you: this do extream faint, because if you lay it too dark, you cannot heighten it up again, without running the hazard of spoiling of it, but if too light, you may deepen it by degrees at your pleasure. In the face make a delicate faintness, or faint Red inclining to a Purple, under the Eyes; then touch the tips of the Ears, with the aforementioned mixture, as also the Cheeks, Lips and the bottom of the Chin, and so go on to the soal of the foot, touching in all the following Muscles and places with this glowing colour. Then mix *Gallstone and Pink*, for the general yellowish glowing shadows, and in some places add to the former mixture or temperature, a little *Lake*. More over you will perceive in the life, a faint blewish colour in some parts of the body, which you may express with

with a temperature or mixture of *Indico and White*, and so proceed according to the subject you draw after, whether the *life* or *copying* after *Painting*. All these shadows are to be expressed after the manner of hatching with a Pen, with gentle and faint strokes washing it along.

XXIX. But in this *Dead colouring* 1. See that you cover your ground-colour with the aforesaid Red and other shadows. 2. Be not too curious in the first working, but rather make choice of a good, free, and bold following of nature, than to affect an extream neat, set, or starcht way. 3. Let not the roughness of your colour discourage you, for that is to be wrought down and couched by degrees with the other shadows, but not at first. 4. Then by degrees sweeten and heighten your shadows according as the light falls. 5. In some places touch it with strong touches and in those places bring your work up together, to an equal roundness and strength, not finishing any part of the figure before the other, but visiting and working all the parts curiously alike, but in a manner at Random. 6. Then observe the roundness, colouring, and shadowing, or what ever else is requisite to the perfection of the Work. 7. Having done with the fainter shadows, sweeten and work them into the Red still. 8. Carefully observe all the variety of colouring, and with your pencil curiously delineate, those several varieties of nature which you had rudely traced out before. 9. To do this, make use of the same colour in the same places as you did before, working, driving, and sweetening the same colours one into another; that nothing be left in your work with a harsh edge, uneven, or in a lump, but all as it were sweet, or driven one into another with the point of somewhat a sharper pencil than you use at first, so that your sha-

dows may lye dispersed, soft, sweet, smooth, and gently extended one into another like Air. 10. Lastly, observe, that Skies, Waters, Trees, Plants, Flowers, and Ground, are all to be dead coloured before the Figures.

XXX. *How to draw with Indian Ink.*

It is done after the manner of Washing: Or, instead of the *Indian Ink*, you may temper *Lamp-black*: or *bread burnt*. Take your *Indian Ink*, or *Lamp-black*, and temper it with fair water, in a shell, or upon your hand, your out-lines being drawn with *Cole*, or *Black-lead*, take an indifferent long sharp pointed pencil, dip the point into fair water, then dip the pencil into *Indian Ink*, and draw all your out-lines very faint; (note that all the temperature of *Indian Ink* must be thin and waterish, not too black) when it is dry, take a little bit of stale white bread, and rub out the out-lines which you drew with the *Cole*, (if too black) then dash on your shadows very faintly, and deepen it by degrees, as you shall think convenient, and finish it with *Stipples*, it being most advantagious to any one that shall practise *Limning*. Beware of taking too much colour in your pencil, which you may prevent by first drawing it through your lips. In laying on your shadows, never lay them too deep, but deepen them down by degrees; for if too deep you can never heighten them again.

C H A P. XXXII.

Of Limning Landskip, more particularly.

I. **T**O make the Tablet for Landskip.

Take a piece of Vellom, and shave it thin upon a Frame, fastning it with paste or glew, and pasting it upon a board; and these manner of Tablets are altogether used in Italy for Landskip, and History.

II. If you draw a Landskip from the life take your station from the rise of ground, or top of an hill, where you shall have a large Horizon, marking your Tablet into three divisions downwards from the top to the bottom: then your face being directly opposed to the midst of the finitor, keeping your body fixed, depict what is directly before your eyes, upon your Tablet on your middle division, then turning your head (not your body) to the right hand, depict what is there to be seen: adjoining it to the former. *In like manner doing by that which is to be seen on the left hand, your Landskip will be compleated.*

III. Make every thing exact, not only in respect of distance, proportion and colour; but also in respect of form, as if there be *Hills, Dales, Rocks, Mountains, Cataracts, Ruines, Aqueducts, Towns, Cities, Castles, Fortifications*, or whatsoever else may present it self to view; making always a fair Sky, to be seen afar off; letting your light always descend from the left hand to the right.

IV. In beginning your work, first begin with a large Skye; and if there be any shining or reflexion of the Sun, beware you mix no Red-lead in the Purple of the Sky, or Clouds, but only with Lake and

white: the yellow and whitish beams of Sol work with Masticot and white.

V. Then with a fresh or clean pencil finish the blewish Sky, and Clouds, with smalt only: at the first working, dead all the work over, with colours suitable to the Air, green Meadows, Trees, and Ground, laying them somewhat smooth, not very curiously, but slightly and hastily; make a large Sky, which work down in the Horizon, faintly, but fair; and drawing nearer to the Earth, let the remote Mountains appear sweet and misty, almost indistinguishable, joyning with the Clouds, and as it were lost in the Air.

VI. The next ground colour downwards must encrease in magnitude of reason, as nearer the eyes, somewhat blewish or Sea-green: but drawing towards the first ground, let them decline into a reddish or popinjay-green: the last ground colour, must be nearest the colour of the earth, *viz.* a dark yellow, brown and green; with which, or some colour near it, you must make your first Trees; making them, as they come near in distance, to encrease proportionably in colour and magnitude, with great judgment: the leaves flowing and falling one with another, some apparent, others lost in shadow.

VII. Let your Landskip lie low, and as it were under the eye (which is most graceful and natural) with a large and full Sky not rising high, and lifting it self into the top of the piece, as some have done.

VIII. Be sure to make your shadows fall all one way, *viz.* to make light against darkness, and darkness against light; thereby extending the prospect, and making it to shew as afar off; by losing its force and vigour, by the remoteness from the eye.

IX. In

IX. In touching the Trees, Boughs and Branches, put all the dark shadows first, raising the lighter leaves above the darker, by adding Masticot to the dark green, which may be made with Bice, Pink, and Indico: the uppermost of all, exprest last of all, by lightly touching the exterior edges of some of the former leaves, with a little green, Masticot, and white: the darkest shadows you may set off with Sap-green and Indico.

X. Trees and their Leaves, Rivers, and Mountains far distant, you must strive to exprest with a certain real softness and delicateness: in making Cataracts, great falls of Waters, and Rocks, you must first lay a full ground near the colour, then with a stronger in the dark places, and slight heightening in the light: remarking all disproportions, cracks, ruptures and various representations of infinitely differing matters; the manner whereof is abundantly exprest, in almost every Landskip.

Horat. Epod. 16.

Vos, quibus est virtus, muliebrem tollite luctum,
Etrusca præter & volate littora.

Nos manet Oceanus circumvagus; arva, beata
Petamus arva, divites & insulas:

Reddit ubi Cererem tellus inarata quotannis,
Et imputata floret usquè vinea.

Germinet & nunquam fallentis termes olivæ,
Suamque pulla ficus ornat arborem.

Illis injustæ veniunt ad mulctra capellæ;
Refertque tenta grex amicus ubera.

Nec Vespertinus circumgemit ursus ovile;
Nec intumescit alta viperis humus:

Pluráque felices mirabimur : ut neque largis
 Aquosus Eurus arva radat imbribus,
 Pinguia nec ficcis urantur femina glebis :
 Utrumque rege temperante Coelitem.
 Non huc Argoo contendit remige pinus,
 Neque impudica Colchis intulit pedem
 Non huc Sidonii torserunt cornua nautæ,
 Laboriosa nec cohors Ulyssæi.
 Nulla nocent pecori contagia, nullius astri
 Gregem æstuosa torret impotentia.
 Jupiter illa piæ secrevit littora genti,
 Ut inquinavit ære tempus aureum.

*You nobler spirits, hence with womens tears,
 Sail from Etruscan confines free from fears :
 The Earth-encirc'ling Ocean us invites,
 Rich Islands, Fields, Fields blest with all delights.
 Where Lands untill'd are yearly fruitful seen,
 And the unpruned Vine perpetual green.
 Sill, Olives by the faithful branch are born,
 And mellow Figgs their native Trees adorn.
 There, milchy Goats come freely to the pail,
 Nor do glad flocks with dugs distended fail.
 The nightly Bear roars not about the fold,
 Nor hollow earth doth poisonous Vipers hold.
 Add to this happiness, the humid East
 Doth not with frequent showres the Fields infest.
 Nor the fat seeds are parcht in barren land,
 The powers above both temp'ring with command.
 No Bark came hither with Argoan oar,
 Nor landed wanton Colchis on this shoar :
 Cadmus with filled sails turn'd not this way,
 Nor painful troops that with Ulysses stray.
 Here amongst cattle no Contagions are,
 Nor feel flocks droughty power of any star.*

*When brass did on the Golden Age intrude,
Jove for the pious did this place seclude.*

C H A P. XXXIII.

Of the various Forms or Degrees of Colouring.

I. **T**HERE are four various Forms or degrees of colouring, viz. 1. *Of Infants, or Children.* 2. *Of Virgins, or fair Women.* 3. *Naked Bodies.* 4. *Old or aged bodies.*

II. *Infants or young Children* are to be painted of a soft and delicate complexion; the Skin and ears of a ruddy and pleasant colour, almost transparent; which may be done with White lead, Lake, and a little Red lead; shadowing it thin, faint and soft; letting the Cheeks, Lips, Chin, Fingers, Knees, and Toes, be more ruddy than other parts; making all their Linnen very fine, thin, and transparent, or perspicuous, with strong touches in the thickest folds

III. *Virgins and fair Women* are as curiously to be express'd as the former, but their Muscles are to be more apparent, their shape more perfect; and their shadows to be of a whitish yellow, blewish, and in some places almost purple; but the most perfect and exquisite direction is the life, which ought rather to be followed than any thing delivered by rule.

For the shadows here, mix white with Pink,; and Indico and white; and in some places Lake, with a little Indico and white. As for Womens Bodies, viz. such as are naked, they are to be represented soft, round, plump, gentle and tender, and without many Muscles. On the contrary, Mens Bodies are to be represented strong, sturdy, stout, and

and vigorous, with the Muscles exactly placed and drawn, which to do with Judgment and Understanding, requires time, study, and knowledge in Anatomy.

IV. *Naked Bodies* are to be painted strong, lively, and accurate; exactly matching the respective pairs of Muscles and Nerves, fixing each Artery in its due and proper place, giving each limb its proper motion form and situation, with its true and natural colour; all which to do well may be the study and practice of almost ones whole life.

V. *Old or aged Bodies* ought to be eminent for exact and curious shadows, which may be made of Pink, Lake, and Ivory-black, which make notable shadows, in appearance like the wrinkles and furrows of the face and hand in extream old age: let the eyes be dark, the aspect melancholy, the hair white (or else the pate bald) and all the remarks of Antiquity or age be very apparent and formidable.

Pink mixt with Lake and Red-lead, makes an excellent shadow for old Mens Bodies: but for the extreamest or deepest shadowings either in face or body, mix Lake and Ivory-black, which will make an excellent deep shadow, and will be very useful in expressing of the several furrows and wrinkles in the face and hands of people extreamly Aged, with their dark Eyes and melancholy Aspects.

VI. But notwithstanding all the foregoing rules, the posture or form of standing, and being, either of the whole body, or any of its parts, ought diligently to be observed, that the life may be imitated, in which, it only lies in the breast and judgment of the Painter to set it off with such various colours, as may best besit the respective complexion and accidental shadows of each accidental position or posture, which are sometimes more pale, sometimes more ruddy; sometimes more faint, sometimes more lively.

C H A P. XXXIV.

Of the Limning of the Skie, Clouds, &c.

I. **F**OR a beautiful Sky, fitted for fair weather, take Bice tempered with white, laying it in the upper part of the Sky, (as you see need) under which you may lay a thin or faint purple with a small soft brush: working the undermost purple into the uppermost blew; but so as that the blew may stand clear and perfect: then for the Horizon or near the same lay a fine thin Masticot, which work from below upwards, till it mix with the purple, after which you may take a stronger purple, making here and there upon the former purple, as it were the form of Clouds, as nature requires: upon the Masticot you may also work with Minium mixed with Ceruse, to imitate the fiery beams which often appear in hot and clear Summer weather.

II. To imitate glory, with a great shining light of a yellowish colour or the Sun-beams, you must take Masticot or Saffron mixt with Red-lead, and heightened with shell gold, and the like.

III. A Cloudy Sky is imitated with pale Bice, afterwards shading the Clouds with a mixture of several colours: a fair Sky requires clouds of a greater shade, with purple: the clouds in a rainy Sky, must be shaded with Indico and Lake: in a night Sky, with black and dark blew smoaky, making a blaze with purple, Minium and Ceruse: the clouds in a Sun rising or setting must be done with Minium, Ceruse and purple, making underneath the clouds scattering stroaks, with Minium and Masticot, or Minium and Saffron;

Saffron; so that the scatterings upwards may appear faint; and below, afar off near the Landskip, somewhat fiery.

IV. A fiery Sky, let be made with a pale blew, smoothing it downwards, which afterwards, you must mingle with a strong Red-lead, mixt with Ceruse, making long diminutive stroaks like the Sunbeams upon the blew Sky with which let fall some purple stroaks, much like the said beams; then, sweeten one into another with a soft brush pencil, wet in gum-water, not too strong.

V. Lastly, you may make a fair Sky, by using fair Bice alone, and tempering it by degrees with more and more white, smoothing one into another, from above downwards, and shading it as you shall see reason and nature require.

C H A P. XXXV.

Of the Limning of Towns, Castles, and Ruines.

I. **T**Hose Towns, or Cities, which seem at farthest distance, must have but little shadowing or heightning, and sometimes none at all, these if they appear against the Sky, must be laid with Bice, and a little purple, and shaded faintly with a good blew.

II. Those which lie at a farther distance, must be laid with Bice and purple as aforesaid, and shaded with light blew, and heightned with white.

III. Those which appear at an ordinary distance, must be done with Vermilion and purple, and shaded with a strong purple shaded with white.

IV. Those which are near, must be done with Vermilion and white, and then shaded with a strong Vermilion and brown Oker, mixt with white.

C H A P.

C H A P. XXXVI.

Of Mountains, Hills, and the like.

I. **T**Hose Mountains which are next in sight, must be laid with a fair green, and shaded with Sap-green ; sometimes with brown Oker, and *French Berries*, to distinguish them from such as are farther off.

II. Such as lie farther off, must be laid with green, blew, and Masticot, and be shaded with blew, green, and Verdigrise.

III. Such as lie yet farther, must be laid with some strong blew, white, and Bergh-green, and shaded with strong blew.

IV. Such as lie yet farther, must be laid with strong blew and white, and shaded with blew only.

V. Such as lie yet farther, with Bice and white, and shaded with Bice.

VI. Such as lie farther off, are only laid with white, and shaded with a faint Bice.

VII. Fields being near, must be done with a singular good green, the which must always be faintest, according as they are farther distant ; heightening them with Masticot, or a light green, and shading with Sap-green, but not too much : those which lie far, are to be laid with a *French berry* yellow, made of a blew greenish, shaded with Oker.

VIII. And in Fields, Hills, and Dales. (whether near or far off) there are many roads, passages and ways, which must be laid either fainter or stronger according to their distance and situation.

C H A P. XXXVII.

Of Trees, Boughs, Cottages, and the like.

I. **T**Hose Trees of divers colours which stand up on the fore-ground, must be laid with divers colours as with Verdigrise, mixt with other green, or with masticot, and Bergh-green mixt, and then shaded with Sap-green; which you may heighten with Masticot, mixt with White-lead.

II. If they appear yellow, use Verdigrise and Masticot mixt, and shadow with Verdigrise.

III. If they be of a whitish colour, let them be laid with Verdigrise mixt with White-lead, and shade them with Verdigrise, mixt with Indico faint; heighten them with Ceruse, that they may look of a faint yellow green; or else with a little Indico and yellow.

IV. Those which stand at a great distance, lay with Indico, and white, and shadow with Indico, and heighten with the same made a little lighter.

V. If Trees be very old with moss upon them, give them the appearance of green and yellow, which commix with Pink, and Bergh-green: if they be of a whitish yellow, do them with Pink and white mixt with a little green.

VI. Country Cottages lay with light Oker, which order according to the newness or oldness of the building.

VII. Cottages of Timber, let be laid of the colour of Trees and Wood-work.

VIII. Thatcht Cottages if new, lay with Pink, shadow with brown Oker, and heighten with Masticot

mixt

mixt with white: but if old, lay them with brown Oker mixt with white, and heighten with the same.

IX. Straw colours at a distance are done with Indico and white, mixt sometimes with brown Oker, and shaded with Indico.

C H A P. XXXVIII.

Of the Colouring of Naked Figures.

I. **F**OR Women and Children, take the best Flake White-lead, and a little good Lake, with which if you please you may mix a little Vermilion, but take heed that your mixture be neither too red or too pale, but exactly agreeable to the life it self; the which in this case is the best director: this being dry, touch the lips, cheeks, chin, fingers, and toes with thin Lake, and then heighten with white mixt with a little Lake or Vermilion.

II. But if you would cover them somewhat brownish, mix with your Carnation, a little brown-Oker; and shade it with Red-Oker, and coal-black with a little Lake.

III. In old Women take White, Vermilion and Brown-Oker, and give the lustre where it ought to be with Vermilion mixt with a little Lake: shade it with Red-Oker and Lake, or with Wood foot, or Lamp-black, and heighten with white mixt with a small quantity of Vermilion.

IV. Dead Children and young Women, paint with Brown-Oker, white and some Vermilion, and shadow the same with the foot of wood.

V. Dead old Women colour with Brown-Oker mixt with a little white, which shade with a thin foot of wood first, then with a stronger.

VI. Young

VI. Young men paint with Ceruse, Vermilion and Lake, making it a little browner than for young Women; giving them lustre with Vermilion and Lake, shadowing with Lamp-black and Brown-Oker; and heightning with Ceruse and Vermilion.

VII. Old Men Limn with Vermilion, Brown-Oker, and white; shade with soot and Lamp-black; heighten with Vermilion, Brown-Oker, and white, and give it a lustre with Lake or Vermilion.

VIII. Dead men colour with Brown-Oker, white, and a little Vermilion, as your discretion shall inform you, and shade with soot, or Lamp-black mixt with a little Ceruse.

IX. Devils, Satyrs, and the like Limn with brown-Oker, mixt with a little white and red, which mixture let be made some part whiter, some part browner; and strongly shade it with soot, as your own ingenuity may inform you.

C H A P. XXXIX.

Of the Colouring of Hair.

I. **T**HE Hair of Women and Children is coloured with simple Brown-Oker, and heightened with Masticot: The same in the hair of men, only making it sadder or lighter as the life requires.

II. Hair which is black may be done with soot, or Lamp-black, but it will abide no heightning.

III. Childrens Hair is sometimes laid with brown-Oker and White, and heightened with the same; and sometimes with Alom.

IV. Sometimes also they are done with light-oker,
and

and deepned with brown-oker, and heightned with Masticot simple.

V. Old Womens Hair with brown-oker and black; heightned with Brown-oker and white.

VI. In Gray Hair take more black than white, and heighten with pure white.

C H A P. XL.

Of Walls, Chambers, and the like.

I. **F**OR a brick Wall take Vermilion and white and shadow with Red-oker.

II. If the ground of the wall is laid with black and white, shade it with a thin black, if with Red-oker and white, shade it with purple: or with Lake and black, or Red-oker simple.

III. If it be laid with black, white, and purple, shade it with purple and black.

IV. If the wall belongs to any Chamber or Hall, having Figures or Statues; so order and temper your colours, with such distinction, that the Figures and Wall be not drowned in each other.

V. Sandy fore-grounds do thinly with brown-oker, sad or light as the life presents; shadow the same with the same brown-oker, and Rocks with Red-oker, according as they are near to, or far from the sight.

C H A P. XLI.

Of Marble Pillars, Rocks, and the like.

I. **M**Arble must be done with a good and light pencil, after a careless manner in imitation of Nature, wherein all such stains, colours, veins, and representations of the faces of living things must be carefully observed.

II. The like is to be observed in Rocks, of Sandy colours, and ragged forms; which if seen at a great distance, must be coloured with thin Bice, and then heightened with purple and white, and shaded with Smalt or a deep blew.

III. If they seem near, colour them with brown-oker mixt with white, which go over again with Vermilion mixt with white, after which lay here and there some Verdegrise mixt with some other green.

IV. In these works you must make spots, stains and breakings, with hatchings, which shade with the foot of Wood or Lamp-black mixt with a little white.

C H A P. XLII.

Of the Colouring of Metals.

I. **F**OR Gold colour, take Red-lead, Saffron, and very light Oker, with which colour all manner of Cups, Dishes and the like, which shade with foot, and heighten with shell Gold.

II. For Silver, lay a thin white, which shade with a thin blew, mixt with a little black, and heighten with shell Silver.

III. For

III. For Tin and Iron, take white and Indico, and shade it with Indico and Bice, and heighten with white or shell Silver.

IV. For Brass, take thin Pink, shade it with Indico mixt with green, or with almost all Indico, and heighten it with shell Gold.

V. For Copper, take Red-oker and white, shade it with Red-oker, and heighten with Red-oker and white, heightning also here and there, where the light falls, with shell Silver.

C H A P. XLII.

Of the Colouring of Flowers.

I. **T**HE Tulip, draw it first with black-lead upon a white ground, then shade it a little (as for a white Flower) with thin Indian Ink, or with green yellow Ink, or with black-lead ground with thick gum-water; then lay on your several colours resembling Nature, which being dry, shade with a higher colour, and then farther shadow it, according to the nature of the flower: so that being finished it may be like flame, Red, Blew, Lake, Purple, Spotted, or otherwise, in imitation of the life.

II. The Damask Rose, lay with Lake mixt with white, shadow with the same mixt with thin Lake; and heighten with white.

III. The green leaves are done with Verdigrise mixt with some *French* berry green, shade it with Verdegrise mixt with Sap-green; the stalks lay somewhat browner with brown-oker.

IV. Red Roses do with fine Lake mixt with white,

shade it with brown Lake, and heighten it with Lake mixt with white.

V. White Roses colour with Flake Lead, shade it with white and black (but the chief shadows with a stronger black) and heighten with white.

VI. The little thrums (which some erroneously call seeds) in the middle of the Rose, lay with Masticot, and shadow with Minium, and heighten with white.

VII. The Clove gilliflower is done almost like the Red-rose; the specking or spotting of it is done with Lake; those which are lighter, with a lighter red upon a pure white; those like flames with Vermilion and Lake, which shade with a stronger Lake; and speck the white with Lake and Vermilion, to resemble the life.

VIII. The green stalks, or branches and leaves lay with Bergh-green, and shade with Sap-green.

IX. The Marigold do with yellow Orpiment and Minium, shadow with Vermilion and Lake mixt with Minium; and heighten with white and Masticot.

X. Corn-flowers lay with blew mixt with some white, shadow with Indico, and shadow with blew and white.

C H A P. XLIV.

Of Radishes, Turneps, Melons, Cucumbers, and Cabbage.

I. **R** Adishes are done with white, shaded with Lake, and as it were behind sweetned with purple: and sometimes with green from the top downwards: The green leaves at top with Verdegriſe mixed with Sap-green, shaded with Sap-green, and heightned with Masticot.

II. Tur-

II. Turneps are laid with white, shaded with foot ; the leaves as the Radish leaves.

III. Yellow Melons with yellow, shaded with brown-oker ; the veins with a stronger brown-oker, and then heightned with white.

IV. Green Melons with Indico mixt with Verde-grise and Sap-green, shaded with Sap-green and Indico ; and heightned with Masticot.

V. Cucumbers, the ends with a thin yellow, the middle with green, sweetned the one into the other, and shaded with Sap-green ; but the whole fruit with brown-oker, the specks lay with red and black to the life.

VI. Cabbage white with very thin yellow, and in some places with very thin green (or yellowish green) sweetning with very thin brown-oker mixt with Sap-green , heighten with pure white.

VII. Cabbage red, lay with purple, shade with Lakmus, and heighten with purple mixt with white.

C H A P. XLV.

How to Colour Fruits.

I. **C**Herries, with Vermilion and some Brazil, shade with Lake, heighten with Vermilion mixt with white.

II. Heart Cherries in the middle with Vermilion and Lake mixt with white, the Circumference remaining whitish, here and there sweetning them with Lake , and heightning with white, or mixt with a little Lake.

III. A Pear with Masticot, shaded sweetly with brown-oker ; its blush with Lake not too high, heighten with white.

IV. Apples with a thin Masticot mixt with Verdigrise, shade them with brown-oker, and give their blush with a thin or deep Lake (resembling Nature) and heighten with white: if you will have them very high, mix your white with some Masticot, but this must be according to the condition of the Fruit whether ripe or unripe, red, yellow or green, &c.

V. Mulberries with a very strong Brazil, and then lay'd over with black, so that between the stalks and berries they may look a little reddish according to Nature.

VI. Strawberries with a white ground, which draw over with Vermilion and Lake very thin; shade it with fine Lake, and heighten with Masticot mixt with Minium; and then with white only speck them with Lake, by one side of which put a smaller speck of white.

VII. Wall-nuts with their green on, with Verdigrise mixt with Sap-green, shade with Sap-green and a little white.

VIII. Wall-nuts without their green, with brown-oker, shaded with foot.

IX. Blew Plums with purple, shadowed with Bice, and about the stalks with a little green, well sweetned; heighten with purple and white.

X. White Plums and Peaches with thin Masticot, shaded with brown-oker; give them a blush with Lake, and heighten them with white.

XI. Red and Blew Grapes with purple, shaded with blew, and heightned with white.

XII. White Grapes with thin Verdigrise (called also *Spanish* green) mixt with Masticot, shadow with thin Verdigrise; and heighten with Masticot mixt with white.

C H A P. XLVI.

Of the Limning of Fowls.

I. **T**He Eagle with black and brown-oker, shadow it with black, the feathers heighten with brown-oker mixt with white : the bill and claws lay with Saffron, and shade it with foot or Lamp-black : the eyes with Vermilion heightned with Masticot, or with Saffron shaded or deepned with Vermilion; let the talons be done with black.

II. The Swan with white mixt with a little black, heighten it with fine and pure white, so that its plumes or feathers by that heightening may look well : the legs with a black colour : the bill with Vermilion, shaded with Lake : the eyes yellow with a black round in the middle; from which falls a blackish vein, descending to the bill.

III. The Goose with more white than black, *viz.* a light gray, heighten it with a gray white ; the legs with black : the bill like the Swan,

IV. The Duck with a light grey, the head with a dark blew, and dark green neck sweetly enterwoven, the belly with white, the legs with black mixt with a little white, &c. but be sure to imitate the life.

V. The Turkey with black mixt with a little white, from the back towards the belly whiter by degrees, but the belly speck with black, and in like manner the wings : let him be shaded with black, the wings with Indico, shaded with stronger Indico, the bill with black, the eyes blew, heightned with white. He being angry, the naked skin of his neck will be blood red, which lay with Vermilion mixt
with

with Lake, shaded with Lake: but otherwise lay it of a whitish blew colour.

VI. The Griffon with Saffron, shadowed with brown-oker or foot.

VII. The Pheasant with grey, made of white and black, the feathers of a white grey, the whole must be shaded with black, and heightened with pure white; the eyes like the Falcon, the legs with Pink, and shaded with black.

VIII. The Falcon with brown oker, and black mixt with white, and shadowed with black, the feathers must be pleasantly drawn with black, and sprinkled upon its breasts; heighten it with white, let his talons be black, above the eyes lay with Saffron, and shade with Vermilion, the bill with grey.

IX. The Stork with grey, heightned with white, and the corners of his wings (near one half) with black, his long bill and legs with Vermilion, shaded with Lake.

X. The Owl with Ceruse, black and foot, shadowed with foot, and heightened with yellow-Oker and white, sometimes white alone, the eyes yellow, circled with white, the legs of a brown yellow.

C H A P. XLVII.

Of Limning of Beasts.

I. **S**Heep with a thin white, shaded with Indico and foot, and heightened with white.

II. Hogs with brown-oker, shaded with foot, and heightened with Masticot: you may as you see occasion colour the hair here and there with stronger brown-oker;

oker; his eyes with Vermilion, which heighten with Masticot, his mouth with Indico, or white and black, shaded with black.

III. A Bear with brown-oker, red-oker, and black mixt; shadow with foot alone, or mixt with black, and heighten with brown oker and white.

IV. A Woolf with brown-oker and foot, shadow with more foot.

V. A gray Woolf with black, white, and brown-oker, shaded with black and foot, or black only; the mouth with black and red-oker, shaded with black and foot heightned with red-oker and white.

VI. The Elephant (which is of a Mouse gray) with black and white mixt with foot, and shaded with black and foot, and heightned with the same, with a little more white; the nose at the end of his trunk, inwardly must be laid with Vermilion and Cerase, shadowed with black, or black mixt with Lake: in the same manner the inner part of the ears, the eyes with white tending to a grey.

VII. Mice are coloured as the Elephant: Rats a little browner.

VIII. The Unicorn with a pure white, shaded with black: the chaps red, the eye and hoofs with a thin black.

IX. The Hart with brown-oker, shaded on the back with foot, which sweetly drive towards the belly, and shade over again with a stronger foot; the neck and belly with white, the mouth and ears a little reddish, the hoof black, the horns with foot, and shaded with foot mixt with black.

X. The Hind with the same colours as the Hart, but thinner, and higher, not so brown.

XI. The Coney with black and white, his belly all white, sweetned with black; and heightned with a stronger white.

XII. The

XII. The Hare with brown-oker, his belly below a little whitish; shade it on the back with soot, and heighten on the belly with white.

XIII. Apes, Monkeys and the like, with Pink and black, heightned with Masticot and white; the face lay with a thin black mixt with soot, shaded with black and Pink mixt with a little red-oker.

XIV. Cats if gray and brownish, or tabby, with Indico, blew and white, heightned with pure white, and shaded with Indian-blew and black mixt: In other colours use your discretion.

XV. The Ass with black mixt with white like grey; if the Ass be of a mingled brown, black and white mixt with brown-oker, shaded with black in the mouth; heighten with white.

XVI. The Leopard with brown-oker and red-oker mixt with black, shadow it with soot, the spots with red-oker and black, the mouth with black and white: heighten him with light oker.

XVII. Horses, Dogs, Oxen and such like, if white, with white mixt with a little soot, or oker, shaded with a black and white, and heightned with perfect white.

XVIII. If of a Chestnut-brown, with red-oker and black, shaded with black and soot, and heightned with red-oker and white.

XIX. If an Ash-grey, with black mixt with white, shaded with black, and heightned with white.

XX. If black, with a thin black, shaded with a stronger black, and heightned with black and white.

XXI. A bay Horse with Vermilion and brown-oker; or only with red-chalk, shaded with red-oker, and heightned with red-chalk mixt with white.

XXII. If spotted, by mixture of the aforesaid colours, and discreetly putting every one in its proper apartment or place.

C H A P. XLVIII.

Of the Limning of Serpents.

I. **T**He Serpents on the back with Bice, and downwards towards the belly with a pale black, the back speckled with black; the belly shaded with red, sprinkled also with black specks.

II. The Adder with red-lead, Vermilion and Saffron, with blew in the back. and on the belly below Masticot and white, speckled all over with black spots.

III. The Crocodile with a dark thin green, from the back down-wards to the belly; below the belly with Masticot, so that the yellow and green may melt, or vanish away into one another; shadow him with Indico and smalt, and heighten the belly with Masticot and white: the mouth before and within redish, the scales black, the claws of blackish green, the nails wholly black.

IV. The Frog with a fair green, speckled with black, and towards the belly with green mixt with Masticot, sweetned with green speckled: the eyes with Saffron, and black round them, the back heightned with Saffron.

C H A P. XLIX.

Of Limning Waters and Fish.

I. **W**ater at a distance with white and Indico, shaded with Indico mixt with Bice, and heightned with white: if near the Horizon much like the Sky.

II. Wa-

II. Waters near lay with stronger Indico, heighten and shadow with the same mixt with Bice : lastly heighten with pure white.

III. Waters nearer with stronger Indico, shaded and heightned as before.

IV. Waters in fields overgrown, with Pink and the like ; always imitating Nature.

V. Fish in green Waters, with indico mixt with *Ferench*-berry-yellow, shaded with a thin Indian blew, and heightned with pure white.

But Fishes ought also to be done according to their Nature and Colour, for some are yellow, some brown, some speckled, some gristed, some black, &c. in all which to conserve in Figure the true Idea, you ought to take directions only by the life.

Libri Secundi F I N I S.

POLYGRA

POLYGRAPHICES

LIBER TERTIUS.

Of Painting, Washing, Colouring, Dying, Varnishing, and Gilding.

Containing the Description and Use of all the chief Instruments and Materials, and the way and manner of Working.

The Dying of Cloath, Silks, Horns, Bones, Woods, Glafs, Stones, and Metals: Together with the Gilding and Varnishing thereof, according to any purpose or intent.

CHAP. I.

Of Painting in General.

I. **T**HE Art of *Painting* (which is the imitation of Nature) consists in three things, to wit, *Design*, *Proportion*, and *Colour*: all which are exprest in three sorts of *Painting*, viz. *Landskip*, *History*, and *Life*.

II. *Land-*

II. *Landskip* or Perspective, wonderfully respects freedom and liberty, to draw even what you please. *History* respects proportion and figure: *Life* respects colour: In each of which there is a necessary dependency of all the other.

III. The work of the Painter is to express the exact imitation of natural things; wherein you are to observe the excellencies and beauties of the piece, but to refuse its vices.

For a piece of Painting may in some part want Diligence, Boldness, Subtilty, Grace, Magnificence, &c. while it is sufficiently in other parts excellent; and therefore you are not so much to imitate Ornaments, as to express the inward power and strength.

IV. In *Imitation*, always be sure to follow the examples and patterns of the best masters; lest evil precedents beget in you an evil habit.

V. The force of *Imitation* resides in the fancy or imagination, where we conceive (what we have seen) the form or *Idea* of that, or those things which we would represent in lines and colours.

VI. This *Fancy* or *Imagination* is strengthened, by lodging therein all variety of visible rarities; as 1. Forms made by light and darkness; such as are to be seen in Summer in the clouds, near Sun-setting (which vanish before they can be imitated:) 2. Forms made by proximity or distance of place, such as are Trees, Woods, Buildings, appearing perfect being near, or confused in their parts being far off: 3. Forms of dreams, of which (whether sleeping or waking) the fancy must be fully possess'd.

VII. Where *Design* is required; you must fancy every circumstance of the matter in hand, that in an instant, with a nimble hand, you may depict the same with liveliness and grace.

Slow performance causes a perturbation in the fancy, cooling of the mind, and destruction of that passion which should carry the work on: but quickness and diligence brings forth things even excellent indeed: Care, Industry and Exercise are the props, supporters and upholders of Art.

VIII Be sure you dwell not too long upon designing: alter not what is well, lest for want of exquisite judgment you make it worse: and if in designing, you want that ability to follow the quickness of fancy, submit to a willing negligence; a careless operation adds sometimes such a singular grace, as by too much curiosity would have been totally lost; then by reviewing what is done, *make a regular connexion of all the Idea's conceived in your mind.*

IX. With *Apelles* amend those things which others justly find fault with; the reprehensions of an Artist are as demonstrative rules of experience; and weigh every ones opinion for the advancement of Art.

X. Lastly, be sure your piece be of a good *Design, History or Life*; that the parts be well *disposed*, the Characters of Persons, *proper*; the Forni *magnificent*, the colour *lively*, and the spirit *bold*: that it may appear to be the work of a nimble fancy, ready memory clear judgment, and large experience.

CHAP. II.

Of Painting in Oyl, and the Materials thereof.

I. **P**ainting in Oyl is nothing but the Work or Art of Limning performed with colours made up or mixed with Oyl.

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II. The

II. The Materials of Painting are chiefly Seven,

1. *The Easel.*
2. *The Pallet.*
3. *The Streining Frame.*
4. *The Primed Cloath.*
5. *Pencils.*
6. *The Stay.*
7. *Colours.*

III. *The Easel* is a Frame made of wood (much like a Ladder) with sides flat, and full of holes, to put in two pins to set your work upon higher or lower at pleasure; something broader at bottom than at the top: on the backside whereof is a stay, by which you may set the *Easel* more upright or sloping.

IV. *The Pallet* is a thin piece of wood, (Pear-tree or Walnut) a foot long, and about ten inches broad, almost like an Egg, at the narrowest end of which is made an hole to put in the thumb of the left hand, near to which is cut a notch, that so you may hold the *Pallet* in your hand. *Its use is to hold and temper the Colours upon.*

V. *The Streining Frame* is made of wood, to which with nails is fastned the *Primed Cloath*, which is to be Painted upon.

These ought to be of several sizes according to the bigness of the Cloath.

VI. *The Primed Cloath* is that which is to be Painted upon: and is thus prepared.

Take good Canvas and smooth it over with a slick-stone, size it over with size, and a little honey, and let it dry; then white it over once with whiting and size mixed with a little hony, so is the Cloath prepared, on which you may draw the Picture with a Coal; and lastly lay on the Colours.

Where note, honey keeps it from cracking, peeling or breaking out.

VII. *Pencils* are of all bignesses, from a pin to the bigness of a finger, called by several names, as *Ducks-quill fitched and pointed*; *Goose-quill fitched and pointed*;

Swans-

Swans-quill fitted and pointed; Jewelling pencils, and bristle pencils: some in quills, some in Tin cases, and some in sticks.

VIII. The *Stay* or *Molstick*, is a Brazil stick (or the like) of a yard long; having at the one end thereof, a little ball of Cotten, fixed hard in a piece of Leather, of the bigness of a Chestnut; which when you are at work you must hold in your left hand; and laying the end which hath the Leather ball upon the cloath or Frame, you may rest your right arm upon it, whilst you are at work.

IX. The Colours are in number seven (*ut supra*) to wit, White, Black, Red, Green, Yellow, Blew, and Brown.

Of which some may be tempered on the Pallet at first, some must be ground, and then tempered; and other some must be burnt, ground, and lastly tempered.

X. To make the Size for the Primed cloath at the sixth Section of this Chapter.

Take Glem, and boil it well in fair water, till it be dissolved, and it is done.

XI. To make the Whiting for the sixth Section of this Chapter.

Take of the aforesaid Size, mix it with whiting ground, and so white your boards or cloath (being made smooth) dry them, and white them a second or third time; lastly, scrape them smooth, and draw it over with White-lead tempered with Oyl.

XII. To keep the Colours from skinning.

Oyl Colours (if not presently used) will have a skin grow over them, to prevent which put them into a glass, and put the glass three or four inches under water, so will they neither skin nor dry.

XIII. To cleanse the Grinding stone and Pencils.

If the Grinding stone be foul, grind Curriers shavings upon it, and then crumbs of bread, so will the filth come off: if the pencils be foul, dip the ends of them in oyl of Turpentine, and squeeze them between your fingers, and they will be very clean.

C H A P. III.

Of the Colours in General, and their significations.

I. **T**He chief *Whites* for Painting in Oyl are, White-lead, Ceruse and Spodium.

II. The chief *Blacks* are Lamp-black, Seacoal-black, Ivory-black, Charcoal, and Earth of Colen

III. The chief *Reds* are, Vermilion, Cinnaber Lake, Red-lead, Indian Red, Ornotto.

IV. The chief *Greens* are, Verdigrise, Terra-vert, Verditer.

V. The chief *Yellows* are, Pink, Masticot, English Oker, Spruce Oker, Orpiment.

The chief *Blews* are, Blew Bice, Indico, Ultramarine, Smalt.

VII. The chief *Browns* are Spanish-brown, burnt Spruce, Umber.

VIII. These Colours, Lamp-black, Verditer, Vermilion, Bice, Smalt, Masticot, Orpiment, Ultramarine, are not to be ground at all, but only tempered with oyl upon the Pallet.

IX. These Colours, Ivory, Ceruse, Oker and Umber are to be burnt, and then ground with oyl.

X. All the rest are to be ground upon the Grinding stone with Linseed oyl (except White-lead, when it is to be used for Linnen, which then is to be ground with

with oyl of Walnuts, for Linseed oyl will make it turn yellow.

And now since we are engaged to treat of colours, it may neither be unnecessary, nor unuseful for the young Artist to know their natural significations; which take as followeth.

XI. *Blew* signifieth truth, faith, and continued affections; *Azure*, Constancy; *Violet*, a religious mind.

XII. *Orange tawny* signifies Pride, also integrity; *Tawny*, forsaken; *Limmon*, jealousy.

XIII. *Green* signifies hopes: *Grass-green*, youth, youthfulness, and rejoycing: *Sea-green*, Inconstancy.

XIV. *Red* signifies Justice, Vertue and Defence: *Flame-colour*, Beauty and Desire: *Maidens-blush*, Envy.

XV. *Yellow* signifies Jealousie: perfect yellow, Joy, Honour, and greatness of Spirit: *Gold-colour*, Avarice.

XVI. *Flesh-colour* signifieth Lasciviousness: *Carnation*, Craft, Subtilty and Deceit: *Purple*, Fortitude and Strength.

XVII. *Willow-colour* signifieth forsaken: *Poppingjay-green*, Wantonness: *Peach-colour*, Love.

XVIII. *White* signifieth Death: *Milk-white*, Innocency, Purity, Truth, Integrity: *Black*, Wisdom, Sobriety, and Mourning.

XIX. *Straw-colour* signifieth Plenty: *Rust of Iron*, Witheredness; *Ermine* Religion and Holiness.

XX. *The White, Black, Red, and Green, are Colours held sacred in the Church of Rome: White* is worn in the Festivals of Virgins, Saints, Confessors and Angels, to show their Innocency: *Red* in the Solemnities of the Apostles and Martyrs of Jesus: *Black* in Lent and other Fasting days: *Green* is worn between the *Epiphany* and *Septuagesima*: and between *Pentecost* and *Advent*.

C H A P. IV.

Of the fitting of Colours for Painting.

I. **U**Pon the Pallet dispose the several colours, at a convenient distance, that they may not intermix: first lay on the Vermilion, then the Lake, then the burnt Oker, then the Indian Red, Pink, Umber, Black and Smalt, each in their order, and lay the White next to your thumb, because it is oftneft used, for with it all shadows are to be lightned; and next the White a stiff sort of Lake; thus is the Pallet furnished with single colours for a face.

Now to temper them for shadowing various complexions do thus.

II. For a fair complexion.

Take White one dram, Vermilion, Lake, of each two drams, temper them, and lay them aside for the deepest Carnation of the face: to part of the aforesaid mixture put a little more white, for a light Carnation; and to part of that put more white (which temper on the Pallet) for the lightest colour of the face.

III. The faint shadows for the fair Complexion.

Take Smalt, and a little white, for the eyes; to part of that add a little Pink, and temper by it self for faint greenish shadows in the face.

IV. The deep shadows for the same.

The Cinnaber Lake, Pink, and black, of each, which temper together; if the shadows ought to be redder than what is tempered, add more Lake; if yellower, add more Pink; if blewer or grayer, add more black: thus shall the Pallet be fitted with colours.

V. For

V. For a brown or swarthy complexion.

The single colour being laid on the Pallet as before, and tempered; to the white, Lake and Vermilion, put a little burnt Oker for a Tawny; and for heightning add some Yellow Oker, so much as may just change the colours. The faint and deep shadows are the same at the third and fourth Section of this Chapter.

VI. For a Tawny complexion.

The colours are the same with the former, but the shadows are different; which must be made of burnt Oker and Umber, (which will fit well:) if the shadow be not yellow enough, add a little Pink to it.

VII. For a black complexion.

The dark shadows are the same with the former: but for heightning take White, Black, Lake, and burnt Oker; in tempering of which put in the white by degrees, till you come to the lightest of all. Where note that the single colours at first laid upon the Pallet and tempered, serve for shadows for all complexions; and that all deepnings ought to be with black, Lake and Pink tempered together.

C H A P. V.

Of Colours for Velvet.

I. **F**OR *black Velvet.* Take Lamp-black and Verdigrise for the first ground; that being dry, take Ivory-black, and Verdigrise, shadow it with White-lead mixt with Lamp-black.

II. *For Green.* Take Lamp-black and White-lead, and work it like a Ruffet Velvet, and let it dry; then draw it over with Verdigrise tempered with a little Pink.

III. *For Sea-green.* Take only Verdigrise, and lay it over Russet: If a *Grass-green*, put a little Masticot to it; shadow these greens with Russet, which lay according to the deepness of the green.

IV. *For Red.* Take Vermilion, and shadow it with Spanish-brown; and where you would have it darkest, shadow with Seacoal-black and Spanish-brown with the aforesaid colours, dry it, and then gloss it over with Lake.

V. *For Crimson or Carnation.* Take Vermilion, to which add White-lead at pleasure.

VI. *For Blew.* Take Smalt tempered alone.

VII. *For Yellow.* Take Masticot and yellow Oker, and where you would have it darkest, shadow it with Umber.

VIII. *For Tawny.* Take Spanish-brown, White-lead, and Lamp-black, with a little Verdigrise, to shadow where need is: when dry, gloss it over with Lake and a little Red-lead.

IX. *For hair colour.* Take Umber ground alone; and where it should be brightest, mix some White-lead about the folds, lighten or darken with White-lead and Umber.

X. *For Ash-colour.* Take Charcoal, black and White-lead; lighten with White-lead: a colour like to a dark Russet will be an Ash colour.

XI. *For Purple.* Take Smalt and Lake, of each alike, temper them (light or deep as you please) with white-lead.

XII. *Lastly note*, that in painting Velvet you must at first work it somewhat sad, and then give it a sudden brightness.

C H A P. VI.

Of Colours for Sattins.

I. **F**OR *Black*. Take Lamp-black ground with Oyl, and tempered with white-lead; and where you would have it shine most, mix Lake with the white-lead.

II. *For Green*. Take Verdigrise ground alone and mixed with white-lead; adding Pink where you would have it brightest: to the deepest shadows add more Verdigrise.

III. *For Yellow*. Take Masticot, yellow Oker and Umber (ground each by themselves) where it should be brightest use Masticot alone; where a light shadow, use Oker, where darkest use Umber.

IV. *For Purple*. Take Smalt alone, and where it should be brightest use white-lead.

V. *For Red*. Take Spanish-brown (ground alone) mix it with Vermilion, and where it should be brightest mix white-lead with the Vermilion.

VI. *For White*. Take White-lead (ground alone) and Ivory-black, which temper light or dark.

VII. *For blew*. Temper Smalt and White-lead: where it should be saddest, use Smalt; where lightest, White-lead.

VIII. *For Orange colour*. Take Red-lead and Lakes; where brightest, Red-lead, where saddest, Lake.

IX. *For Hair Colour*. Temper Umber and White-lead; where it should be brightest, put more White-lead, and where the greatest shadow, use Seacoal-black mixed with Umber.

C H A P. VII.

Of Colours for Taffaty, Cloth and Leather.

I. **T**affaties are Painted much as Sattins, thus : Take such colours as are fit for the purpose, and lay them one by another upon the work, and shadow them with others.

II. *Cloth* is the same work with Sattin, save, you must not give to Cloth so sudden a shining gloss.

III. *Cloth of Gold* is made of brown Oker and liquid Gold ; water and heighten upon the same with small gold stroaks.

IV. *For Buff*, mix yellow Oker and White-lead ; and where it should be dark by degrees, mix it with a little Umber ; when you have done, size it over with Umber and Seacoal-black.

V. *For yellow Leather*, take Masticot and yellow Oker, shadow it with Umber.

VI. *For black Leather*, take Lamp-black, and shadow it with White-lead.

VII. *For white Leather*, take White-lead, and shadow it with Ivory-black.

C H A P. VIII.

Of Colours for Garments in general.

I. **F**OR Black. Let the dead colour be Lamp-black and Verdigrise : being dry, go over with Ivory-black and Verdigrise ; but before the second going over, heighten it with white.

II. *For*

II. *For Hair Colour.* Take Umber and White for the ground; Umber and black for the deeper shadows; Umber and English Oker for the meaner shadows; white and English Oker for heightening.

III. *For Blew.* Take Indico and White: first lay the White, then the Indico and White mixed; then deepen it with Indico, and when dry, glaze it with Ultramarine which will never fade.

Smalt will turn black, and Bice will turn green.

IV. *For Purple.* Take Smalt tempered with Lake and White-lead; then heighten with White-lead.

V. *For a sad Red.* Take Indian Red heightened with White.

VI. *For a light Red.* Take Vermilion, glaze it over with Lake, and heighten it with White.

VII. *For a Scarlet.* Take Vermilion and deepen it with Lake, or Indian Red.

VIII. *For Green.* Take Bice and Pink, heighten it with Masticot, and deepen with Indico and Pink.

IX. *For yellow.* Take Masticot, yellow Oker, Umber; lay Masticot and white in the lightest places; Oker and White in the mean places, and Umber in the darkest, glaze it with Pink.

X. *For Orange Colour.* Lay the lightest parts with Red-lead and white, the mean parts with Red-lead alone; the deeper parts with Lake, and if need is, heighten it with white.

XI. *For a sad Green.* Mix Indico with Pink: *for a light Green* mix Pink and Masticot: *for a Grass-green* mix Verdigrise and Pink.

XII. Remember always to lay yellows, blews, reds and greens, upon a white ground, for that only giveth them life.

 C H A P. IX.

Colours for Metals and precious Stones.

I. **F**OR Iron. Take Lamp-black and White-lead; if you would have it rusty, take Seacoal-black, and mix it with a little white.

II. *For Silver.* Take Charcoal-black and White-lead; where you would have it darkest, use more Charcoal: work Silver somewhat rustish, and give it a sudden gloss with White-lead only.

III. *For Gold.* Take Lake, Umber, Red-lead, Masticot; lay the ground with Red-lead, and a little dry Pink: where you would have it darkest, shadow it most with Umber, where lightest with Masticot

Note, in grinding Red-lead for the Gold size, put in a little Verdigrise to make it dry sooner.

IV. *For Pearls.* Temper Charcoal-black with white-lead, till it be a perfect russet; then make the Pearl with it, and give it a speck of White-lead only to make it shine.

Where note, that Ceruse tempered with Oyl of white Poppy is excellent to heighten up Pearls.

V. *For precious Stones.* For Rubies, &c. lay their counterfeit grounds with transparent colours; and Lake, Verdigrise and Verditer give them a shining colour.

C H A P.

C H A P. X.

Of Colours for Landskip.

I. **F**OR a light Green, use Pink and Masticot heightned with white: for a sad Green, Indico and Pink heightned with Masticot.

II. For some Trees, take Lake, Umber and White, for others Charcoal and white, for others Umber, black and white, with some green; adding sometimes Lake or Vermilion, with other colours.

III. For Wood, take Lake, Umber and white, mixing sometimes a little green withal.

IV. For Fire, lay Red-lead and Vermilion tempered together where it is reddest: where it is blew, lay oyl, Smalt, and white-lead: where it is yellow, take Masticot, and work it over in certain places; where you would have it shine most, with Vermilion.

V. For an Azure Skie, which seems a far off, take Oyl, Smalt, or Bice, and temper them with Linseed-byl. But grind them not: for Smalt or Bice utterly lose their colour in grinding.

VI. For a Red Skie, take Lake and white; and for Sun-beams, or yellow clouds at Sun-rising or setting, take Masticot and white.

VII. For a Night Skie, or clouds in a storm, take Indico deepned with black, and heightned with white.

VIII. For Wood Colours, they are compounded either of Umber and white, Charcoal and white, Seacoal and white, Umber black and white; or with some green added: to which you may adjoin sometimes, as in barks of Trees, a little Lake or Vermilion.

IX. Lastly

IX. Lastly for the practical performing of the work have recourse to the rules delivered in *chap. 13. lib. I.* and *chap. 27. lib. II.*

C H A P. XI.

Of the Painting of the Face.

I. **H**Ave your necessary pencils in readiness, as two pencils ducks quill fitched; and two ducks quill pointed; two Goose quill fitched, and two pointed: two bristles both alike; one Swans quill fitched, and one pointed; one larger pencil in a Tin case fitched; and a bristle of the same Bigness, every one having a stick of about nine inches long put into the quill thereof, the farther end of which stick must be cut to a point.

II. The *pencils* in a readiness in your left hand, with the *pallet* upon your thumb, prepared with fit colours, and your *molstick* to rest upon; you must work according to the directions following.

III. The *cloth* being pinned, and strained upon the Frame, take a knife, and with the edge thereof scrape over the cloth, lest knots or the like should trouble it.

IV. Then set the *Frame* and *cloth* upon the *Easel*, at a convenient heighth, that sitting on a stool (even with the party you draw) you may have the face of the Picture equal, or something higher than your own: set the *Easel* to the light (as in Limning we have taught) letting it come in upon your left hand, casting the light towards the right.

V. Let the Person to be drawn, sit before you in the posture he intends to be painted in, about two yards distant from you.

VI. Then

VI. Then with a piece of painted chalk draw the proportion of the face upon the cloth, with the place of the eyes, nose, mouth, ears, hair, and other postures.

Here is no difficulty in this, if you miss much, the colours will bring all to rights again.

VII. Then take a pencil, Swans quill pointed, and begin to paint some of the lightest parts of the face with the lightest colour, (as the heightning of the fore-head, nose, cheek-bone of the lightest side :) the mean parts next (as the cheek-bone of the dark-side, chin, and over the upper lip :) proceeding gradually till you come to the reddest parts of all.

VIII. Lay faint greenish shadows in convenient places, and where it is necessary to soften harsher shadows, but take heed of putting green where red should be.

IX. The faint or light parts thus done, take one of the Goose quill pointed, or Ducks quill fitch, and begin at the eyes to shadow with Lake, going over the nose, mouth, compass of the ear, &c. before you lay on any colour, wiping it lightly over with a linnen rag, to prevent the overcoming of the other colours.

X. The colours both light and dark being put in, take a great fitch pencil; and sweeten the colours therewith, by going over the shadows with a clean soft pencil, which being well handled will drive and intermix the colours one into another, that they will look as if they were all laid on at once, and not at divers times.

Where note that the bigger pencils you use, the sweeter and better your work will lie.

XI. At the second sitting, begin again with clean pencils, of such bigness as the work requires, and observe well the person, and see what defects you find in your work at first sitting, and amend them; then heighten

heighten or deepen the shadows as occasion requires.

XII. *Lastly*, take a Goose quill bristle, and put in the hair about the face (if there must be any) and rub in the greater hair, with the greater bristle, heightning it up with the Goose quill pencil.

C H A P. XII

Of the cleansing of any old Painting.

I. **T**AKE good wood-ashes, and searce them, or else some Smalt or powder-blew, and with a Sponge and fair water gently wash the Picture you would cleanse (taking great care of the shadows) which done, dry it very well with a clean cloth.

II. Then varnish it over again with some good varnish, but such as may be washed off again with water if need be.

We shall hereafter shew the way of making varnish of several sorts, mean season this following may serve.

III. Take either common varnish (made with Gum sandrack dissolved in Linseed-oyl by boiling) or glair of Eggs, and with your pencil go over the Picture once, twice, or more therewith as need requires.

C H A P. XIII.

Of a Picture in general.

I. **I**N every Picture there are always four principal considerations: to wit, 1. *Invention.* 2. *Proportion.* 3. *Colour:* and 4. *Life.*

II. *Inven-*

II. *Invention* must be free, and flow from a general knowledge of Antiquities, History, Poetical Fictions, Geometrical conclusions, and Optical considerations, according to its Situation or Aspect, either near or far off.

III. And this *Invention* must express proper and fit things, agreeing to the Circumstances of *Time*, *Place*, *Matter*, and *Person*; and having respect to the modes of habits belonging to the Country or People whether *Antient* or *Modern*

IV. *Proportion*, *Analogy*, or *Symmetry* (which you please) is that which limits each part to its proper bigness, in respect to the whole.

Whatsoever differs from this recedes from beauty, and may be called Deformity.

V. This *Proportion* is called by Artists the designing lines; which are first drawn before the whole is painted.

These proportions or lineal designs, draughts, and scotches, may be called Picture, which being well done, shew not only the shape, but also the intent: In lines only, we may draw the proportion of a Black-Moor, and such as shall be like him: Now this skill proceeds from the very highest principles of Art.

VI. *Colour* is that which makes the Picture resemble what we desire to imitate; by mixing of various colours together.

VII. In making any thing apparent, it is necessary to express its opposite or contrary.

So light and shadows forward, set forth Paintings outwards, as if you might take hold of them with your hand: blackness makes things seem farther off, and is used in things hollow, as Caves, Wells, &c. the more deep the more black.

VIII. Brightness exceeds light sparkling in splendor.

It is used in the Glory of Angels; twinkling of Gems, Armory, Gold and Silver vessels, fires and flames.

IX. In Painting of a man, grace each limb with its proper and lively colour; the black make sincerely black; the white pure, with redness intermixt. But to paint purely the exquisite beauty of a woman, is never to be well done (except it be by a very ingenious Artist indeed) her rare complexion being scarcely possible to be imitated with colours: *There is none really knows the exact mixture for such a Countenance.*

X. Life or Motion is that from whence action or passion doth result, which in coloured Pictures is seen with a lively force of Gesture and spirit.

To do this it is necessary that the Artist be well acquainted with the nature, manners, and behaviour of men and women, as in anger, sadness, joy, earnestness, idleness, love, envy, fear, hope, despair, &c. Every disturbance of the mind alters the Countenance into several postures.

XI. The head cast down shews humility; cast back, arrogance or scorn; hanging on the neck, languishing; stiff and sturdy, morosity of mind: the various postures of the head shew the passions; the Countenance the same; the eyes the like: and in a word, all the other parts of the body contribute something to the expression of the said passions of the mind, as is easily to be observed in the life.

In excellent pieces you may at a view read the mind of the Artist in the formality of the Story.

XII. Lastly, Be alway sure first to conceive that in your thoughts, which you would express in your work; that your endeavours being assisted by an intellectual energy, or power of operation, may at length render your productions perfect.

C H A P. XIV.

Of the Choice of Copies, or Patterns.

I. **H**E that chuseth a Pattern, ought to see 1. that it be well designed: 2. that it be well coloured.

II. In the well designing, be sure that it be true in every part; and that the proportion of the figure be just and correspond to the life.

III. If the Picture be a fiction, see that it be done boldly, not only to exceed the work (but also the possibility) of nature, as in *Centaures, Satyrs, Syrens, Flying-horses, Sea-horses, Tritons, Nereides, &c.*

Alexander ab Alexandria saith that Theodore Gaza caught one of these Nereides in Greece, and that in Zealand, another was taught to spin: these Tritons and Nereides are those which are called *Mare-maids, the Male and the Female.*

IV. Natural figures shew property, and are required to agree with the life: forced figures express novelty, and are to be beautified by exorbitancies according to the fancy of the Painter without limitation: novelty causes admiration, and admiration curiosity, a kind of delight and satisfaction to the mind.

These things are not the products of stupid brains, nor are they contained within the perimetre of clouded and dull Conceptions.

V. In the well colouring, know that in obscurity or darkness there is a kind of deepness; the sight being sweetly deceived *gradatim* in breaking the Colours, by insensible change from the more high to the more dull.

In the Rain-bow this mixture is perfect ; the variety of Colours are throughly dispers'd (like Atoms in the Sun-beams) among one another, to create its just appearance.

VI. See that the swellings of the work agree with the exactness of nature, and as the parts thereof require, without sharpness in out-lines, or flatness within the body of the piece, as also that each hollowness exactly correspond in due proportions.

VII. Lastly, View precisely the passions, as Joy, Sorrow, Love, Hatred, Fear, Hope, &c. and see that they correspond with their proper postures; for a touch of the pencil may strangely alter a passion to its just opposite or contrary, as from Mirth to Mourning, &c.

CHAP. XV.

Of the Disposing of Pictures and Paintings.

I. **A**ntique works, or *Grotesco*, may become a wall, the borders and freezes of other works; but if there be any draughts in figures of men and women to the life upon the wall, they will be best of black and white, or of one colour heightened: if they be naked, let them be as large as the place will afford; if of Marbles, Columns, Aquæducts, Arches, Ruines, Cataracts, let them be bold, high, and of large proportion.

II. Let the best pieces be placed to be seen with single lights, for so the shadows fall natural, being always fitted to answer one light; and the more under or below the light the better, especially in mens faces and large pieces.

III. Let the *Porch* or entrance into the house, be set cut with *Rustick* figures, and things rural.

IV. Let

IV. Let the *Hall* be adorned with Shepherds, Peasants, Milk-maids, Neat-herds, Flocks of Sheep and the like, in their respective places and proper attendants; as also Fowls, Fish, and the like.

V. Let the *Stair-case* be set off with some admirable monument or building, either new or ruinous, to be seen and observed at a view passing up: and let the *Ceiling* over the top-stair be put with figures foreshortned looking downwards out of Clouds, with Garlands and Cornucopia's.

VI. Let *Landskips*, Hunting, Fishing, Fowling, Histories and Antiquities be put in the *Great Chamber*.

VII. In the *Dining room* let be placed the Pictures of the King and Queen; or their Coat of Arms; forbearing to put any other Pictures of the life, as not being worthy to be their companions; unless at the lower end, two or three of the chief Nobility, as attendants of their Royal Persons: for want hereof you may put in place, some few of the nearest blood.

VIII. In the *inward or with-drawing Chambers*, put other draughts of the life, of Persons of Honour, intimate or special friends, and acquaintance, or of Artists only.

IX. In *Banqueting-rooms*, put cheerful and merry Paintings, as of *Bacchus*, *Gentaures*, *Satyrs*, *Syrens*, and the like, but forbearing all obscene Pictures.

X. Histories, grave Stories, and the best works become *Galleries*; where any one may walk, and exercise their senses, in viewing, examining, delighting, judging and censuring.

XI. In *Summer-houses* and *Stone-walks*, put Castles, Churches or some fair building: In *Tarraces*, put Boscage, and wild works. Upon *Chimney-pieces*, put only *Landskips*, for they chiefly adorn.

XII. And in the *Bed-chamber*, put your own, your Wives and Childrens Pictures; as only becoming the most private Room, and your Modesty: lest (if your Wife be a beauty) some wanton and libidinous guest should gaze too long on them, and commend the work for her sake.

XIII. In hanging of your pictures; if they hang high above reach, let them bend somewhat forward at the top; because otherwise it is observed that the visual beams of the Eye, extending to the top of the Picture, appear further off, than those at the foot.

CHAP. XVI.

Of Frescoe, or Painting of Walls.

I. **I**N Painting upon Walls, to make it endure the weather, you must grind your colours with Lime water, Milk, or Whey, mixt in size colour in pots.

II. The paste or plaister must be made of well wash'd Lime, mixt with fine powder of old rubbish stones: the Lime must be so often wash'd, till all its Salt is abstracted; and all your work must be done in clear and dry weather.

III. To make the work endure, strike into the wall stumps of headed nails, about five or six inches asunder, and by this means you may preserve the plaister from peeling.

IV. Then with this paste, plaister the wall, a pretty thickness, letting it dry: being dry, plaister it over again about the thickness of half a Barley corn, very fine and smooth, then your colours being ready prepared work this last plaistering over, whilst it is wet, so will your Painting unite and joyn fast to the plaister, and dry together as a perfect compost.

V. In

V. In Painting be nimble and free, let your work be bold and strong, but be sure to be exact, for there can be no alteration after the first painting; and therefore heighten your paint enough at first, you may deepen at pleasure.

VI. All earthy colours are best, as the Okers, Spanish-white, Spanish-brown, Terræ-vert, and the like: mineral colours are naught.

VII. Lastly, let your pencils and brushes be long and soft, otherwise your work will not be smooth; let your colours be full, and flow freely from the pencil or brush; and let your design be perfect at first, for in this, there is no after alteration to be made.

C H A P. XVII.

Of Colours for Painting Glass.

I. **Y***ellow.* Take a very thin piece of pure fine Silver, and dip it into melted Brimstone; take it out with a pair of plyers, and light it in the fire, holding it till it leaves burning; then beat it to powder in a brasen Mortar; then grind it with Gum-Arabbick water, and a little yellow Oker.

II. *Yellow.* Take fine Silver one Drachm, Antimony in powder two Drachms, put them in a hot fire, in a Crucible for half an hour, and then cast it into a Brass mortar, and beat it into powder, to which add yellow Oker six Drachms, old earth of rusty Iron seven Drachms, grind all well together.

This is fairer than the former.

III. *White.* This is the colour of the glass it self: you may diaper upon it with other glass or Crystal ground to powder.

IV. *Black.* Take Jet and Scales of Iron, and with a wet feather take up the Scales that fly from the Iron, after the Smith hath taken his heat, grind them with Gum-water.

V. *Black.* Take Iron scales, Copper scales, of each one Drachm, heat them red hot in a clean fire shovel; then take Jet half a Drachm, first grind them small, and temper them with Gum-water.

VI. *Red.* Take *Sanguis Draconis* in powder, put to it rectified spirit of Wine; cover it close a little while, and it will grow tender; wring it out into a pot, that the dross may remain in the cloth; the clear preserve for use. This is a fair red.

VII. *Carnation.* Take Tin-Glass one ounce, Jet three ounces, Red-oker five ounces, gum two drachms, grind them together. It is a fair Carnation.

VIII. *Carnation.* Take Jet four drachms, Tin-glass or Litharge of Silver two drachms; gum and scales of Iron of each one drachm, red chalk one ounce, grind them.

IX. *Green.* Take Verdigrise and grind it well with Turpentine, and put it into a pot; warming it at the fire when you use it.

X. *Blew.* Provide the clearest Lead you can get of that colour, beat them to powder in a brazen mortar, take Goldsmiths Amel of the same colour, clear and transparent, grind each by it self, take two parts of Lead, and one of Amel, grind them together as you did the Silver. *The same understand of Red and Green.*

C H A P. XVIII.

Of the way of Painting upon Glass.

I. **T**Here are two manner of ways of painting upon glass; the one is for oyl colour, the other for such colours as are afterwards to be annealed or burnt on.

II. To lay oyl colours upon glass, you must first grind them with gum-water once, and afterwards temper it with Spanish Turpentine, lay it on and let it dry by the fire, and it is finished.

III. To anneal or burn your glass, to make the colours abide, you must make a four square brick Furnace, eighteen inches broad and deep; lay five or six cross Iron bars on the top of it, and raise the Furnace eighteen inches above the bars: then laying a plate of Iron over the bars, sift (through a sieve) a lay of slack'd Lime over the plate, upon which lay a row of glass, upon that a bed of Lime, and upon that Lime, another row of glass; thus continue *stratum super stratum*, till the Furnace is full.

IV. Lay also with every bed of glass a piece of glass, which you may wipe over with any colour (these are called watches) and when you think your glass is burnt enough, with a pair of plyers take out the first and lowest watch, and lay it on a board, and being cold, try if you can scrape off the colour, if it hold fast on, take out that row; always letting it abide the fire, till the colour will not scrape off.

C H A P. XIX.

Of Washing, and the Materials thereof.

I. **B**Y washing here we intend nothing else, but either to set our Maps or Printed Pictures in proper Colours, or else to varnish them.

II. The Instruments and Materials of washing are chiefly six: to wit, 1. *Alum-water.* 2. *Size, or Gum-water.* 3. *Liquid Gold.* 4. *Pencils.* 5. *Colours.* 6. *Varnish.*

III. *To make Alum-water.* Take Alum eight ounces, fair water a quart, boil them till the Alum is dissolved.

Or thus, Take Spring or Well-warer, a Gallon: Roch Alum a pound; beat it to powder, and dissolve it in the water by boyling: filter it through a brown paper, and keep it for use. With this water, if you wet your paper before you lay on your colours, it will keep them from sinking in, and with-all, add a Lustre and Beauty to the colours laid on. But this you must note, that if your paper is not good, you must wash it over four or five times, which may be done with a large Pencil brush. Moreover, Alum generally raiseth staining colours, and preserves them from fading.

IV. *To make Size.* Take glew, which steep all night in water, then melt it over the fire, to see that it be neither too strong nor too weak: then let a little of it cool; if it be too stiff when it is cold, put more water to it, if too weak more glew, using it luke-warm.

V. *To make Gum-water.*

Take pure Spring-water a quart, put it into a Jar glass; and hang therein a sufficient quantity of pure white

white and clear Gum-Arabick, bruised and tyed up in a rag: let it hang till the Gum is all dissolved. Then put your fingers into the water, and if you find them to stick together as if they were glewed, your water is too stiff, or full of the Gum, which you must remedy by putting thereto more fair water; and if you find it too weak, you may help it by adding more Gum. With this water, or the former size, most colours are to be tempered, and with so much of the said Gum-water, which being toucht when dry, the colour will not come off: where note, that if the colour glister, there is too much Gum in it.

VI. *Liquid Gold*, It is exactly made by the first Section of the 21 Chapter of the second Book.

VII. *Pencils* are to be of all sorts both fitch'd and pointed, as also a large pencil brush to paste Maps upon Cloth; another to wet the paper with Alom water; a third to starch the face of the Picture withal before it be coloured: and a fourth to varnish withal.

VIII. The colours are the same with those which we mentioned in *Chap. 17. lib. 2.* to which add, 1. *Of Black*, Printers black, *Frank-ford* black. 2. *Of Red*, Vermilion, Rosset. 3. *Of Blew*, Verditure, Litmose Flory. 4. *Of Yellow*, Cambogia, Yellow-berries, Orpiment. 5. *Of Red Brazil*, Logwood (ground) and Turnsole, Cochenele, Madder.

IX. But by reason all those colours are not of use for staining or washing of Maps, Pictures, Globes, &c. Artists have selected out the most proper which are as follows. 1. *Red*, Brasil, Turnsole, Indian Lake, Cochenele, Indian Cakes, Rosset, Cinnabar, Vermilion, Red-lead. 2. *Yellows*, Aloes, Cambogia, Yellow-berries, Saffron, Masticot, Orpiment. 3. *Blews*, Litmose, Logwood, Indico, Verditer, Blew Bice, Smalt,

Smalt, Ultramarine. 4. *Greens*, Verdigrise, Sap-green, Verditer, Green Bice. 5. *Whites*, Flake White, Spanish White. 6. *Browns*, Wood-foot, Rinds of Green Walnuts, Walnut-tree Leaves, Spanish Brown, Umber, Iron Rust. 7. *Blacks*, common Ink, Printers Black, Lamp-black, Ivory Black, Hartshorn Black.

X. Of these Colours, 1. *Some are to be burnt*, as Spanish Brown, Umber, Printers Black, Lamp-black, Ivory Black- Hartshorn Black, which are afterwards to be ground. 2. *Some are to be ground*, as Vermilion, Cinnabar, Indian Lake, Indico, White-lead, Spanish White, Masticot. 3. *Some are to be washed*, as, Rosset, Red-lead, Bice, Verditer, Orpiment, Spanish Brown. 4. *Some are to be steeped*, as, Aloes, Cambogia, Yellow-berries, Sap-Green, Verdigrise, Indian Cakes, Saffron, Wood-foot. 5. *Some are to be boyled*, as, Brasil, Logwood, Turnsole, Green Walnut Rinds, Wood-foot. *How these Operations are to be performed we have taught at large in lib. 2. cap. 22. sect. 5, 6, 7. and 11. to which I refer you.*

C H A P. XX.

Of Colours simple for Washing of Maps, &c.

I. **A** *Loes*, Let it be dissolved in a weak Gum water; it makes a deep or sad kind of Yellow Colour, according to the goodness of the Aloes.

II. *Brazil*. To some ground Brazil put small Beer and Vinegar, of each a sufficient quantity, let it boyl gently a good while, then put therein Alum in powder to heighten the colour, and some Gum-Arabick to bind it; boyl it till it taste strong on the tongue,
and

and make a good red, Pink colour, or light Violet.

III. *Logwood.* Ground Logwood boiled as Brazil, makes a very fair transparent Violet or Purple Colour.

IV. *Cochenele.* Steeped as Brazil was boiled, makes a fair transparent purple: as thus, take Cochinele, and put it into the strongest Sope-les to steep, and it will be a fair purple, which you may lighten or deepen at pleasure. Infused in strong Vinegar, it makes a transparent purple.

V. *Madder.* Take madder four drachms, ground Brazil one ounce, Rain-water a quart; boil away a third part; then add Alum half an ounce boil it to a pint; then Gum-Arabick one ounce, which boil till it is dissolved, cool it stirring it often, and strain it for use. It is a good Scarlet die for Leather.

VI. *Verdigrife.* Take Verdigrife ground finely one ounce, put to it a good quantity of common varnish, and so much oyl of Turpentine, as will make it thin enough to work withal; it is a good green. Fine Verdigrife, dissolved in Rhenish wine or Vinegar, makes a transparent Green inclining to blew. Ground with juice of Rue and Gum-water, it is a pure Green: without the juice, it makes a glorious emerald, mixt with Crystals of Tartar in white wine Vinegar, in which Gum-Arabick has been dissolved, makes a pure Green. And Verdigrife, Alum, of each one drachm, Logwood three drachms, boiled in Vinegar, make a good Murry.

VII. *Gambogia.* Dissolve it in fair spring water, and it will make a beautiful and transparent yellow: if you would have it stronger, dissolve some Alum therein: it is good for Silk, Linnen, white Leather, Parchment, Vellom, Paper, Quills, &c. This colour delights in no mixtures.

VIII. To make Verdigrise and Ceruse, according to Glauber.

These colours are made with Vinegar in earthen pots set into hot horse dung: but if you dissolve your Venus or Saturn with spirit of Nitre, and precipitate your Venus with a lye made of Salt of Tartar, and your Saturn with Salt water, edulcorating and drying them; the Venus will yield an excellent Verdigrise, which will nor corrode other colours as the common Verdigrise doth; and the Saturn yields a Ceruse whiter and purer than the ordinary much better for Painting or Chirurgery,

IX. *Yellow Fustick-berry*. Boil it in water or steep them in Alum water, it makes a good and transparent yellow for the same purpose.

X. *Turnsole*. Put it into a sharp Vinegar over a gentle fire till the Vinegar boil, and is coloured; then take out the Turnsole and squeeze it into the Vinegar, in which dissolve a little Gum-Arabick; it shadows very well on a Carnation or yellow.

XI. *Litmose*. Cut it into small pieces, and steep it a day or two in weak Gum-Lake water, and you will have a pure transparent blew water to wash with.

XII. *Flory Blew*. Grind it with glair of Eggs, if then you add a little Rosset it makes a light Violet blew; mixed with White and Red-lead, it makes a Crane-feather colour.

XIII. *Saffron*. Steeped in Vinegar and mixed with gum-water is a good yellow. In White wine or Sack, it makes also a good yellow; but more glorious if you mixt it with equal parts of Cochenele you may also steep it in glair of Eggs; or grind it with Vermilion.

XIV. *Indian*

XIV. *Indian-Lake*. Ground with Gum-Arabiick water; makes a glorious Murry; in grinding it, add a little Sugar-candy: some say it makes a deep Pink or Bloom colour.

XV. *Vermilion*. Being ground with glair of Eggs and Honey or Gum-water, it makes a deep Red, or Scarlet colour.

XVI. *Red-lead*. Grind it with a stiff Gum-lake water; if you add Saffron, it makes it Orient, and of a Marigold colour: of it self it is between a Red, and an Orange colour.

XVII. *Rosset*. Washed and tempered with Gum-water, differs not much in colour from Indian-Lake; but it will soon fade and grow lighter; but being tempered with Brasil-water, 'twill be more deep.

XVIII. *Indian-Cakes*. Use them as ye do Turnsole (at Sect. 10. above) they make a good transparent Red colour: into the liquor put some Gum to bind it.

XIX. *Masticote*. Ground and tempered with Gum-water, makes a good yellow, but not transparent.

XX. *Orpiment*. Washed and coloured with Gum-water, makes an Orient or Gold colour: there are several degrees of it, some more red, others more yellow.

XXI. *Verditer*. Washed and tempered with Gum-water, is a good blew, but not transparent, or inclining to a Green.

XXII. *Indico*. Ground and tempered with Gum-water, makes a deep blew, and is fit to shadow all other blews.

XXIII. *Blew Bice*. Washed and tempered with Gum-water, it is an excellent blew: there are several sorts of it, some lighter, some sadder. Blew Bice,

Bice, Verditure, and smalt, ground singly with Gum-water (or together) make a good blew.

XXIV. *smalt*. Ground with a little fine Rosset, makes a deep Violet.

XXV. *Ultramarine*. If you would have it deep, grind it with Litmose water; it is the best and dearest of all blews.

XXVI. *Sap-Green*. Steep it in sharp Vinegar all night, to which add a little Alum to raise its colour. In Alum water it makes a good green to shadow with.

XXVII. *Green Bice*. Washed and tempered with Gum-water, makes a good, but no transparent Green.

XXVIII. *Lamp black or Printers black*. Burnt, ground, and tempered with Gum-water, make a good black.

XXIX. *Ivory black*. Burnt, ground and tempered with Gum-water, as the former makes also a good black.

XXX. *Flake-Lead*. Ground and tempered with Gum-water, is an excellent white.

XXXI. *Spanish White*. Ground and tempered in like manner with Gum-water, makes the best of all whites.

XXXII. *Spanish Brown*. Burnt, ground, and tempered with Gum-water, makes a Redish brown, or Liver colour.

XXXIII. *Umber*. Burnt and ground, and tempered with Gum-water, makes a good haw colour; and is very good to shadow with upon Gold.

XXXIV. *Green of Wallnuts*. Boiled in water and strained, and Gum-Arabick dissolved in the liquor to bind it, makes an excellent colour to express Highways, Lanes, &c.

XXXV. *Wood*

XXXV. *Wood Soot.* Prepared in all respects as the former, serves to the same intentions; and is much the better colour.

XXXVI. *Native Cinnabar.* Grind it as Red-Lead, it is a glorious Red colour; much exceeding the Artificial.

C H A P. XXI.

Of Compounded Colours for Washing of Maps, &c.

I. **O** *Range Colour.* Red-lead and Yellow berries make a good Orange colour: thus, take Arnotto half an ounce, Pot ashes one Drachm, water one pound, boil it half away, then strain it, and use it hot.

It is good for White Leather, Paper, Vellom, Quills, Parchment, &c.

II. *Green.* Take distilled vinegar, filings of Copper, digest till the vinegar is blew, which let stand in the Sun or a slow fire till it is thick enough, and it will be a good green.

Or thus, Take Cedar-green (which is best of all) or instead thereof green Bice, steep it in Vinegar, and strain it; then grind it well with fair water, and put to it a little honey, and dry it well; when you use it, mix it with Gum-water.

III. *To make fine Indico.*

Take the blossoms of Woade three ounces, Amylum one ounce, grind them with Urine and strong Vinegar, of which make a Cake, then dry it in the Sun, and so keep it for use.

IV. *A Blew to wash upon paper.*

Take of the best Azure an ounce, Kermes two
P ounces,

ounces, mix them, which temper with clear gum-water, and it will be a glorious colour.

V. *To make a Venice Blew.*

Take quick Lime, make it into paste with strong Vinegar, half an hour after put thereto more Vinegar to soften it; then add Indico in fine powder one ounce, mix them, and digest it in horse-dung for thirty or forty days.

VI. *Another excellent Blew.*

Mix fine white Chalk with juice of Elder-berries full ripe, to which put a little Alum-water.

VII. *To make blew Smalt.*

Take fluxible sand, Sal-Nitre and Cobalt, mix them together.

VIII. *A lively Yellow.*

Dissolve Orpiment in gum-water, to which put a little ground Vermilion; grind them together and you shall have a very lively colour.

IX. *A light Green.* Take juyce of Rue, Verdigrise, and Saffron, grind them well together and use them with gum-water.

Or thus, Take Sap-green, Flower-de-luce, or Tawny green, which steep in water: Verditure and Ceruse mixt with a little Copper green, make a good light colour.

X. *Blew Ultramarine, blew-Bice, Smalt, and Verditure,* ground singly with gum-water, or together, make a good blew.

XI. *Brown.* Ceruse, Red-lead, English Oker, and Pink, make a good brown.

XII. *Spanish-brown.* To colour any Horse, Dog, or the like, you must not calcine it; (yet not calcined it is a dirty colour :) but to shadow Vermilion, or lay upon any dark ground, behind a picture, to shade berries in the darkest places, or to colour wooden posts, wainscot, bodies of Trees and the like, it is very good (being burnt.)

XIII. *Flesh*

XIII. *Flesh Colour.* Mix white, Indian Lake, and Red-lead (according as you would have it light or deep;) and to distinguish a mans flesh from a womans, mingle with it a little Oker.

XIV. *Colours of Stones.* Verdegrise with Varnish makes an Emerald: with *Florence Lake* a Ruby; with *Ultramarine* a Sapphire.

XV. *A never fading Green.*

Take juice of flowers of Flower-de-luce, put it into Gum-water and dry it in the Sun.

C H A P. XXII.

Of mixing Colours and Shadowing.

I. **I**N mixing be careful not to make the colour too fad, nor take the pencils out of one colour and put them into another.

II. In mixing colours, stir them well about the water severally till they are well mixed; then put them together, making the colour fadder or lighter at pleasure.

III. *Green* is shadowed with *Indico* and yellow-berries.

IV. *Blew* is shadowed with *Indico*, *Litmose* and *Flory*; or any of them being steeped in Lees of *Sope*-ashes, and used with gum-water.

V. *Garments* are shadowed with their own proper colours: or you may mingle the colour with white (for the light) and shadow it with the same colour unmingled: or you may take the thinnest of the colour for the light, and shadow with the thickest or bottom of the same.

VI. *Sap-green* is only used to shadow other greens

with, and not to be laid for a ground in any Garment.

VII. *Lake* ought not to be shaded with any colour, for it is a dark red; but for variety you may shadow it with *Bice*, or *blew Verditure*, which will make it like changeable *Taffata*.

VIII. The shadow for *Yellow-berries* is *Umber*; but for beauties sake with *Red-lead*, and the darkest touches with *Spanish-brown*; and for variety with *Copper green*, *blew Bice* or *Verditure*.

IX. *White* sets off *blews* and *blacks* very well: *Red* sets off well with *yellow*: *Yellows* with *reds*, *fad blews*, *browns*, *greens*, and *purples*.

X. *Blews* set off well with *yellows*, *reds*, *whites*, *browns*, and *blacks*: and *Green* sets off well with *purples*, and *reds*.

XI. More especially, all light colours are shadowed with colours of the same nature, but more *fad*; as for Example: *Vermilion* is shadowed with *Lake* or *Spanish brown*. *Verditer* and *Bice* are shadowed with *Indico*. *Camboge* and *yellow berries* are shadowed with *Umber*, with *Red-lead* or *Vermilion*. *Red-Lead* is shadowed with *Lake* or *Spanish brown*. *Masticote*, is shadowed with *Red Orpiment*. *Spanish brown* is shadowed with *burnt Umber*, with *Brasil-water*. *Umber* is shadowed with *Umber burnt*, *Rosset* & *Brasil* are shadowed with *Spanish brown* mixed with *brasil-water*. *Verdegrise* is shadowed with *Indico* mixed with *yellow-berry water*. *Wood Soot* and *Walnut-shells* are shadowed with *Umber*.

XXII. From the various mixtures of the forementi-on'd Colours, infinite varieties almost may arise, even whatsoever one pleases: But for our purpose of washing *Maps*, *Globes*, *Pictures*, *Landskips* &c. the most transparent colours are principal; of which these are chief, viz. *Brasil*, *Logwood*, *Indian cakes*, *Turnsole*, *Cambogia*, *Saffron*,
yellow

yellow berries, Litmose, Sap-green, Verdigrise, Wood Soot, green Walnut shells : of these you may by mixture make severall compounds, as

XIII. *A Compound Green.* Mix verdigrise water with yellow-berry water : it will be transparent, and you may make it deeper or lighter according to the proportion that you take of either.

XIV. *A Compound blew colour.* Mix Litmose water with yellow-berry water, and you will have a transparent sad blew, which you may heighten or deepen as the former at pleasure.

XV. *A Compound Orange Colour.* It is made by mixing Brasil water with yellow-berry water of a transparent colour. Infinite other Varieties you may find out by practice, much better than to learn them by many words. See other examples of staining colours in Chap. XXXIV. Sect. 19, 20, 21, 22, 23 and 24. following in this Book, and some other preceding Sections of the same Chapter.

C H A P. XXIII

Of Colours for washing Landskips.

I. **G**reen mixed with white, Pink, Bice Masticot, Smalt, Indico, or Ceruse; or blew Verditure mixt with a few yellow berries makes a good green for Landskips.

II. For the *saddest hills* use Umber burnt; for the *lightest places*, put yellow to the burnt Umber : for *other hills* lay Copper green thickened on the fire, or in the Sun : for the next *hills farther off* mix yellow berries with Copper green : let the fourth part be done with green Verditure; and the *farthest and faintest*

best places with blew Bice, or blew Verditure mingled with white, and shadowed with blew Verditure, in the shadows indifferent thick.

III. Let the *high-ways* be done with red and white Lead, and for variety Yellow-oker; shadow it with burnt Umber, which you may use for sandy Rocks and Hills.

IV. *Rocks* may be done with several colours, in some places black and white, in other places red and white, and in others blew and white, and the like, as you see convenient.

V. *The water* must be black Verditure and white, shadowed with green and blew Verditure, when the *banks* cast a green shadow upon the water, and the water is dark shadowed, then shade it with Indico, green thickned, and blew Verditure

VI. Colour *buildings* with as much variety of pleasant colours as may be imaginable, yet let reason be your rule in mixing your colours: you may sometimes use white and black for the *Wall, Conduits* or other things: for *Brick-houses* and the like, red-lead and white: if *many houses* stand together, set them off with variety of colours, as Umber and white; Lake and white; Red-lead and white, and the like.

VII. Lastly, for the *Skie*, use Masticot or yellow-berries, and white for the *lowest and lightest places*; red Rosset and white for the *next degree*; blew Bice and white for the *other*; blew Bice, or blew Verditure for the *highest*.

These degrees and colours must be so wrought together, that the edge of each colour may not receive any sharpness; that is, so as that you cannot perceive where you began to lay them, being so drowned one in another.

C H A P. XXIV.

Of the Practice of Washing.

I. **W**ith the *Alum water* wet over the pictures to be coloured, for that keeps the colours from sinking into the paper, & will add a lustre unto them, make them shew fairer, and keep them from fading.

II. Then let the paper dry of it self (being washed with *Alum-water*) before you lay on the colours ; or before you wet it again, for some paper will need wetting four or five times.

III. The washing of the paper with the *Alum-water* must be done with a large pencil brush, such as we have advised to at the sixth Section of the nineteenth Chapter of this Book.

IV. But if you intend to varnish your pictures after you have coloured them ; instead of washing them with *Alum-water*, first size them with new size made of good white starch, with a very fine brush ; and this you must be sure to do all over, for else the varnish will sink through.

V. Having thus prepared your work, go to laying on your colours according to the former directions, suiting them, as near as may be, to the life of every thing.

But before you lay on your Colours, you must know how to temper them ; which you may do in this manner. 1. *Such colours as are ground with fair water :* take a small quantity of them, put it into a *Horse Muscle-shell*, putting thereto some *Gum-water*, and the Colour in a little time will be softned : then with your finger being very clean bruise the Colour against the shell till you find no knot undissolved : after with a clean pencil stroak down the colour

to the bottom of the shell, and it is fit for use; if it be too thick, add more gum-water to it. 2. Such colours as are washed you must temper in a shell with Gum-water in the same manner as the former. 3. Such Colours as are steeped, the liquor only of them is to be used without any other preparation.

VI. The Picture being painted, you may with size (as at the fourth Section of the nineteenth Chapter of this Book) paste your Maps or pictures upon cloth, thus: wet the sheet of cloth therein, wring it out, and strain it upon a Frame, or nail it upon a wall or board, and so paste your Maps or pictures thereon.

VII. Lastly, if the Picture be to be varnished, having thus fixed it into its proper Frame, then varnish it with a proper varnish (by the following rules) and the work will be fully finished.

How to lay on your Colours.

VIII. First, provide your self of pencils of several sizes, and if you will be curious you ought to have a great and a small to each respective colour: if not you must always have by you a dish of fair Water, in which you must wash and cleanse your pencil, wiping it with a clean linnen cloth, before you put it into another Colour.

IX. For your pencils, chuse those that are good, thus: see that they be fullest next to the quill, descending or lessening into a small room and sharp point, which you may see by putting the hair into your mouth, and drawing it through your lips once or twice; then you will see what it is, and if you find any extravagant hairs, findge them off by a Candles flame.

X. Being thus provided with Colours and pencils; if you design to lay any colour about the edges of any Map, Part, Piece, or division of Ground, in a
Plat;

Plat; as suppose you would inclose a particular Field or Close in a Mannor, with yellow: with your pencil take Camboge or yellow-berry water a very small quantity, and on the inside of the black-lead line, draw the Colour along of an equal breadth (as near as you can) from the line, broader or narrower as your field is in bigness; not daubing the field or close all over with the Colour, which would be but an abuse to your Map or Plat.

XI. Then having gone round the Close or Field in this manner, with your Colour, wet your Pencil in your mouth, or have by you a small quantity of water to dip it in, and strike along the inside of the coloured line, bringing it more down towards the center of the field: and this will sweeten your Colour, and make it shew as if it lost it self by degrees, to the very colour of your paper or parchment. This course is to be taken not only for yellows, but for all other colours. Lastly, with a pen (if you cannot do it handsomly with a pencil,) take some of the colour which shadows the colour you have already used about the field, and go over your black-lead line only, so shall your field be finished.

XII. Lastly, after the same manner you may adorn all the field in your Plat or Map, of divers colours; observing this, that you colour not two fields adjoining one to another both of the same colour, but of different; and therefore it behoves you to know what colours do set off one another best; and as near as you can, to lay Closes or Fields, adjoining one to another, of two such colours, that one shadow may serve both.

C H A P. XXV.

Of the making of Varnishes.

I. **V** *Arnish for Painting in Oyl.*

Take Mastick two ounces, oyl of Turpentine, one ounce; put the Mastick in powder into the oyl, and melt it over the fire, letting it boyl little or nothing (lest it be clammy;) when it is enough, you may know by putting in a hens feather, for then it will burn it.

II. *Varnish for painted Pictures.*

Take white Rozin one pound, Plum-tree Gum (or Gum-Arabick) Venice Turpentine, Linseed-oyl, of each two ounces; first melt the Rozin and strain it very hot; steep the Gum in oyl Olive (oyl of Ben is better) till it is dissolved, and strain it, to which put the Turpentine and Rozin, and over a slow fire mingle them till they are well dissolved. When you use it, use it hot.

III. *Another for the same.*

Take Olibanum and Gum-Sandrack in powder, which mingle with Venice Turpentine, melting and incorporating them still over a gentle fire, then strain it hot.

When you use it, let it be hot, and your Varnish will shine well; it dries immediately.

IV. *Another for the same.*

Take oyl of Linseed, which distill in a glass Retort, one ounce, fair Amber dissolved three ounces, mix them over a slow Fire, and it is done.

V. *A very good Varnish for Gold, Silver, Brass, Iron, Stone, Wood, Vellom, or Paper.*

Take

Take Benjamin (made into a fine powder between two papers) put it into a vial, and cover it with Spirit of Wine four fingers above it, and let it stand three or four days; then strain it, and it will be bright and shining, drying immediately, and retaining its brightness many years.

If you varnish Gold, or any thing gilded, before the straining you should put in a few blades of Saffron for colour sake: but if Silver or any thing white, you ought to use the white part of the Benjamin only.

VI. *A Varnish particularly for Gold, Silver, Tin, or Copper.*

Take Linseed oyl six ounces, Mastick, Aloes Epatick of each one ounce; put the gums in powder into the oyl, into a glazed earthen pot, which cover with another, luting them together, in the bottom of which let be a hole, whereinto put a small stick with a broad end to stir withal; cover them all over with clay, (except the hole,) set it over the fire, and stir it as often as it seetheth for a little while, then strain it for use. First let the metal be polished, then strike it over with this varnish.

VII. *A Varnish for Wood and Leather.*

Take Tincture of Saffron or Turmerick in Spirit of Wine a pint, prepared Gum-lake a sufficient quantity, dissolve the Gum in the Tincture, and it is done.

This is a Varnish of great use to lay over Gold, and Silver or any thing which is exposed to the Air.

VIII. *To make the common Varnish.*

Take spirit of Wine a quart, Rozin one ounce, Gum-lake a sufficient quantity, dissolve the Gums in a gentle heat (being close covered) and let them settle: then gently decant off the clear, which keep in a close Glass-bottle for use.

The thick which remains, you may strain through a cloth, and keep for other purposes.

IX. To make a red Varnish.

Take spirit of Wine a quart, Gum-lake four ounces, *Sanguis Draconis* in fine powder eight ounces, Cochenele one ounce, digest a week over a gentle heat, then strain it for use.

X. To make a Yellow Varnish.

Take spirit of Wine a pint, in which infuse (three or four days) Saffron half an ounce, then strain it, and add Aloes Succotrina one ounce, *Sanguis Draconis* two ounces, which digest a week over a gentle heat close covered, then strain it for use.

XI. An Universal Varnish, the best of all others.

Take good Gum-Sandrack (but Gum-Anime is better) dissolve it in the highest rectified spirit of Wine (an ounce and half more or less to a pint) and it is done.

Where note, 1. That unless the Spirits be highly rectified the Varnish cannot be good. 2. Some mix boiled Turpentine with it; others Chymical oyls of deep colours (as of Cloves, Mace, Nutmegs, Caraways, Cinnamon) according to the intent. 3. That it ought to be kept in a glass bottle close stopped, lest it curdle, and the Gums separate.

XII. The Indian Varnish for Cabinets, Coaches, and such like.

Take the highest rectified spirit of Wine a quart, seed Lake or shell Lake five ounces, put them into a glass body; and dissolve the Lake in Balneo (but beware lest the water in the Balneum boil, for that will turn the Varnish white) this done strain the matter through a Flannel bag, and keep it in a glass bottle close stopt for use.

Where note, 1. That if the spirit is good, it will (if you put Gun-powder into it) burn all away and fire the

Gun-

Gun-powder. 2. That this Varnish done over leaf Silver, turns the Silver of a Gold colour. 3. That this is that Varnish which Coach-makers and others use for that purpose. 4. That it preserves the Silver which it is laid upon from the injuries of the Air. 5. That being laid upon any colour it makes it look infinitely the more beautiful. 6. That if it lies rough you may polish it with the impalpable powder of Emery and water.

XIII. *To make another excellent white Varnish.*

Take of the best rectified spirit of Wine a pint and half; Gum-Sandrack, Mastick, ana five ounces, Gum-Anime one ounce: scrape or cleanse the Gums; beat them a-part into fine powder, and dissolve them in the spirit in a gentle *Balneo*, not full-out boiling; which will be done in about eight hours, stopping the bottle in which the Ingredients are: when they are dissolved, keep them in the same bottle close stopt for use.

1. When you use it put a little into a Gally-pot, stopping the remainder close: lay on the Varnish with a brush several times, letting it stand but an hour before the Fire, between each washing over. 2. To prepare the Paper. Take Ising-glass cut small one ounce: Spring-water half a pint; mix and digest cold twenty four hours; then pour off and cast away that water: this done put to the remaining matter new Spring-water a pint, make a perfect dissolution over a gentle heat, or in *Balneo*, then put it into a Gally-pot, and keep it for use. 3. When you use it heat it but just warm, in the same pot, and with a brush of Camels hair dry wipe over your paper (being first pasted upon a board and dried) then set it to dry about half a yard distant from the fire; and when it is thoroughly dry, go over your paper again in the same manner, repeating this last work so often, till it looks like glass. 4. This done, lay on the Varnish, as before directed, then dry it: Lastly, after
three

three or four days or more, polish it with impalpable powder of Trippoli, Emery, or Putty, by help of a Rag, and a little fair water.

XIV. *To make common Varnish.*

Take oyl of Turpentine and oyl of Spike, Gum-Sandrack, of each a pound, mix the oyls together, and let them stand over the fire, till the Sandrack is dissolved; and it is done. If the fire should chance to catch hold on it, clap a pewter dish, or cover the top of the Vessel close, and it will immediately go out.

C H A P. XXVI.

Of the manner of Varnishing.

I. **T**He intent of Varnishing is either to preserve the gloss of paintings or pictures, or else to represent and imitate the forms of shining and per-lucid bodies.

II. To Varnish paintings and pictures, 'tis no more but with a pencil dip in the varnish to go over the same, then letting it dry; and so going over it so often as in reason you shall see convenient.

III. If you are to imitate any thing, as Marble, Tortoise-shell, Amber, *Lapis Lazuli*, or the like: you must first make the imitation of them, upon that which you would varnish, with their proper colours, as in Limning or Painting with oyl; which must be thoroughly dry: then by the second Section go over all with the varnish, so often till you see it thick enough; letting it dry every time leisurely. *For Example sake.*

IV. *To imitate Marble.*

Take of the Universal varnish at the eleventh Section

Section of the five and twentieth Chapter, with which mingle Lamp-black (or other black) and White-lead finely beaten, and with a brush pencil, marble the thing you would varnish according to your fancy ; lastly, being dry, strike it again two or three times over with clear varnish alone, and it will be perfect.

V. To imitate Tortoise-shell.

First lay a white ground, then with convenient colours (as Vermilion with Auripigment) duly mixt with common varnish, streak and shadow the white ground with any wild fancy (as neatly imitating Tortoise-shell as you can) which being dry, strike it here and there with the red varnish (mixed with a little Cinnabar or Indian Lake) then up and down the work as nature requires, touch it with varnish mixed with any good black ; then stroke it over with Universal *varnish* four or five times, letting it dry every time ; lastly, let it dry well a week, and with Pumice stone (in fine powder) and a wet cloth polish it by rubbing ; then go over it again three or four times with the Universal *varnish*, and (if need require) polish it again with fine putty as before ; after which you may once again strike it over with the said Varnish, and it will be done.

VI. To imitate Tortoise-shell upon Silver or Gold.

A white ground being laid, and smeared over with Vermilion or the like ; lay over the same leaves of Silver or Gold (as we have taught in other places) either with Gum-Ammoniacum, Lake, common *Varnish* or glair ; this done, and being dried, shadow it according to reason ; striking it over here and there with yellow *Varnish*, and with the yellow *Varnish* mixed with a little red *Varnish* ; (all things being done in imitation of the shell) strike it several times over with the Universal *Varnish*, and polish it (in all respects) as before.

VII. *To imitate Lapis Lazuli;*

Upon a ground of White-lead, Spodium or the like in common Varnish (being first dry) lay Ultramarine or some other pure blew well mixed with the Universal Varnish, so as that the ground may not appear: then with wild irregular streaks (in resemblance of Nature) with liquor or shell Gold, run straglingly all over the blew, adding very small specks upon the blew part, of such various colours, as are usually to be seen upon the stone,

C H A P. XXVII.

Experimental Observations of Vegetable Colours in General

I. **A** Strong infusion of Galls filtred, mixed with a strong and clear solution of Vitriol, makes a mixture as black as *Ink*: which with a little strong Oyl of Vitriol is made *transparent* again: after which the *black* colour is regained again, by the affusion of a little quantity of a strong solution of Salt of Tartar.

The first black (although pale in writing, yet) being dry, appears to be good Ink.

II. Decoction of dried red Roses in fair water, mixed with a little filtrated solution of blew Vitriol made a black colour: this mixed with a little *Aqua-fortis* turn'd it from a black, to a deep red; which by affusion of a little spirit of Urine, may be reduced straight to a thick and black colour.

III. *Yellow wax* is whitened by dissolving it over the fire in spirit of Wine, letting it boil a little, and then exhaling the spirit of Wine; or else whilst it is hot, separating it by filtration.

IV. Fair

IV. Fair water mixed with a blood red Tincture of *Benjamin* drawn with spirit of Wine, immediately makes it of a milk white colour.

V. *Blackness* may be taken away with oyl of Vitriol; so black pieces of Silk or Hair I have turn'd to a kind of yellow.

VI. A handful of *Lignum Nephriticum* rasped, infused in four pound of spring water, yields between the light and the eye an almost golden colour (unless the infusion be too strong) but with the eye between the light and it (in a clear vial) a lovely blew as indeed it is: this with spirit of Vinegar may be made to varnish (still keeping its golden colour) and after with oyl of Tartar *per deliquium* may be restored again.

VII. Cloth died with blew and Woad, is by the yellow decoction of *Luteola* died into a green.

VIII. Syrup of Violets mixed with a high solution of Gold in *Aqua regia*, produces a reddish mixture; and with a high solution of filings of Copper in spirit of Urine, a lovely fair green.

IX. Syrup of Violets mixt with a little juyce of Lemons, spirit of Salt, Vinegar, or the like acid Salt, will be immediately red; but mixt with oyl of Tartar, or a solution of pot-ashes it will in a moment be perfect green: the like in juyce of blew-bottles.

X. A good quantity of oyl of Tartar, put into a strong solution of Verdigrise, gives a delightful blew, which may be variously changed by adding spirit of Urine, or Hartshorn.

XI. Although red Roses hung over the fume of Sulphur, lose all their redness, and become white yet oyl of Sulphur (which is nothing but the fumes condensed) doth wonderfully heighten the tincture of the same.

XII. *Cochenele* will have its colour far more height-

ned by spirit of Urine than by rectified spirit of Wine: and one grane of Cochenele in a good quantity of spirit of Urine, being put into one hundred twenty six ounces of water, tinged it (although but faintly :) which amounts to above one hundred twenty five thousand times its own weight.

XIII. Twenty grains of *Cochenele* being mixed with an ounce of *Saccharum Saturni*, makes a most glorious purple colour: and so accordingly as the quantity is either diminished or encreased, so the purple colour shall be either lighter or deeper.

XIV. A few grains of *Cochenele* being mixed with the *Lixivium* of Quick-lime in a due proportion, makes a fading purple colour, of the greatest glory imaginable in the world.

XV. The juice of privet berries with spirit of Salt, is turned into a lovely red: but with a strong solution of pot-ashes into a delightful green.

XVI. Upon things red by nature, as Syrup of Clove-gilliflowers, juice of Buckthorn berries, infusion of Red Roses, Brazil, &c. Spirit of Salt makes no considerable change, but rather a lighter red: but other salts turn them into a greenish; especially juice of buckthorn berries.

XVII. Juice of *Jasmin* and snow drops, by a strong *alkalicate* solution, was (although of no colour) turned into a deep greenish yellow.

XVIII *Buckthorn berries* being gathered green and dried are called *Sap-berries*, which being infused in Alum-water gives a fair yellow (which is used by Book-binders for the edges of their Books, and to colour Leather also:) being gathered when they are black, they are called *Sap-green*, and make a green colour being put into a Brass or Copper vessel for three or four days: or a little heated upon the fire, and mixed with Alum.

in powder, and pressed forth ; so put into bladders, hanging it up till it is dry : and being gathered about the end of *November*, (when they are ready to drop) they yield a purplish colour.

XIX. Tincture of *Cochenele*, diluted never so much with fair water, will never yield a yellow colour : a single drop of a deep solution in spirit of *Urine*, diluted in an ounce of fair water, makes a fair *Pink*, or *Carnation*.

XX. Oyl or spirit of *Turpentine*, digested with pure white *Sugar of lead*, yields in a short time a high red tincture, which *Chymists* call *Balsamum Saturni*.

XXI. Spirit of *Salt* dropt into a strong infusion of *Cochenele* or juice of black cherries, makes immediately a fair red : but dropt into the infusion of *Brazil*, a kind of yellow : so the filtrated tincture of *Balaustins* mixed with good spirit of *Urine*, or the like, turns of a darkish green ; but with spirit of *Salt*, a high redness, like rich *Claret wine* ; which glorious colour may in a moment be destroyed, and turned into a dirty green, by spirit of *Urine*.

XXII. A high infusion of *Lignum Nephriticum*, mixed with spirit of *Urine* gives so deep a blew, as to make the liquor opacous : which after a day or two vanishes, and leaves the liquor of a bright amber colour.

Where note that instead of Spirit of *Urine* you may use oyl of *Tartar*, or a strong solution of *pot-ashes*.

XXIII. Infusion of *Logwood* in fair water (mixt with spirit of *Sal Armoniack*) straight turns into a deep, rich, lovely purple ; two or three drops to a spoonful is enough, lest the colour be so deep, as to be opacous.

XXIV. Spirit of *Sal Armoniack* will turn syrup of *Violets* to a lovely green.

XXV. Infusion of *Litmose* in fair water gives in a

clear glass a purple colour: but by addition of spirit of Salt, it will be wholly changed into a *glorious yellow*.

XXVI. The Infusions and juices of several plants will be much altered by a solution of Lead in spirit of Vinegar: it will turn infusion of red rose leaves into a *fad green*.

XXVII. So Tincture of red roses in fair water, would be turned into a thick green, with the solution of *Minnium* in spirit of Vinegar; and then with the addition of oyl of Vitriol the resolved Lead would precipitate white, leaving the liquor of a clear, high red colour again.

XXVIII. We have not yet found, that to exhibit strong variety of colours, there need be employed any more than these five, White, Black, Red, Blew, Yellow: for these being variously compounded and decomposed, exhibit a variety and number of colours: such as those who are strangers to painting can hardly imagine.

XXIX. So Black and White variously mixed, make a vast company of light and deep Grays: Blew and Yellow, many Greens: Red and Yellow, Orange-tawnies: Red and White, Carnations: Red and Blew, Purples, &c. producing many colours for which we want names.

XXX. Acid salts destroy a blew colour: Sulphureous, Urinous or fixed restore it.

XXXI. Acid and *Alcalizate* salts with many bodies that abound with *Sulphureous* or oily parts will produce a red, as is manifest in the Tincture of Sulphur, made with *Lixiviums* of Calcined Tartar or pot-ashes.

XXXII. Lastly it may be worth trial (since it hath succeeded in some experiments) so to take away the colour of a Liquor, as that it may be colourless: which in what we have tryed, was thus: first by putting into the Tincture, Liquor, or Juice, a quantity of the solution of pot-ashes or oyl of Tartar *per deliquium*; and then af-
fusing

fusing a good or strong solution of Alum, which in our observations precipitated the tinging matter, or gathered it into one body (like as it were curds) and so left the Liquor *transparent and clear as Crystal,*

C H A P. XXVIII.

General Experimental observations of Mineral Colours.

I **S**ublimatè dissolved in fair water, and mixed with a little spirit of Urine, makes a milk white mixture in a moment: which by addition of *Aqua-fortis*, immediately again becomes *transparent*.

II. If *Sublimatè* two ounces, and *Tin-glass* one ounce be sublimed together, you will have a sublimatè not inferiour to the best *Orient Pearls* in the world.

III. *Silver* dissolved in *Aqua fortis* and evaporated to dryness, and fair water poured two or three times thereon, and evaporated, till the *calx* is dry, leaves it of a Snow whiteness: which rubbed upon the skin, (wetted with spittle, water or the like) produces a deep blackness, not to be obliterated in some days.

With this, Ivory, Hair and Horns may be dyed in fair water of a lasting black.

IV. *Coral* dissolved by oyl of Vitriol, Sulphur, or spirit of vinegar, and precipitated by oyl of Tartar yields a Snow whiteness. The same of Crude Lead and Quicksilver dissolved in *Aqua fortis*: So butter of *Antimony* rectified by bare affusion in much fair water, will (though Unctuous) be precipitated into that Snow white powder which (being washed from its corrosive salts) is called *Mercurius Vita*: the like of which may be made without the addition of any *Mercury* at all.

V. *Mercury Sublimate* and *precipitate* yields (with the spirit of Urine, Hartshorn, or the like) a *white precipitate* : but with the solution of Pot-ashes or other *Lixivate* Salts an *Orange Tawny*. And if on a filtrated solution of Vitriol, you put the solution of a *fixed salt* ; there will subside a copious substance far from whiteness, which Chymists call the Sulphur of Vitriol.

VI. If Copper two ounces be mixt with Tin one ounce, the reddishness will vanish : and if Arsenick (calcined with Nitre) in a just proportion be mixed with melted Copper, it will be blanch'd both within and without.

VII. Fine powders of blew Bice, and yellow Orpiment slightly mixed, give a good green : and a high yellow solution of good Gold in *Aqua regia*, mixed with a due quantity of a deep blew solution of crude Copper in strong Spirit of Urine, produces a *transparent green* : And so blew and yellow *Amel* fused together in the flame of a Lamp, being strongly blowed on without ceasing, produces at length a green colour.

VIII. An urinous salt, largely put into the dissolution of blew Vitriol in fair water, turn'd the liquor and corpuscles (which resided) into a yellowish colour like yellow Oker.

IX. Verdigrise ground with *Sal-Armoniack* and the like (digested for a while in a dunghil) makes a glorious blew.

X. The true glass of *Antimony* extracted with acid spirits (with or without Wine) yields a red tincture.

XI. Balsam of Sulphur (of a deep red in the glass) shaken about, or dropt on paper gives a yellow stain.

XII. If Brimstone and *Sal-Armoniack* in powder, of each five ounces, be mixed with quick-lime in powder six ounces, and distilled in a Retort in sand by degrees ; you will have a volatil spirit of Sulphur of excellent

cellent redness, though none of the ingredients be so.

So also oyl of Anniseeds mixed with oyl of Vitriol, gives in a trice a blood red Colour, which soon decays.

XIII. Fine Silver dissolved in *Aqua fortis*, and precipitated with spirit of Salt; upon the first decanting the liquor, the remaining matter will be purely white; but lying uncovered, what is subject to the ambient Air will lose its whiteness.

XIV. *Sublimate* dissolved in a quantity of water and filtred; till it is as clear as Crystal, mixed (in a Venice glass) with good oyl of Tartar *per deliquium* filtred, (three or four drops to a spoonful) yields an opacous liquor or a deep Orange colour; after which if four or five drops of oyl of Vitriol be dropt in, and the glass straightway be strongly shaken, the whole liquor will (to admiration) be colourless without *sediment*. And if the filtred solution of *sublimed Sal-Armoniack* and *Sublimate* of each alike be mixt with the solution of an *Alkali*, it will be white.

XV. Spirit of *Sal-Armoniack* makes the solution of Verdigrise an excellent *Azure*; but it makes the solution of *Sublimate* yield a white precipitate.

XVI. So the solution of filings of Copper in spirit of Urine (made by fermentation) gives a lovely *Azure* colour: which with oyl of Vitriol (a few drops to a spoonful) is deprived in a trice of the same, and makes it like fair water. And so a solution of Verdigrise in fair water, mixed with strong spirit of Salt, or dephlegmed *Aqua fortis*, makes the greenness almost totally to disappear.

XVII. Quick-silver mixed with three or four times its weight of good oyl of Vitriol, and the oyl drawn off in sand, through a glass retort, leaves a Snow white precipitate; which by affusion of fair water, becomes one of the loveliest light yellows in the world, and a durable colour.

XVIII. Tin calcined *per se* by fire, affords a very white *calx* called *Putty*: Lead, a red powder called *Minium*: Copper a dark or greyish powder: Iron a dirty yellowish colour, called *Crocus Martis*: and Mercury a red powder.

XIX. Gold dissolved in *Aqua Regia* Ennobles the *Menstruum* with its own colour: Silver Coynd dissolved in *Aqua fortis* yields a tincture like that of Copper; but fine Silver a kind of faint blewishness: Copper dissolved in spirit of Sugar (drawn off in a glass Retort) or in oyl or spirit of Turpentine, affords a green tincture; but in *Aqua fortis*, a blew.

XX. *Vermilion* is made of *Mercury* and *Brimstone* sublimed together in a due proportion.

XXI. Glass may have given to it a lovely golden colour with Quick-Silver; but it is now coloured yellow generally with *calx* of Silver: yet shell-Silver, (such as is used with pen or pencil) mixed with a convenient proportion of powdered glass in three or four hours fusion, gave a lovely Sapphirine blew.

XXII. Glass is tinged green (by the Glass-men) with the *Calx* of *Venus*: which *Calx* mixed with an hundred times its weight of fair glass gave in fusion a blew coloured mass.

XXIII. *Putty* (which is Tin calcined) as it is white of it self, so it turns the purer sort of glass metal into a white mass, which when opacous enough, serves for white *Amel*.

XXIV. This white *Amel* is as it were the Basis of all those fine Concretes, that Gold-smiths, and several Artificers use, in the curious Art of *Enameling*; for this white and fusible substance, will receive into it self, without spoiling them, the colours of divers other Mineral substances, which like it will endure the fire.

XXV. Glass

XXV. Glass is also tinged blew with the dark mineral called *Zaffora*; and with *Manganess* or *Magnessia* in a certain proportion, which will tinge glass of a red colour; and also of a Purplish or Murry; and with a greater quantity, into that deep colour which passes for black.

XXVI. Yellow Orpiment sublimed with Sea-Salt, yields a white and Crystalline Arsenick; Arsenick coloured with pure Nitre being duly added to Copper in the fusion, gives it a whiteness both within and without.

XXVII. So *Lapis Calaminaris* turns Copper into Brass.

XXVIII. And *Zink* duly mixed with Copper when 'tis in fusion, gives it the noblest golden colour that was ever seen in the best gold.

XXIX. Copper dissolved in *Aqua fortis* will imbue several bodies of the colour of the solution.

XXX. Lastly, Gold dissolved in *Aqua regia* will (though not commonly known) dye Horns, Ivories, and other Bones of a durable purple colour: And the Crystals of Silver made with *Aqua fortis*, (though they appear white) will presently dye the Skin, Nails, Hair, Horn, and Bones, with a Black not to be washed off.

C H A P. XXIX.

Of Metals.

I. **T**O harden *Quick-silver*.

Cast your Lead separated from its dross into a vessel, and when it begins to cool, thrust in the point of a stick, which take out again and cast in the *Argent Vive*, and it will congeal: then beat it in a mortar,

mortar, and do so often; when it is hard, melt it often and put it into fair water, doing it so long till it is hard enough, then being all in a peice, boyl it in Linseed oyl, the space of six hours, and it will become Malleable, and may be hammered.

II. *To tinge Quick-silver of the colour of Gold.*

Break it into small pieces (being hardned) which put into a Crucible, with the powder of *Cadmia, stratum super stratum*, mixed with Pomegranate peels, Turmerick (beaten fine) and Raisons, cover the Crucible and lute it well, dry it well; and then set it on a fire for six or seven hours, that it may be red-hot; then blow it with bellows till it run, which then let cool whilst covered with coals, and it will have the colour of gold.

III. *To fix Quick-silver being hardned.*

This is done with fine powder of Crystal glass, laid with the Metal *stratum super stratum* in a Crucible covered and luted; heating it all over red-hot, and then melting of it.

IV. *To make Quick-silver malleable.*

First harden it by the first Section, then break the Metal into small pieces, and boil it a quarter of an hour in sharp vinegar: then add a little *Sal-Armoniack*, and digest all together for ten or twelve days; then boil all together in a luted Crucible, till it is red-hot, and by degrees crack: lastly, hang the Mercury in a pot with Brimstone at bottom to cover it; lute it and set it into the fire, that it may grow hot by degrees, and receive the fume of the Sulphur; do thus for a month once a day, and the Mercury will run and be hammered.

V. *Another way of tinging Mercury.*

Take purified Mercury one ounce, Sulphur two ounces, *Aqua fortis* three ounces, let them all stand

till

till the water grow clear; distil this with its sediment, and at bottom of the Limbeck you shall find the Mercury hard, and of an exact colour.

VI. *To colour and soften Gold.*

Dissolve Verdigrise in vinegar, and strain it through a felt, then congeal, and when it begins to wax thick, put to it some Sal-Armoniack, and let it harden a good while, then melt gold with it, and it will heighten the colour and make it soft.

VII. *To make Gold and Silver softer.*

Take Mercury Sublimate, Sal-Armoniack, of each alike, powder them, melt the gold, and put to it a little of this powder, and it will be soft.

VIII. *Another way to do the same.*

Take Vitriol, Verdet, Sal-Armoniack, burnt Brass, of each half an ounce, mix them with *Aqua fortis*, let it so repose in the heat two days, then let it harden, do thus three times with *Aqua fortis*, and let it dry, make it into powder, to one drachm put one ounce of gold three times, and it will be softer.

IX. *Another way to do the same in Silver.*

Take Salt-peter, Tartar, Salt, Verdet, boil all together, till the water is consumed, then put to it Urine, and let it so consume, and you shall have an oyl, which put into melted Silver will do the same.

Or thus, *Take as many wedges as you have melted, put them one night into a crucible in a furnace, but so as they melt not, and they will be soft and fair.*

Or thus, *Take honey, oyl, of each alike, in which quench the Gold or Silver three or four times, and it will be softer.*

Or thus, *Take Mastick, Frankincense, Myrrh, Borax, Vernix, of each a like all in powder.*

Or thus, *Quench the Gold or Silver in water of Sal-Armoniack, and it will be soft.*

X. *To tinge Silver of a Gold colour.*

Take fine Gold, fine Silver, good Brass, and Brass or Copper calcin'd with Sulphur-vive, of each alike, melt them down together, and it shall appear to be gold of eighteen-carets fine.

XI. *Another way to tinge Silver.*

Take Quick-silver, purged three ounces, leaf-gold one ounce, mix them and put them into a glass Retort well luted, put it on the fire till it grow hot; then take it off, and add to it Quick-silver purged two ounces, *Sal-Armoniack* one ounce, *Sal Ellebrot* half an ounce, *Borax* two drachms; then seal up the glass hermetically, and put it into a continual fire for three days; then take it out, let it cool, open the Retort, take out the matter, and powder it very fine: of which powder mix one ounce with silver five ounces, and it will tinge it into a good gold colour.

Note, Sal Ellebrot is thus made. Take pure common Salt, Sal Gem, Sal Alkali in powder, of each one ounce, juice of mints four ounces, spring water four pound, mingle them, and evaporate. And Quick-silver is purged by washing it in sharp Vinegar three or four times and straining it; or by subliming it, which is better.

XII. *To bring Silver into a Calx.*

This is done by amalgamating of it with Quick-silver, and then subliming of it; or by dissolving it in *Aqua fortis*, and precipitating it with the solution of Salt in fair water, and then washing it with warm water often to free it from the salts: or else by mingling the filings with sublimed Mercury, and in a Retort causing the Mercury to ascend, which will leave at bottom the Calx of Silver, fit for Jewels, &c.

XIII. *To blanch Silver.*

Take *Sal-Armoniack*, *Roch-Alum*, *Alum Plumosum*, *Sal Gem*, *Argol*, *Roman Vitriol*, of each alike; powder
and

and mix them, and dissolve them in fair water, in which boil the Silver so long, till you see it wonderful white.

XIV. *To colour Silver of a Gold colour.*

Take Salt-peter two pound, Roch-Alum five pound, mingle, and distil them, keeping the water for use. When you use it, melt the Silver, and quench it in the said water.

XV. *To tinge Brass of a Gold colour.*

Dissolve burnt Brass in *Aqua fortis* (made of Vitriol, Salt-peter, Alum, Verdigrise and Vermilion) and then reduce it again, and it will be much of a gold colour.

XVI. *To make Brass through white.*

Heat Brass red-hot, and quench it in water distilled from Sal-Armoniack, and Egg-shells ground together, and it will be very white.

XVII. *To make Brass white otherwise.*

Take Egg-shells and calcine them in a Crucible, and temper them with the whites of Eggs, let it stand so three weeks; heat the Brass red-hot, and put this upon it.

XVIII. *To make Brass.*

Take Copper three pounds, *Lapis Calaminaris* one pound in powder, melt them together the space of an hour, then put it out.

XIX. *The way to colour Brass white.*

Dissolve a penny weight of Silver in *Aqua fortis*, putting it to the fire in a vessel, till the Silver turn to water; to which add as much powder of white Tartar as may drink up all the water, make it into balls, with which rub any Brass, and it will be white as Silver.

XX. *To tinge Copper of a Gold colour.*

Take Copper, *Lapis Calaminaris*, of each four drachms, Tutty two drachms; heat the Copper red-hot twice, quenching it in piss: doing the like by the

Lapis and Tutty: take of the dissolved Copper half an ounce, adding to it Honey one ounce, boil them till the Honey look black and is dry that it may be powdered, which then beat with the *Lapis* and Tutty: boil them again, till the Copper is melted, and it is done.

XXI. *Another way to make Copper of a Gold colour.*

Take the Gall of a Goat, Arsnick, of each a sufficient quantity, and distil them; then the Copper being bright being washed in this water, will turn into the colour of Gold.

XXII. *Another way to do the same.*

Melt Copper, to which put a little *Zink* in filings, and the Copper will have a glorious golden colour.

XXIII. *To make Copper of a white colour.*

Take Sublimate, Sal-Armoniack, of each alike; boil them in Vinegar, in which quench the Copper being made red-hot; and it will be like Silver.

XXIV. *Another way to whiten Copper.*

Heat it red-hot divers times, and quench it in oyl of Tartar *per deliquium*, and it will be white.

XXV. *Another way to whiten Copper.*

Take Arsnick three ounces, Mercury Sublimate two ounces, Azure one ounce, mix them with good and pure grease like an ointment, with which anoint any Copper vessel, then put that vessel into another, and set it into a digestive heat for two months, after which cleanse it with a brush and water, and it is done.

XXVI. *Another way to whiten Copper.*

Take Arsnick calcined with Salt-peter, and Mercury Sublimate, which cast upon melted Copper, and it will be white like Silver.

XXVII. *To soften Copper.*

Melt burnt Brass with *Borax* in a Crucible, quench
it

it in Linseed-oyl, and then beat it gently on an Anvil; boil it again and quench it in oyl as before, doing thus five or six times, till it is soft enough; and this will neatly unite with Gold, of which you may put in more by half than you can of other Brass.

XXVIII. *To tinge Iron with a Gold colour.*

Lay in a Crucible plates of Iron and Brimstone, *stratum super stratum*, cover and lute it well, and calcine in a furnace, then take them out and they will be brittle: put them into a pot with a large mouth, & put in sharp distilled vinegar, digesting till they wax red over a gentle heat: then decant the vinegar, and add new, thus doing till all the Iron be dissolved; evaporate the moisture in a glass Retort or *Vesica*, and cast the remaining powder on Silver, or other white Metal, and it will look like Gold.

XXIX. *To make Iron or Silver of a Brass colour.*

Take Flowers of Brass, Vitriol, *Sal-Armoniack*, of each alike in fine powder; boil it half an hour in strong vinegar, take it from the fire, and put in Iron or Silver, covering the vessel till it be cold, and the Metal will be like to Brass, and fit to be gilded: or rub polished Iron with *Aqua fortis* in which filings of Brass are dissolved.

XXX. *To tinge Iron into a Brass colour.*

Melt the Iron in a Crucible, casting upon it Sulphur *vive*, then cast it into small rods, and beat it into pieces (for it is very brittle) then in *Aqua fortis* dissolve it, and evaporate the *menstruum*, reducing the powder by a strong fire into a body again, and it will be good Brass.

XXXI. *To whiten Iron.*

First purge it, by heating it red-hot, and quenching it in a water made of Lye and Vinegar, boild with Salt and Alum, doing this so often till it is somewhat white-

whitened. The fragments of the Iron beat in a mortar till the Salt is quite changed, and no blackness is left in the Liquor of it, and till the Iron is cleansed from its dross: then *Amalgamate* Lead and Quick-silver together, and reduce them into a powder: lay the prepared plates of Iron and this powder *stratum super stratum* in a Crucible, cover it, and lute it all over very strongly, that the least fume may not come forth, and put it into the fire for a day; at length encrease the fire, so as it may melt the Iron (which will quickly be) and repeat this work till it is white enough: It is whitened also by melting with Lead, the Marchasit or fire-stone and Arsnick. If you mix a little Silver (with which it willingly unites) with it, it gives a wonderful whiteness, scarcely ever to be changed any more, by any art whatsoever.

XXXII. *To keep Iron from Rusting.*

Rub it over with vinegar mixt with Ceruse; or with the marrow of a Hart: if it be rusty, oyl of Tartar *per deliquium* will presently take it away and cleanse it.

XXXIII. *To cleanse Brass.*

Take *Aqua fortis* and water of each alike, shake them together, and with a wollen rag dipt therein rub it over: then presently rub it with an oylly cloth; Lastly, with a dry wollen cloth dipt in powder of *Lapis Calaminaris*, it will be clear and bright as when new.

XXXIV. *To soften Iron.*

Take Alum, Sal-Armoniack, Tartar, of each alike, put them into good Vinegar, and set them on the fire, heat the Iron, and quench it therein: or quench it four or five times in oyl, in which melted Lead hath been put six or seven times.

XXXV. *To make Iron of a Gold colour.*

Take Alum of Melancy in powder, Sea-water; mix them: then heat the Iron red-hot, and quench it in the same.

XXXVI. *To make Iron of a Silver colour.*

Take powder of Sal-Armoniack, unslak'd-lime, mix and put them into cold water, then heat the Iron red-hot, quench it therein, and it will be as white as Silver.

XXXVII. *To soften steel to grave upon.*

This is done with a *Lixivium* of Oak-ashes and unslak'd-Lime, by casting the Steel into it, and letting it remain there fourteen days. Or thus, take the Gall of an Ox, man's Urine, Verjuice, and juice of Nettles, of each alike, mix them; then quench Steel red-hot therein four or five times together, and it will become very soft.

XXXVIII. *To harden Iron or Steel.*

Quench it six or seven times in Hogs blood mixed with Goose-grease, at each time drying it at the fire before you dip it again, and it will become very hard and not brittle.

XXXIX. *To solder on Iron.*

Set the joynts of Iron as close as you can, lay them in a glowing fire, and take of Venice-glass in powder, and the Iron being red-hot, cast the powder thereon, and it will solder of it self.

XL. *To counterfeit Silver.*

Take Crystal Arsnick eight ounces, Tartar six ounces, Salt-peter two ounces, Glass one ounce and an half, Sublimate half an ounce: make them severally into fine powder and mix them: then take three pound of Copper in thin plates, which put into a Crucible (with the former powder *stratum super stratum*) to calcine, covering it and luting it strongly, let it stand in the Furnace for about eight or ten hours: then

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take

take it out, and (being cold) break the pot, and take out all the matter, and melt it with a violent fire, casting it into some mold. Then take purged Brass two pound, of the former metal one pound; melt them together, casting in, now and then, some of the aforesaid powder, after which add half as much of fine Silver melting them together, and you have that which is desired: lastly, to make it as white as Silver, boil it in Tartar.

XLII. Another way to counterfeit Silver.

Take purified Tin eight ounces, Quick-silver half an ounce, and when it begins to rise in the first heat, take powder of Cantharides, and cast into it, with a lock of hair, that it may burn in it; being melted put into it the powder aforesaid, then take it suddenly from the fire, and let it cool.

XLII. To purge the Brass.

It is cleansed or purged, by casting into it when it is melted, broken Glass, Tartar, Sal-Armoniack and Salt-peter, each of them by turns, by little and little.

XLIII. To tinge Lead of a Gold colour.

Take purged Lead one pound, Sal-Armoniack, in powder, one ounce, Salt-peter half an ounce, Sal-Elebrot two drachms; put all into a Crucible for two days, and it will be thoroughly tinged.

XLIV. To purge Lead.

Melt it at the fire, then quench it in the sharpest Vinegar; melt it again and quench it in the juice ofcelandine: melt it again and quench it in Salt-water: then in vinegar mixed with *Sal-Armoniack*: and lastly melt it, and put it into ashes, and it will be well cleansed.

XLV. To make Lead of a Golden colour.

Put Quick-silver one ounce into a Crucible, set it over the fire till it is hot, then add to it of the best leaf-

leaf-gold one ounce, and take it from the fire, and mingle it with purified Lead melted one pound; mingle all well together with an Iron rod, to which put of the filtrated solution of Vitriol in fair water one ounce; then let it cool, and it will be of a gold colour. Dissolve the Vitriol in its equal weight of water.

XLVI. To take away the ringing and softness of Tin.

Melt the Tin, and cast in some Quick-silver, remove it from the fire, and put it into a glass Retort, with a large round belly; and a very long neck, heat it red-hot in the fire, till the Mercury sublimes and the Tin remains at bottom; do thus three or four times. The same may be done by calcining of it three or four times, by which means it will sooner be red-hot than melt.

XLVII. To take away the softness and creaking noise of Tin.

This is done by granulating of it often, and then reducing it again, and quenching it often in vinegar and a Lixivium of Salt of Tartar. The creaking noise is taken away by melting it seven or eight several times & quenching it in Boys Urine, or else oyl of Walnuts.

XLVIII. To take away the deaf sound of Tin.

This is done by dissolving it in *Aqua fortis* over a gentle fire, till the water fly away: doing thus so long till it is all turned to a *calx*; which mixed with *calx* of Silver, and reduced, performs the work.

XLIX. To make that Tin crack not.

Take Salt, Hony, of each alike, and mix them: melt your Tin and put it twelve or more times into it, then strain out the Tin, and it will purge and leave cracking; put it into a Crucible, which lute, and calcine it four and twenty hours, and it will be like *calx* of Gold.

L. To take away the brittleness of any Metal.

First calcine it and put it under dung, then do thus; when it is red-hot at the fire, or melted, quench it often in *Aqua vitæ* often distilled; or use about them Rosin or Turpentine, or the oyl of it, or wax, suet, Euphorbium, Myrrh, artificial Borax: for if a Metal be not malleable, unctuous bodies will oftentimes make them softer; if all these, or some of these be made up with some moisture into little cakes: and when the metal yields to the fire, by blowing with the bellows, we cast in some of them and make them thick like mud, or clear, then set the Metal to the fire, that it may be red-hot in burning coals, take it forth and quench it in them, and so let it remain half an hour to drink in. Or anoint the Metal with Dogs grease, and melt it with it, for that will take away much of the brittleness of it, and make it so that it may be hammered and wrought.

LI. *To colour Metal like Gold.*

Take Sal-Armoniack, White Vitriol, Stone-salt, Verdigrise, of each alike, in fine powder; lay it upon the Metal, then put it into the fire for an hour, take it out and quench it in Urine, and the Metal will have the colour of Gold.

LII. *To make a kind of Counterfeited Silver of Tin.*

This is done by mingling Silver with Tin melted with Quick-silver, continuing it long in the fire, then being brittle, it is made tough, by keeping it in a gentle fire or under hot embers (in a Crucible) for about twenty four hours.

LIII. *To solder upon Silver, Brass, or Iron.*

Take Silver five peny weight, Brass four peny weight, melt them together for soft solder, which runs soonest.

Take Silver five peny weight, Copper three peny weight, melt them together for hard Solder.

Beat the Solder thin and lay it over the place to be Soldered,

Soldered, which must be first fitted, and bound together with Wire as occasion requires: then take Borax in powder, and temper it like pap, and lay it upon the Solder, letting it dry, then cover it with quick coals and blow, and it will run immediately; then take it presently out of the fire, and it is done.

Note, 1. If a thing is to be Soldred in two places, (which cannot be well done at one time) you must first Solder with the hard Solder, and then with the soft; for if it be first done with the soft, it will unfold again before the other be Soldred. 2. That if you would not have your Solder run about the piece to be Soldred, rub those places over with Chalk.

LIV. *To make the Silver Tree of the Philosophers.*

Take *Aqua fortis* four ounces, fine Silver one ounce, which dissolve in it: then take *Aqua fortis* two ounces, in which dissolve Quick-silver: mix these two Liquors together in a clear glass, with a pint of pure water; stop the glass close, and after a day, you shall see a Tree to grow by little and little, which is wonderful and pleasant to behold.

LV. *To make the Golden Tree of the Philosophers.*

Take oyl of Sand or Flints, oyl of Tartar *per deliquium*, of each alike, mix them well together, then dissolve Sol in *Aqua Regis*, and evaporate the *menstruum*, dry the Calx by the fire, but make it not too hot (for then it will lose its growing quality) break it into little bits (not into powder) which bits put into the aforesaid liquor, a fingers breadth one from another in a very clear glass, keep the liquor from the Air, and let the Calx stand still, and the bits of Calx will presently begin to grow: first swell; then put forth one or two stems; then divers branches and twigs, so exactly, as you cannot but wonder to see.

Where note, that this growing is not imaginary but real.

LVI. *To make the Steel Tree of the Philosophers.*

Dissolve Steel in rectified spirit or oyl of Salt, so shall you have a green and sweet solution, smelling like Brimstone; filter it, and abstract all the moisture with a gentle heat, and there will distil over a liquor, as sweet as rain water (for Steel by reason of its dryness detains the Corrosiveness of the spirit of Salt which remaineth in the bottom, like a blood-red mass, and it is as hot on the tongue as fire:) dissolve this blood-red mass in oyl of Flints or Sand, and you shall see it grow up in two or three hours like a Tree with stem and branches.

If you prove this Tree at the test, it will yield good Gold, which it draweth from the oyl of Sand or Flints; the said oyl being full of a pure golden Sulphur.

LVII. *To make oil of Flints or Sand.*

Take of most pure Salt of Tartar in fine powder twenty ounces, small Sand, Flints, Pebbles, or Crystals in fine powder five ounces, mix them; put as much of this as will fill an Egg-shell into a Crucible, set it in a Furnace, and make it red hot, and presently there will come over a thick and white spirit, take out the Crucible whilest it is hot, and that which is in it, like transparent glass, keep from the Air; after beat it to powder, and lay it in a moist place, and it will dissolve into a thick, fat oyl, which is the oyl of Flints, Sand, Pebbles or Crystals. *This oyl precipiteth Metals, and makes the Calx there more heavy than oyl of Tartar doth; it is of a golden nature, and extracts colours from all Minerals; it is fixed in all fires, maketh fine Crystals, and Borax, and maturateth imperfect Metals into Gold.*

LVIII. *To melt Metals quickly.*

Take a Crucible, and make in it a lay or course of the powder of any Metal, then lay upon it a lay of Sulphur,

Sulphur, Salt-peter and Saw-dust, of each alike mixed together, put a coal of fire to it, and the Metal will immediately be in a mass.

LIX. He that shall observe the work and reason of the Silver, Golden and Steel Trees, may in like manner produce the like out of the Calx of other Metals.

LX. *To whiten Silver, &c.*

Silver vessels or instruments boiled with Salt, Alum, and Tartar, gives them that whiteness and clearness, which they would scarcely be brought to by brushing, Pumice-stone, or Putty: old sullied pieces may be brought in a trice to the like fairness, by the help of Warm *Aqua fortis*.

LXI. *To blanch Venus.*

Take Arsenick 8 ounces: Sal-niter, white Tartar, of each two ounces, Borax one ounce: being in fine powder, Cement Venus therewith, by laying thin plates, lay upon lay, after 48 hours of a Cementing heat (the Crucible being strong, well stopt, or covered and luted strongly) encrease the fire and cause it to melt all down together.

LXII. *Another way to do the same.*

Sublime Rasped or granulated Jupiter with Niter into flowers, of which take one ounce: Mercury sublimate as much; dissolve each in *Aqua fortis*: mix the solutions, and evaporate, or draw off to dryness. One ounce of this powder will blanch four or five ounces of Venus, without ever Tarnishing.

LXIII. *Another way to do the same.*

1. Take white wine Vinegar, strong Lie made of Wood ashes, so strong as to bear an Egg, of each four pounds: Sulphur, Hogs-blood, of each one pound: powder the Sulphur, mix altogether, and digest in an earthen pot close covered for eight days,

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then

then strain it. 2. Take Venus eight pounds: melt it and quench it in the aforesaid Lye: melt it again, and quench again; this do for four times, so will the Venus be in measure prepared. 3. Take white Arsenick, Sheeps suet tried, of each a pound: white Lead four ounces: boil altogether in a Kettle, continually stirring them, till they boil to a powder, which keep for use. 4. Take the afore prepared Venus, melt it now a fifth time, to which put of your prepared powder of Arsenick, a little and a little at a time, by degrees, (the Venus being first melted) stirring it with a wooden stick, till it is dissolved in the metal, then cast it into a close Ingot. The former powder will serve for eight pounds of Venus.

LXIV. Another way to do the same.

1. Take Arsenick sublimed two ounces: common salt two ounces: sublime them together three times, then is it fixed. 2. Take fine Luna in filings or leaves, half an ounce: Mercury sublimate a sufficient quantity, grind well upon a Marble stone; to which add the former prepared Arsenick, with some fixed sal Armoniack. 3. Grind them well together with Wine Vinegar distilled, in which some Borax has been dissolved; then let them dry: being dried wet them again, with the said Vinegar, and dry again upon a soft fire: do so five times. 4. Take fine Luna one ounce: and as much of the aforesaid medicine, Venus prepared eight ounces: mix and melt them together: it will be in appearance next to perfect.

LXV. To fix Sal Armoniack for this Work.

1. Take Sal Armoniack sublimed to a perfect whiteness, put it into a glass Alembick with head and receiver, casting upon the Sal Armoniack some good distilled Vinegar, to overtop it a hand breadth,
distil

distil upon a soft fire. 2. Then put upon it more fresh Vinegar, and distil again: this repeat, till the Sal-Armoniack remains in the bottom; after which let the fire go out of it self, and keep the oyl close stopt for use. 3. If you take Mercury two ounces, and make it hot in the fire: then drop on it three drops of this oyl; the Mercury will be congealed into a pure Metal: of this, one part will make ten parts of Venus, as fair as Silver: the ten parts of Venus being first melted, and the Mercury one part being cast upon it.

LXVI. *To fix Arsenick.*

Take a strong Lye of Ashes and Quick-lime, filter it; in which dissolve Arsenick: then evaporate the humidity by boyling, and the Arsenick will be prepared and fixt.

LXVII. *To whiten Copper or Brass superficially, as white as Silver.*

Take Sal-Armoniack, Alum, Niter, of each alike quantity: put to it a little of the filings of Silver refined, or leaf Silver: mix them well together; and put it into the fire, till it be red-hot in a Crucible, and till it has done smoaking. Then moisten this powder with spittle, and rub your Copper or Brass therewith, and it will be white.

LXVIII. *To Gild Silver, Copper, and Brass.*

1. Cleanse the Metal with *Aqua fortis*, by lightly washing it therewith, and immediately throwing it into fair water, or by heating it red-hot, and scouring it with Salt and Tartar, and fair water, with a small wire brush. 2. Dissolve some fine Silver in *Aqua fortis* in a broad bottomed Vessel of Glasse or Glased Earth, then over a Chafing-dish of Coals evaporate away the *Aqua fortis*. 3. On the remaining dry Calx put water five or six times its quantity, or as much as will

will be needful perfectly to dissolve it; this water with the like heat evaporate: on which put more fresh water and evaporate again; and if need be the third time; making the fire towards the latter end so strong, as to leave the Calx perfectly dry, which if your Silver be good, will be of a good white.

4. Take of this Calx, common Salt, Crystals of Tartar, of each alike in quantity or bulk, not weight: mix all well; then put the Metal into fair water, and take of the aforefaid powder with your wet fingers, and rub it well on, till you find every little cavity of the Metal sufficiently silvered over. 5. If you would have it richly done, you must rub in more of the powder, and lastly, wash the silvered Metal in fair water, and rub it hard with a dry cloth, that it may look smooth and bright. 6. This though done without Quick-silver, may last some years, and when the Silver begins to wear off, may as easily be renewed

LXIX. *To Gild Iron and Steel.*

1. You must make your Iron or Steel have the colour of Brass thus: polish the Iron or Steel, then rub it with *Aqua fortis*, in which filings of Brass have been dissolved: the same understand of Silver. 2. An Amalgama of Gold and Mercury with which Gilders gild Silver, Brass, and Copper, will not gild Iron or Steel; but thus it may be done: Coat the Iron or Steel with Copper by dissolving very good Vitriol of Copper in warm water, till the Liquor be satiated with the Vitriol: then immerse several times in the solution the Iron or Steel, first scoured till it be bright, and suffering it to dry each time of its self; for by this immersion being repeated often enough there will precipitate upon the Iron, enough of the cuperous particles to fill the superficial pores of the
Iron.

Iron. 3. By this safe and easie way, having overlaid the Iron with Copper, you may gild it as Copper, either by the aforesaid Amalgama, or by the former Section of this Chapter.

LXX. *To prove the goodnes of Sublimate.*

1. Cast it on the Coals, and if it is good, it will burn with a blew flame; but if it make any other colour, it is naught, and has Arsenick in it. 2. *Or thus.* Take the Sublimate, and drop thereon a few drops of *Oleum Tartari per deliquium*: if it turns the Sublimate of a deep yellow, reddish, or orange-tawny, it is good; but if not, or it be black, there is Arsenick in it.

LXXI *Another way to fix Sal Armoniack.*

Grind it very well, put it in a Coffin of Paper, which put in a pot full of Quick-lime in fine powder, that the paper may be in the midst of the lime: then cover the pot well and lute it close, and put it in a potters furnace, and it will be fixed.

LXXII. *To make an Oyl which gives the Colour of Gold.*

Make a strong Lye with Lime and Tartar calcined with Alkali: in it dissolve Sulphur in powder and Saffron of Mars; then put it into the fire, and make it boyl till it waxes red: after put all into a glass bottle or Alembick, with a receiver: distil and take the water; this water cohobate 12. times, or untill you see a whiteness go forth of the Alembick. The sign being come, all that which remains in the bottom, is a fixt Oyl, that which does give the true Colour of Gold, to whatsoever is put into it, and is an excellent secret in other Chymical works.

LXXIII. *An Oyl of Gold.*

1. Take Sulphur Vive, Niter; of each a like quantity, distil, and it will be white and fixed. 2. After the flame sublime this fixed Sulphur three times with equal

equal weight of Sal-Armoniack, which resolve again *per deliquium*. 2. Take a sufficient quantity of this dissolved liquor, and cast it upon a Golden Duckate in flux, and it will become an Oyl. 4. This oyl becoming cold will congeal, and one part thereof transmutes

transmutes 50. Parts of Mercury.

LXXIV. *To make living silver or Gold.*

1. Take of the red Lyon (i. e. red native Cinnaber) 12. parts, pulverise it well: then grind it with one part of Calx of fine silver, or purified Gold. 2. Put all into a small bolt-head, set it in sand to the neck; luting the neck of the glass very well. 3. Give the first degree of fire for a week: the next week, the second degree: then the third degree: and the 4th degree, the fourth and last week to a hissing degree, that is if you let a drop of water fall upon the sand, it will hiss. 4. Then let the fire go out, and cut the glass with a ring: take the Crystalline matter like (a ring near the neck of the glass) pulverise and grind it with its weight of the calx of Sol or Luna aforesaid. 5. Pass the aforementioned four degrees in 8 hours to a hissing; open the glass as before, and take the starry Crown, which is the living silver, which augment by digestion, with a twelfth part of Luna or Sol at a time, as often as you please, or till you have a sufficient quantity of living Luna or Sol. 6 Take a small quantity of this living Sol or Luna, and digest it in Ashes, until it changes colours, and towards white or red Earth. 7. Then take this white or red Earth, with amalgama, with living silver and Calx: digest again in a glass Hermetically sealed; till it come to perfect whiteness or redness.

LXXV. *To whiten Copper or Iron.*

Take Calx of Silver, grind it with 2 parts of Cal-cined precipitate Arsenick, and one part of white precipitate

precipitate Mercury, imbibe them with water made of Sal-Niter, Sal-Armoniack and Litharge, of each equal parts; do this, till they have drunk up their weight of the water: put one part hereof on 4 parts of prepared Copper or Iron.

LXXVI. *Another way to do the same.*

Take Calcined Silver, Tin Calcined and dissolved, of each a like quantity: mix, dry, and cover it with twice as much sublimed Arsenick.

LXXVII. *Another way to do the same.*

Take Calcined Silver, Arsenick, Sulphur sublimed and ground, Sal-Armoniack, of each a like quantity: mix, & sublime all thrice; cast one part upon 6 parts of prepared Iron or Copper.

LXXVIII. *A Good Dealbation of Venus.*

Take Realgar one ounce: Argent Vive sublimed 3 ounces and a half: Tartar Calcined an ounce: grind and incorporate, and put them into a vial with a neck 12 inches long, and its Orifice so wide as two fingers may enter: lute it, and set it over a fire covered with a cloth. First make a gentle fire for a quarter of an hour; afterwards augment the fire underneath, and round about, till the furnace be very hot and red. When all is cold, break the vessel, and take out the metalline matter. This may easily be brought to perfection.

LXXIX. *Another for the same purpose.*

Upon Tutia sublime one part of Mercury sublimate and two parts of Arsenick sublimed, untill it shall have ingress. This clearly and very speciously whitens Venus.

LXXX. *Another for the same.*

Imbibe 3 parts of Mercury sublimed, and two parts of Arsenick sublimed with 3 parts Litharge dissolved: to these eight add other 8 parts of Arsenick sublimed: grind

grind them together, and flux them with Oyl of Tartar, so may you (with it) whiten prepared Venus at pleasure.

LXXXI. *Another for the same.*

Grind Metalline Arsenick with as much Calx of Luna, and imbibe the mixture with water of Sal-Armoniack; dry and grind: afterwards dissolve salt of Tartar in water of salt Peter; with which Oyl imbibe the medicine, and dry it. Repeat, this thrice incrating and drying. This is an admirable thing.

LXXXII. *Another for the same.*

Imbibe Jupiter Calcined, washed and dryed, so often with Metalline Arsenick, with half as much sublimed Mercury, till it flows and enters Venus; for it whitens the same (if first prepared) gloriously.

LXXXIII. *Another for the same.*

Upon Tutia one part sublimed, dissolved, and coagulated, sublime white Arsenick three parts; reiterate the sublimation upon it four times, that it may have ingress. With them adjoyn half as much (as the whole is) of sublimate Mercury, grinding and incrating 4 times with water of Sal-Armoniack, Niter and Tartar, of each alike. With this when Coagulated, Cement prepared plates of Venus, and melt, and you will have a very beautifull metal.

LXXXIV. *Another for the same purpose.*

Grind Venus Calcined and incrated, to which add Arsenick sublimed, and half a part of Mercury sublimed; with which being well ground and mixed, add a little water of Sal-Armoniack, and incrating upon a Marble: dry and sublime; revert the sublimate upon the fæces, again imbibing; do so three times: the fourth time imbibe with the water of Niter, and sublime what can be sublimed: reiterate this work, till it remain fluid in the bottom. This upon Copper will make a glorious whiteness.

C H A P. XXX.

Of the Instruments and Materials of Casting.

I. **H**E that would learn to cast must be provided of all the chief Tools thereto belonging; which are 1. *A Trough.* 2. *Sand.* 3. *A Flask.* 4. *Skrew.* 5. *Tripoli.* 6. *The Medal or Form.* 7. *A Furnace.* 8. *Crucibles.* 9. *A Pipe.* 10. *Tongs.* 11. *Two Oak Plates.* 12. *Pledgets of wool.* 13. *Oyl and Turpentine.* 14. *A Hares Foot.* 15. *Brushes.*

II. The *Trough* is a four-square thing about half a foot deep, or something more; and its use is to hold the *Sand*.

III. Of *Sand* there are various sorts, the chief are *High-gate Sand*, and *Tripoli*; the which to make fit for the work you must order thus:

If it is High-gate Sand, you must finely sift it; if Tripoli, you must first beat it fine, then sift it through a fine Sieve: to either of these fine Sands you must put of pure fine Bole (an ounce to nine ounces) well beaten, dissolved in water, and lastly reduced into fine powder; which powders you must moderately moisten with this Magisterial water, viz. filtrated Brine made of decrepitated common Salt: or the same, mixed with glair of Eggs.

IV. The *Flask* is a pair of *Oval Irons*, containing only sides to hold the *Sand*, which must be pressed hard thereinto: and a passage or mouth for the *Metal* to run in at.

V. The *Skrew* is an *Iron Press*, between which the *Flask* is put and prest, after that it is filled with *Sand*, and hath received the form or impression to be cast.

VI. *Tripoli*

VI. *Tripoli* is that of which the second sort of Sand is made, which here ought to be calcined and beaten into impalpable powder, to strew over the sandy moulds; first that the sides of the Flask may not cleave together when they are full; secondly that the thing cast may have the perfect form and impression, without the least scratch or blemish imaginable.

VII. The *Medal* or Form, is that which is to be impressed upon the Sand, whose likeness we would imitate.

VIII. The *Furnace* is that which contains the fire, where the Crucible is put, for the Metal to melt in, which is generally melted with Charcoal.

IX. The *Crucibles* are calcining or melting pots, (commonly three-square) made so as they may endure the fire all over, in which the Metal is to be melted.

X. The *Pipe* is a hollow Reed, or piece of Tin, to blow coals and filth out of the Crucible.

XI. The *Tongs* are a crooked Instrument to take coals out of the Crucible with, as also to stir and repair the fire; and to take the pot out of the Furnace when you go to cast.

XII. The *two Oak plates* are to be smooth, and to be put between the Flask and the sides of the Skrew, on each side.

XIII. *Pledgets of wool* are to be put between the Oak plates and the Sand, to fill up empty spaces if there be any.

XIV. The *Oyl and Turpentine* is to wet some paper or cotton threads, which must be set on fire, to smoak the Impression or Mould (being dry) that the Metal may run the better.

XV. The *Hares-foot* is to wipe the hollow places in the Mould, if they should be too much filled with smoak.

XVI. The

XVI. The *Brushes* ought to be two, to wit, one with thick bar Wire strings, another with Hogs-bristles, wherewith the work (both before and after casting) ought to be rubbed and cleansed.

C H A P. XXXI.

The way and manner of Casting.

I. **W**ASH the Medal in Vinegar, in which put some Salt and Straw-ashes; and rub it well with the afore said hair-brush, then wash it with water, and dry it well.

II. Place the female part of the Flask upon one of the Oak plates; so that the middle part, *viz.* that which is joyned to the other, may lie downwards.

III. Then put the cleansed Medal in the Flask upon the Oak plate, in a right line to the mouth of the Flask; and if there be two, let them be placed so, that there may be a place left in the middle for the melted Metall to run in at.

IV. Then take of the afore said earth or sand prepared, (that is, so much moistened with the Magisterial water, that being crushed between the hands or fingers, it will not stick but like dry flour, and will stand with the print of the hand closed together) and press it on well in the Flask upon the Medal with the fleshy part of your fingers or hand; then with a rule strike off all the superfluous sand that sticks about the Flask.

V. This done, the pledgets of wool, or a woollen cloth, must be laid upon it, and then the other Oak plate, and then turned up with both hands, the plates being both held close.

VI. Then taking off the upper plate; put upon it
S
the

the male part of the Flask, which fill with sand in like manner (the Medal being now between) pressing it down as before, and then with a ruler striking away the superfluous sand.

VII. Upon which lay a woollen cloth, and gently lift off the top, or upper part of the Flask, so that the medal may be taken forth.

VIII. All things being thus done with a knife (or some such like) cut the passage for the Metal, which let be a little dry'd: then,

IX. Either strew over the side of the impression (now taken off) with a calcined Tripoli ground impalpable; applying it upon the female Flask again; turn the female Flask uppermost, which take off, and strew it in like manner, with the calcined Tripoli, and putting them together again, press them so hard, as that the fine Tripoli may receive the most perfect impression of the Medal, which then take out, by separating the sides of the Flask, and gently shaking that part which holds it, till it falls out.

X. Or with Cotton wet in Oyl and Turpentine and set on fire let the impression be smoaked; and if any superfluous fume be taken, wipe it off with a Hares-foot. *Spirits of wine is now used*

XI. Then joyn the sides of the Flask together, putting them with the woollen cloaths between the Oaken plates, which put into the Press, and skrew them a little.

XII. Then the Metal being melted, put it into the mould being hot, which if it be Silver, or blanch'd Brass, or Copper, it will run well enough.

XIII. But if it runs not well, you may cast in about the hundredth part of Mercury sublimate, and an eighth part of Antimony; for so it will not only run well, but also be a harder Metal.

XIV. Lastly,

XIV. Lastly, the Medal being cooled, take it neatly out, and keep it.

Where note, 1. That so long as the Impression or Mould is not spoiled, you may still cast more Medals therein; but when it decays you must perfectly renew the whole work as at first. 2. That you may blanch them with a pure whiteness by the ninth Section of the nine and twentieth Chapter of this Book: or thus, if they be of whitened Brass, Take Sal-Armoniack one ounce and an half, Salt-peter two ounces and an half. Leaf-silver twenty four grains; mix them and evaporate them in a luted Crucible; having a hole in the cover, till all the moisture is gone; being cold beat all into a fine powder; of which take one ounce, Salt, Alum, Tartar, of each one handful, fair water a sufficient quantity; mix and boyl all in a glazed vessel, in which put the Medals, boiling them till they are purely white: then rub them with the Tartar in the bottom very well, wash them in fair water and dry them. 3. That if the Medals be of Gold, or of a golden colour, you may heighten it with Verdigrise and Urine. Ms -

C H A P. XXXII.

Of Glass and Precious Stones.

Cements

I. **T**O melt Crystal.

Beat Crystal to bits, and put them into an Iron spoon, cover it and lute it well, and heat it in the fire till it is red-hot, which quench in oyl of Tartar: this do so often, till they will easily beat to powder in a mortar, which will then easily melt.

This is of use to counterfeit Jewels with.

II. To make a Cement for broken Glasses.

Glair of Eggs mixed with Quick-lime will joyn broken

broken pieces of Glafs together, and all earthen-pots, so as that they shall never be broken in the same place again.

Or thus, Take old liquid Varnish, and joyn the pieces therewith; bind them together and dry them well in the Sun, or in an Oven, and they will never unglew again: but then put no hot liquor into them.

Or thus, Take White-lead, Red-lead, Quick-lime, Gum-sandrack, of each one ounce, mix all with glair of eight Eggs.

Or thus, Take White-lead, bole, liquid varnish as much as sufficeth.

Or thus, Take White-lead, Lime, glair of Eggs as much as sufficeth.

Or thus, Take fine powder of glafs, Quick-lime, liquid varnish, of each a sufficient quantity.

Or thus, Take Quick-lime powdered, liquid varnish, glair of Eggs of each alike: grind them upon a stone: this is a strong glew even for stones.

Or thus, Take calcined flints and Egg-shells of each alike, and with whites of Eggs and Gum-tragacanth, or dissolution of Gum-sandrack make glew, this in few days will be as hard as stone.

Or thus, Take calcined flints two pound, Quick-lime four pound, Linseed-oyl so much as may temper the mixture, this is wonderfull strong; but with liquid varnish it would be stronger.

Or thus, Take Fish glew, and beat it thin, then soak it in water till it is like paste, make rouls thereof which draw out thin: when you use it, dissolve it in fair water over the fire, letting it seeth a while, and scumming of it, and whilest it is hot use it. This not only cements glafs, but Tortoise-shell and all other things.

III. *To make Glass green.*

Green glass is made of Fern ashes, because it hath much of an Alkali Salt. Crystal or Venice-Glass is tinged green with Ore of Copper; or with the Calx of Copper five or six grains to an ounce.

IV. *To counterfeit a Diamond.*

Take a saphire of a faint colour, put it into the middle of a Crucible in Quick-lime, and put it into a gentle fire, and heat it by degrees till it is red-hot, keep it so for six or seven hours; let it stand in the Crucible till it is cold, (lest taking it out hot it should break) so will it lose all its colour, and be perfectly like a Diamond, so that no file will touch it: if the colour is not all vanished at the first heating, you must heat it again till it is perfect.

V. *To prepare the Salts for counterfeit Gems.*

The salts used in making counterfeit Gems, are chiefly two, the first is made of the Herb Kaly; the second of Tartar; their preparations are according to the usual way (but in Glass vessels.)

VI. *To prepare the matter of which Gems are made.*

The matter is either Crystal or Flint that is clear and white: put them into a Crucible in a reverberatory heat (the Crucible being covered) then take them out, and cast them into cold water, so will they crack and easily reduce to powder: of which powder take an equall quantity with Salt of Tartar (or *Sal Alkali*) to which mixture add what colour you please, which must be either Metalline or Mineral: put them into a very strong Crucible (filling it about half full) cover it close, and melt all in a strong fire till it becomes like glass.

Where note, in melting you must put an Iron rod into it, and take up some of it, and if it is free from bubbles, grains, or specks, it is fused enough: if not, you must fuse it till it is free.

VII. *To make a counterfeit Diamond of Crystal.*

Put Crystal in a Crucible, and set it in a Glass Furnace all night, and then bring it to fine powder, mix it with equal parts of *Sal Tartari*, digest all night in a vehement heat, but yet not to melt, then take them out, and put them into another vessel which will stoutly endure the fire; let them stand melted two days and take out the mass.

VIII. *To make a Chalcedon.*

Mingle with the powder of Crystal, a little calcined Silver, and let it stand in fusion twenty four hours.

IX. *To make counterfeit Pearls.*

Mix Calx of Luna and Egg-shells with Leaf silver ground with our best varnish, of which make paste, and having bored them with a Hogs bristle, dry them in the Sun, or an Oven.

X. *To counterfeit a Ruby.*

Take Sal-Alkali four ounces, Crystal three ounces, Scales of Brass half an ounce, Leaf-gold six grains mix all, and melt them in a Reverberatory.

XI. *To counterfeit a Carbuncle.*

Mix Crystal with a little Red-lead, putting it into a Furnace for twenty four hours, then take it out, powder and searce it, to which add a little calcined Brass; melt all again, and add a small quantity of Leaf-gold, stirring it well three or four hours, and in a day and night it will be done.

XII. *An Artificial Amethyst.*

Take Crystal one pound, Manganese one drachm, mix and melt them.

Or thus, Take Sal-Alkali three ounces, powder of Crystal four ounces, filings of Brass half an ounce, melt all in a strong fire.

XIII. *An Artificial Jacynth.*

Put Lead into a strong Crucible, and set it into a
Furnace,

Furnace, let it stand there about six weeks till it is like glass, and it will have the natural colour of a Jacynth not easily to be discerned.

XIV. *An Artificial Chrysolite.*

Mix with melted Crystal a sixth part of scales of Iron, letting it stand in a vehement fire for three days. *Or thus*, to the mixture of the *Topaze* add a little Copper.

XV. *An Artificial Topaze.*

To Crystal one pound, add *Crocus Martis* two drachms, Red-lead three ounces, first putting in the Lead, then the *Crocus*.

XVI. *Artificial Corals.*

Take the scrapings of Goats horns, beat them together and infuse them in a strong *Lixivium* made of *Sal fraxini* for five days: then take it out and mingle it with Cinnaber dissolved in water; set it to a gentle fire that it may grow thick; make it into what form you please, dry, and polish it. *Or thus*, Take *Minii* one ounce, Vermilion ground fine half an ounce, Quick-lime, and powder of calcined Flints, of each six ounces, a *Lixivium* of Quick-lime and Wine, enough to make it thick: add a little Salt, then make it into what form you please, and boil it in Linseed-oyl.

XVII. *An Artificial Emerald.*

Take Brass (three ounces) calcined in powder, which put again into the Furnace with oyl and a weaker fire: let it stay there four days, adding a double quantity of fine sand or powder of Crystal: after it is something hard, keep it at a more gentle fire for twelve hours, and it will be a lovely, pleasant and glorious green. *Or thus*, Take fine Crystal two ounces and an half, Sal Alkali two ounces, *flos aris* infused in Vinegar and strain'd one ounce, *Sal Tartari* one ounce and a half; mix and lute them into a crucible, and put all in-

to a Glafs-makers furnace for twenty four hours, and it will be glorious indeed. *Or thus*, Take Crystal ten ounces, *Crocus Martis*, and Brass twice calcined, of each one pound, mix and melt them, stirring them well with an Iron rod,

XVIII. *An Artificial Sapphire.*

To melt Crystal put a little *Zaphora* (two drachms to a pound of Crystal) then stir it continually from top to bottom with an Iron hook, till it is well mixed, keep it in the Furnace three days, and it is done: yet when it is well coloured, unless it be presently removed from the fire, it will lose its tincture again.

XIX. *Artificial Amber.*

Boil Turpentine in an earthen pot, with a little cotton (some add a little oyl) stirring it till it is as thick as paste, then put it into what you will, and set it in the Sun eight days, and it will be clear and hard, of which you may make beads, hafts for knives, and the like.

XX. *Another way to counterfeit Amber.*

Take sixteen yolks of Eggs, beat them well with a spoon; Gum-Arabick two ounces, Cherry-tree Gum an ounce, make the Gums into Powder, and mix them well with the yolks of Eggs; let the Gums melt well, and put them into a pot well leaded, then set them six days in the Sun, and they will be hard, and shine like glafs; and when you rub them, they will take up a Wheat-straw, as other Amber doth.

XXI. *To make yellow Amber soft.*

Put yellow Amber into hot melted wax well scum'd, and it will be soft, so that you may make things thereof in what form and fashion you please.

XXII. *Another Artificial Amber.*

Take whites of Eggs well beaten, put them into a vessel with strong white-wine Vinegar, stop it close, let it stand fourteen days, then dry it in the shade, and it will be like to Amber.

XXIII. *A-*

XXIII. *Another Artificial Amber.*

Break whites of Eggs with a sponge, take off the froth, to the rest put Saffron, put all into a glass close stopp'd, or into a Copper or brazen vessel, let it boil in a kettle of water, till it be hard; then take it out and shape it to your liking, lay it in the Sun, and anoint it often with Linseed-oyl mixed with a little Saffron; or else being taken out of the Kettle, boil it in Linseed-oyl.

XXIV. *To make white Enamel.*

Take Calx of Lead two ounces, Calx of Tin four ounces, make it into a body with Crystal twelve ounces, roll it into round balls, and set it on a gentle fire for a night, stirring it about with an Iron rod, till it is melted, and it is done.

XXV. *The general preparations and proportions of Mineral colours.*

Plates of Copper must be made red-hot, and then quenched in cold water; of which five or six grains mixed with Crystal and *Sal Tartari*, of each half an ounce, and melted, will colour a Sea-green. *Iron* must be made into a Crocus in a reverberatory fire; of which eight or ten grains will tinge the said ounce of mixture in a yellow or Hyacinth colour. *Silver* is to be dissolved in *Aqua fortis* and precipitated with oyl of Flints, then dulcified with water and dry'd; of this five or six grains to an ounce, gives a mixed colour. *Gold* must be dissolved in *Aqua Regis*, and precipitated with liquor of Flints, then sweetned and dry'd; of which five or six grains to one ounce gives a glorious Saphirine colour. *Gold* melted with *Regulus Martis nitrosus* five or six grains to one ounce, gives an incomparable Rubine colour. *Magnesia* in powder only ten or twelve grains to one ounce, makes an Amethyst colour. *Granata* in powder only ten or fifteen

fifteen grains to one ounce, will tinge the mass into a glorious Smaragdine colour, not unlike to the natural.

XXVI. *Lastly, Common Copper makes a Sea-green: Copper of Iron a Grass-green: Granats, a Smaragdine: Iron, Yellow or Hyacinth: Silver, White, Yellow, Green, and Granat: Gold, a fair Skie colour: Wismut, a common Blue: Magnesia, an Amethyst colour: Copper and Silver, an Amethyst colour: Copper and Iron, a pale green: Wismut and Magnesia, a purple colour: Silver and Magnesia, an Opal, and the like.*

XXVII. *To make Azure.*

Take Sal-Armoniack three ounces, Verdigrise six ounces, make them into powder, and put them into a glass with water of Tartar, so that it may be somewhat thick, stop the glass and digest in sand in Horse-dung for eight or ten days, and it will be good Azure.

XXVIII. *Another way to make good beyond Sea Azure.*

Beat common Azure with Vinegar, and anoint therewith thin plates of Silver, and put the same over a vessel full of Urine, which set over hot ashes and coals, moving and stirring it till it looks like good Azure.

XXIX. *To foliate Looking-Glasses.*

Take Jupiter and Saturn of each one part; melt them: and forthwith add of good Tin-glass two parts: carefully skim off the Dross, take it from the fire, and before it is cold put to it good Quick-silver ten parts: stir all together, and keep this foliating liquor in a clean new Glass for use. When you use it, strain it from its Dross, through a cloth.

XXX. *To reduce Crystal, Talck, Flints, &c. into fine Powder.*

1. Heat great lumps of Talck red-hot, and then cast them into cold water, and they will be immediately reduced into a mealy Calx, snow white. Where

note,

note, you must take English Talck, not Venetian, for that will not do. 2. After the same manner may *Crystals* and *Flint* be brought in a trice, into a very subtil powder.

XXXI. *To reduce Glass into its first principles.*

Take bits or powder of Glass, as much as you please; with an equal quantity of the Salt which Glass Men use in making of Glass: melt them together in a strong fire: then dissolve all the melted Mass in warm water; pour off the water, and you shall see no Glass, but sand in the bottom. Thus you see that the fusion of Glass is not the last fusion, nor beyond any reduction.

MS.

C H A P. XXXIII.

The ways and manner of Gilding.

I. *TO lay Gold on any thing.*

Take Red-lead ground fine, temper it with Linseed-oyl: write with it, and lay Leaf-gold on it, let it dry, and polish it.

II. *To lay Gold on Glass.*

Take Chalk and Red-lead, of each alike, grind them together, and temper them with Linseed-oyl: lay it on, and when it is almost dry, lay Leaf-gold on it; let it dry, then polish it.

III. *To gild Iron with a water.*

Take spring water three pound, Roch-Alum three ounces, Roman Vitriol, Orpiment, one ounce, Verdigrise twenty four grains, Sal-gem three ounces, boil all together, and when it begins to boil, put in Tartar and Bay-salt, of each half an ounce; continue the boiling a good while, then take it from the fire, strike

strike the Iron over therewith, dry it against the fire, and burnish it.

IV. *To lay Gold on Iron or other Metals.*

Take liquid Varnish one pound, oyl of Linseed and Turpentine, of each one ounce; mix them well together: strike this over any Metal, and afterwards lay on the Gold or Silver, and when it is dry polish it.

V. *To Gild Silver, or Brass with Gold water.*

Take Quick-silver two ounces, put it on the fire in a Crucible, and when it begins to smoak, put into it an Angel of fine Gold; then take it off immediately, for the Gold will be presently dissolved: then if it be too thin, strain a part of the Quick-silver from it, through a piece of Fustian: this done, rub the Gold and Quick-silver upon Brass or Silver, and it will cleave unto it, then put the said Brass or Silver upon quick coals till it begin to smoak, then take it from the fire, and scratch it with a hair brush; this do so long till all the Mercury is rubbed as clean off as may be, and the Gold appear of a faint yellow: which colour heighten with Sal-Armoniack, Bole and Verdigrise ground together and tempered with water.

Where note, that before you gild your Metal, you must boil it with Tartar in Beer or water, then scratch it with a brass wire brush.

VI. *Another water to gild Iron, Steel, Knives, Swords, and Armour with.*

Take Fire-stone in powder, put it into strong red Wine-vinegar for twenty four hours, boil it in a glazed pot, adding more Vinegar as it evaporates, or boils away: into this water dip your Iron, Steel, &c. and it will be black; dry it, then polish it, and you will have a gold colour underneath.

VII. *Another*

VII. *Another water to gild Iron with.*

Take Salt-peter, Roch-alum burnt, of each half an ounce, Sal-Armoniack an ounce, all being in fine powder, boil with strong Vinegar in a Copper Vessel; with which wet the Iron, &c. then lay on Leaf-gold.

VIII. *Another water to gild Iron with.*

Take Roch-Alum, and grind it with boys Urine, till it is well dissolved, with which anoint the Iron, heat it red-hot in a fire of wood coals, and it will be like Gold.

IX. *To gild Books.*

Take Bole-Armoniack four penny weight, Sugar-candy one penny weight, mix and grind them with glair of Eggs, then on a bound Book, (while in the press, after it hath been smeared with glair of Eggs, and is dried) smear the said composition, let it dry, then rub it well and polish it: then with fair water wet the edges of the Book, and suddenly lay on the gold, pressing it down with Cotton gently, this done, let it dry, and then polish it exactly with a tooth.

X. *Another way of gilding Iron.*

Take water three pound, Alum two ounces, Sal-gem three ounces, Roman Vitriol, Orpiment of each one ounce, *flor Aëris* twenty four grains; boil all with Tartar and Salt as at the third Section.

XI. *To make Iron of the colour of Gold.*

Take Linseed-oyl three ounces, Tartar two ounces, yolks of Eggs boiled hard and beaten two ounces, Aloes half an ounce, Saffron five grains, Turmeric two grains: boil all in an Earthen vessel, and with the oyl anoint Iron, and it will look like Gold. *If there be not Linseed-oyl enough, you may put in more.*

XII. *A Golden liquor to colour Iron, Wood, Glass, or Bones with.*

Take

Take a new laid Egg, through a hole at one end take out the white, and fill up the Egg with Quick-silver two parts, Sal-Armoniack finely powdered one part; mix them all together with a Wire or little stick: stop the hole with melted wax, over which put an half Egg-shell: digest in horse-dung for a month, and it will be a fine golden coloured Liquor.

XIII. *To gild Silk and Linnen.*

Take Glew made of Parchment, lay it on the Linnen, or Silk, &c. gently, that it may not sink: then take Ceruse, Bole and Verdigrise, of each alike, mix and grind them upon a stone: then in a glazed vessel mix it with varnish, which let simmer over a small fire, then keep it for use.

XIV. *Another of a pure Gold colour.*

Take juice of fresh Saffron, or (for want of it) Saffron ground, the best clear Orpiment of each alike: grind them with Goats gall or gall of a Pike (which is better) digest twenty eight days in horse-dung, and it is done.

XV. *To gild on Wood or Stone.*

Take Bole-Armoniack, oyl of Ben, of each a sufficient quantity; beat and grind them together: with this smear the wood or stone, and when it is almost dry, lay on the Leaf-gold, let it dry, then polish it.

XVI. *To gild with Leaf-gold.*

Take leaves of gold, and grind them with a few drops of honey, to which add a little gum-water, and it will be excellent to write or paint with.

XVII. *To gild Iron or Steel.*

Take Tartar one ounce, Vermilion three ounces, Bole-Armoniack, *Aqua-vita* of each two ounces, grind them together with Linseed oyl, and put thereto *Lapis Calaminaris* the quantity of a hassle-nut; and grind therewith in the end a few drops of varnish; take

take it off the stone, strain it through a linnen cloth (for it must be as thick as honey) then strike it over Iron or Steel, and let it dry; then lay on your Silver or Gold, and burnish it.

XVIII. *To colour Tin or Copper of a gold colour.*

Take Linseed-oyl, set it on the fire, scum it, then put in Amber, Aloes Hepatick, of each alike, stir them well together till it wax thick; then take it off, cover it close, and set it in the earth three days: when you use it, strike the Metal all over with it, with a pencil, let it dry, and it will be of a golden colour.

XIX. *To gild any Metal.*

Take strong *Aqua fortis*, in which dissolve fine Silver, to which put so much Tartar in fine powder, as will make it into paste, with which rub any Metal, and it will look like fine Silver.

XX. *To gild so as it shall not out with any water.*

Take Oker calcined, Pumice-stone of each alike, Tartar a little, beat them with Linseed-oyl, and five or six drops of varnish, strain all through a linnen cloth, with which you may gild.

C H A P. XXXIV.

Dying of Paper, Parchment, and Leather, &c.

I. **T***o make Paper waved like Marble.*

Take divers oyled colours, put them severally in drops upon water, and stir the water lightly: then wet the Paper (being of some thickness) with it, and it will be waved like Marble; dry it in the Sun.

II. *To write golden Letters on Paper or Parchment.*

This may be done by the ninth, tenth and twelfth Sections of the three and thirtieth Chapter of this Book:

Book : or write with Vermilion ground with Gum-Armoniack, ground with glair of Eggs, and it will be like gold.

III. *To Take out blots, or make black Letters vanish in Paper or Parchment.*

This may be done with Alum-water ; or with *Aqua fortis* mixed with common-water.

IV. *To make Silver Letters in Paper or parchment.*

Take Tin one ounce, Quick-silver two ounces, mix and melt them, and grind them with Gum-water.

V. *To write with green Ink.*

Take Verdigrise, Litharge, Quick-silver, of each a sufficient quantity, grind and mingle them with Urine, and it will be a glorious green like an Emerald to write or paint with.

Or thus, Grind juyce of Rue and Verdigrise with a little Saffron together ; and when you would write with it mix it with Gum-water : *Or thus,* Dissolve Verdigrise in Vinegar, strain it, then grind it with common water, and a little honey, dry it ; then grind it again with gum-water, and it is done.

VI. *To write on Paper or Parchment with blew Ink.*

Grind blew with honey, then temper it with glair of Eggs or Gum-water made of Ising-glass.

VII. *To dye Skins Blew.*

Take berries of Elder, or Dwarf-elder, first boil them, then smear and wash the Skins therewith, and wring them forth : then boil the berries as before, in the dissolution of Alum-water, and wet the Skins in the same water once or twice, dry them and they will be very Blew.

VIII. *To dye Skins into a reddish Colour.*

First wash the Skin in water and wring it well : then wet it with the solution of Tartar and Bay-salt in fair water, and wring it again : to the former dissolution,

lution, add ashes of Crab-shells, and rub the Skin very well therewith, then wash with common water and wring them out: then wash them with tincture of Madder, in the solution of Tartar, Alum and the aforesaid ashes; and after (if not red enough) with the tincture of Brazil.

IX. *Another way to dye them Red.*

Wash the Skins, and lay them in galls for two hours wring them out, and dip them into a colour made with *Ligustrum*, Alum and Verdigrise in water. Lastly, twice dye them with Brazil boiled with Lye.

X. *Another way to dye them Blew.*

Take the best Indico and steep it in Urine a day, then boil it with Alum, and it will be good. Or, temper the Indico with red Wine, and wash the Skins therewith.

XI. *To dye Skins Purple.*

Take Roch-alum, dissolve it in warm water, wet the Skins therewith drying, them again; then take rasped Brazil, boil it in water well, then let it cool; do thus thrice: this done, rub the dye over the Skins with your hand, which being dry polish.

XII. *To dye Skins of a sad Green.*

Take the filings of Iron and Sal-Armoniack of each, alike, steep them in Urine till they be soft, with which besmear the Skin, being stretched out, drying it in the shade, the colour will penetrate and be green on both sides.

XIII. *To dye Skins of a pure Skie Colour.*

For each Skin take Indico an ounce, put it into boiling water, let it stand one night, then warm it a little, and with a brush-pencil besmear the Skin twice over.

XIV. *To dye Skins of a pure Yellow.*

Take fine Aloes one ounce, Linseed-oyl two pound, dissolve or melt them, then strain it; besmear-

ing the Skins therewith, being dry, varnish them over.

XV. *To dye Skins Green.*

Take Sap-green, Alum-water, of each a sufficient quantity, mix and boil them a little: if you would have the colour darker, add a little Indico.

XVI. *To dye Skins Yellow.*

Infuse Wold in Vinegar, in which boil a little Alum: *Or thus*, having dyed them green by the fifteenth Section, dip them in decoction of Privet-berries and Saffron and Alum-water.

XVII. *To dye them of an Orange Colour.*

Boil Fustick-berries in Alum-water: but for a deep Orange, use Turmerick-root.

XVIII. *A liquor to gild Skins, Metals, or Glass.*

Take Linseed-oyl three pound, boil it in a glazed vessel till it burns a feather being put into it, then put to it Pitch, Rozin, dry varnish, or Gum-Sandrach, of each eight ounces, Aloes Hepatica four ounces; put all in powder into the oyl, and stir them with a stick, the fire being a little encreased: if the liquor is too clear or bright, you may add an ounce or two more of Aloes Soccatrine, and diminish the varnish, so the liquor will be darker and more like Gold. Being boiled, take it, and strain it, and keep it in a Glass for use: which use with a pencil.

Other staining Colours.

XIX. *To make a fine blew staining water.*

Make a weak Lixivium of Pot-ashes, or take lime water, put into it a sufficient quantity of Florey, and dissolve therein a little Alum, and stir it well over the fire; then take it off, and cast therein Wood Ashes, so will you have a fine blew.

XX. *A weaker Blew Staining water.*

Take water a sufficient quantity, dissolve therein a sufficient quantity of Florey blew, and a little Alum;

Alum; so will it be of a fainter colour than the former.

XXI. *A staining blew water, weaker than the latter.*

Take pure Well-water a quart: two shells full of Florey blew, mix them well together; and lay them on thin; This is the faintest of all the three.

XXII. *A deep green staining water.*

Take juyce of the greenest Worts half a pint, strain it through a Cloth; and dissolve therein a sufficient quantity of purified Verdigrise: mix them well together, and it will be a good colour. *How to purify Verdigrise see in my Doron, lib. 3. cap. 6. Sect. 13. §. 2. being so prepared, one ounce will be worth ten of that unprepared.*

XXIII. *Another green staining colour.*

First stain the Leather, Parchment, or Paper, with a Blew, and let it dry; then lay thereon a yellow staining colour, so will the green be much the better.

XXIV. *To make a light staining green colour.*

Take a pint of Wort made of Malt: and mix therewith a shell full of flory, stirring them well together: first stain with this, then upon this staining, lay yellow, till it grows green: the more of your yellow staining liquor you lay on, the better will your green be.

C H A P. XXXV.

Dying Of Wood, Horns and Bones, &c.

I. **T**O dye Elder, Box, Mulberry-tree, Pear-tree, Nut-tree of the colour of Ebony.

Steep the wood in Alum-water three or four daves,

then boil it in common oyl, with a little Roman-Vitriol and Sulphur.

Where note, the longer you boil the wood, the blacker it will be, but too long makes them brittle.

II. *To dye Bones green.*

Boil the Bones in Alum-water, then take them out, dry them and scrape them, then boil them in Lime-water with a little Verdigrise.

III. *To dye Wood like Ebony, according to Glauber.*

Distil an *Aqua fortis* of Salt-peter and Vitriol.

IV. *To make Horns black.*

Vitriol dissolved in Vinegar and Spirit of Wine will make Horns black: so the Snow-white Calx of Silver in fair water.

V. *To makes Bones white.*

They are strangely made white by boiling with water and Lime; continually scumming of it.

VI. *To dye Bones green.*

Take white Wine vinegar a quart, filings of Copper, Verdigrise, of each three ounces, Rue bruised one handful, mix them, and put the bones therein for fifteen days.

VII. *To dye Wood, Horns, or Bones red.*

First boil them in Alum-water, then put them into tincture of Brazil in Alum-water for two or three weeks: or into tincture of Brazil in Milk.

VIII. *To dye them Blew.*

Having first boiled them in Alum-water, then put them into the dissolution of Indico in Urine.

IX. *To dye them green like Emeralds.*

Take *Aqua fortis*, and put as much filings of Copper into it, as it will dissolve; then put the Wood, Horns, or Bones therein for a night.

X. *To dye Bristles and Feathers.*

Boil them in Alum-water, and after, while they are warm,

warm, put them into tincture of Saffron, if you would have them yellow: or juice of Elder-berries, if blew: or in tincture of Verdigrise, if green.

XI. *To dye an Azure colour.*

Take Roch-alum, filings of Brass, of each two ounces, Fish-glew half an ounce, Vinegar, or fair water a pint, boil it to the consumption of the half.

XII. *To soften Ivory and Bones.*

Lay them twelve hours in *Aqua fortis*, then three days in the juice of Beets, and they will be tender, and you may make of them what you will: *To harden them again*, lay them in strong white Wine-vinegar.

XIII. *To make Horns soft.*

Take Urine a month old, Quick-lime one pound, calcined Tartar half a pound, Tartar crude, Salt, of each four ounces, mix and boil all together, then strain it twice or thrice, in which put the horns for eight days, and they will be soft.

XIV. *Another way to make them soft.*

Take ashes of which glass is made, Quick-lime, of each a pound, water a sufficient quantity, boil them till one third part is consumed, then put a feather into it, if the feather peel, it is sodden enough, if not, boil it longer, then clarify it, and put it out, into which put filings of Horn for two days; anoint your hand with oyl, and work the Horns as it were paste, then make it into what fashion you please.

XV. *Another way to soften Horns.*

Take juyce of Marubium, Alexanders, Yarrow, Celandine and Radish roots, with strong Vinegar, mix them, into which put Horns, and digest seven days in horse-dung, then work them as before.

XVI. *To cast Horns in a mould like as Lead.*

Make a Lixivium of calcined Tartar and Quick-

lime, into which put filings or scrapings of Horn, boil them well together, and they will be as it were pap, tinge it of the colour you would have it, and then you may cast it in a mould, and make thereof what fashioned things you please.

XVII. *To make Ivory white.*

If Ivory be yellow, spotted or coloured, lay it in Quick-lime, pour a little water over it, letting it lye twenty four hours, and it will be fair and white.

C H A P. XXXVI.

Of Dying Yarn, Linnen Cloth, and the like.

I. **T**O dye a sad Brown.

First infuse the matter to be dyed in a strong tincture of Hermodacts: then in a bag put Saffron and ashes, *stratum super stratum*, upon which put water two parts mixed, with Vinegar one part; strain the water and Vinegar through hot, fifteen or sixteen times, in this Lixivate tincture of Saffron put what you would dye, letting it lye a night, then take it out, and hang it up to dry without wringing, which do in like manner the second and third times.

II. *To dye a blew Colour.*

Take *Ebulus* berries ripe and well dried, steep them in Vinegar twelve hours, then with your hands rub them, and strain them through a linnen cloth, putting thereto some bruised Verditer and Alum.

Note, if the blew is to be clear, put more Verditer to it.

III. *Another excellent blew Dye.*

Take Copper scales one ounce, Vinegar three ounces, Salt one drachm; put all into a Copper vessel; and

and when you would dye, put the said matter into the tincture of Brazil.

IV. *Another excellent blew Dye.*

Take calcined Tartar three pugils, unslak'd Lime one pugil, make a Lixivium, and filtrate it; to twelve or fifteen quarts of the same water put Flanders blew one pound, and mix them well: set it to the fire, till you can scarcely endure your hand in it: then first boil what you would dye in Alum-water, then dry it: afterwards dip it in hot Lye twice or thrice; then put it into the Dye.

V. *A good red Dye.*

Take Brazil in powder, fine Vermilion, of each half an ounce, boil them in Rain-water, with Alum one drachm, boil it till it is half consumed.

VI. *Another excellent good red Dye.*

Take of the *Lixivium* of unslak'd Lime one pint, Brazil in powder one ounce, boil to the half; then put to it Alum half an ounce, keep it warm, but not to boil: then dip what you would dye, first in a *Lixivium* of Red-wine Tartar, let it dry; then put it into the Dye.

VII. *Another very good Red.*

Take Rosset with Gum-Arabick, boil them a quarter of an hour, strain it: then first boil what you would dye, in Alum-water two hours; after put it into the Dye.

VIII. *To make fair Russet Dye.*

Take two quarts of water, Brazil one ounce, boil it to a quart; put to it a sufficient quantity of Grains and two drachms of Gum-Arabick.

IX. *A good Purple Colour.*

Take Myrtle berries two pound, Alum, calcined Brass, of each one ounce, water two quarts, mix them in a Brass Kettle, and boil half an hour, then strain it.

X. *A Yellow Colour.*

Take berries of purging Thorn, gathered about *Lammas-day*, bruise them, adding a little Alum in powder; then keep all in a Brass vessel.

XI. *Another good Yellow.*

Put Alum in powder to the Tincture of Saffron in Vinegar.

XII. *A very good green Colour.*

Take Sap-green, bruise it, put water to it, then add a little Alum, mix and infuse for two or three days.

XIII. *To take out Spots.*

Wash the spots with oyl of Tartar *per Deliquium*, two or three times and they will vanish, then wash with water. Spirit of Wine to wash with is excellent in this case. If they be Ink spots, juice of Limmons or Spirit of Salt is incomparable, washing often and drying it: so also Castle-sope and Vinegar.

C H A P. XXXVII.

Of the Dying of Stuffs, Cloaths, and Silks.

I. *To make a substantial blew Dye.*

Take Woad one pound, and mix it with four pound of boiling water: infuse it twenty four hours; then dye with it all white colours.

II. *To make a firm black Dye.*

First Wad it with the former Blew: then take of Galls one pound, water sixty pound; Vitriol three pounds: first boil the Galls and water with the Stuff or Cloath, two hours; then put in the Copperas at a cooler heat for one hour: then take out the Cloath or Stuff and cool it, and put it in for another hour, boiling

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it: Lastly, take it out again, cool it, and put it in once more.

III. *To make an excellent Yellow Dye.*

Take running water in which wheat bran has been boyled, (being very clear) sixty pound: in which dissolve three pound of Alum: then boil the Stuff or Cloath in it for two hours: after which take Wold two pounds, and boil it till you see the colour good.

IV. *To make a very good green Dye.*

First dye the Cloth or Stuff yellow by the third Section, then put it into the blew Dye, in the first Section of this Chapter.

V. *To make a pure clear red Dye.*

Take liquor or infusion of Brazil in Wheat-bran water, (being strained and made very clear) sixty pounds, Alum two pounds, Tartar one pound; mix and dissolve them, with which boil the Stuff or Cloth for two hours: take it then out, and boil it in fresh Wheat-bran liquor, sixty pounds: to which put Madder three pounds; perfect the colour at a moderate heat, without boiling.

VI. *To make a very pleasant Purple Dye.*

First dye it blew, by the first rule of this Chapter; then boil it in the former red at the fifth rule hereof: lastly, finish it with a decoction of Brazil.

VII. *To dye Crimson in Grain.*

First boil it in the red at the fifth rule of this Chapter; then finish it in a strong tincture of Cochenele made in part Water, part Wine, or in Wheat-bran liquor: Where note, that the vessels in which the Stuff and Liquors are boyled must be lined with Tin, else the colour will be defective. The same observe in Dying of Silks (in each colour) with this Caution, that you give them a much milder heat, and a longer time,

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VIII. The Bow-dyers know, that dissolved Tin (that is the solution of *Jupiter*) being put into a Kettle to the Alum and Tartar makes the Cloth attract the colour into it, so that none of the Cochenele is left; but is all drawn out of the water into the Cloth.

The Spirit of Nitre being used with Alum and Tartar, in the first boiling makes a firm ground, so that they shall not spot nor lose their colour by the Sun, Fire, Air, Vinegar, Wine, Urine, or Salt-water.

IX. *To dye a Red Colour.*

Boyl the things, you would dye first, in Alum Water: which take out and boyl in water with Brasil in fine powder. Let it boil till the scum arises first, then put in the thing to be dyed, and let it boyl till the water looks of an Orange tawny, casting in then also a handful of bay salt.

X. *To dye a Carnation-Colour.*

Take Running water 16 quarts: Pot Ashes 2 pounds; mix and digest 48 hours: this done, divide the water, half into one pot, half into another; let the first pot stand in hot embers, up to the top, or in a furnace, and the other by a fire, to fill up the first as it boils away: Into the first put Red Brisco flocks 2 pounds, letting it boil till it is thick, adding Gum-Arabick, and Alum, of each the quantity of a Walnut; diminish the heat, and let it be only scalding hot, then put in the matter you would dye, letting it lye 24 hours in the liquor.

XI. *To dye a purple Colour.*

Take Orchall, mix it with half Urine, and let it boil till it be of a dark colour; then put in the matter you would dye, letting it lye 24 hours or more.

XII. *To dye a dark Green Colour.*

First dye the matter you would have of a dark Green,

Green, blew, by the first section of this Chapter : then put it into the yellow dye at the third section aforegoing, and it will be of a dark Green Colour.

XIII To dye a Popping-jay Green colour.

Make a Weak Lixivium of Pot-Ashes ; or lye such as the Country people wash their cloths with, put into it Indico, a sufficient quantity, then put in your matter to be dyed, (being first dyed yellow) and let it boyl (the longer the better) so will the colour be good.

XIV. To dye a good yellow Colour.

Take Running water, and wort made of Malt, of each a like quantity, in which dissolve a sufficient quantity of Alum by boiling : Into this liquor put what you would have dyed yellow, and let it boil a good while ; ; then take it out, and put it into a decoction of Wold, Weld, or dyers weed, made with Chalk water, and (laying weights upon it,) let it boyl an hour or two.

XV. To dye a Russet Colour.

Take Vitriol of Iron, or common Green Vitriol (such as they usually make Ink of, nut galls, of each a sufficient quantity, beat them into powder, and boil them in Running water, then put in the matter you would dye, and let it lye 24 hours.

XVI. To dye an Orange Tawney Colour.

Make a Weak Lixivium of Pot-Ashes, or such as Women wash their cloth with all : put into it a sufficient quantity of Wood foot, and black Cork ; boil a while, then put in the matter you would dye (being first dyed yellow), and let it boil a little, casting in while it boils, a handful of bay-salt.

XVII. To dye a brown Tawney or Iron rust Colour.

Make a strong decoction of Walnut tree leaves
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in fair water ; then put in the matter you would dye, and boil it some hours, with the leaves, in the said liquor ; and when it comes out, it will be exactly of the colour you desire.

XVIII. To enumerate all the great variety of Dyes, or Colours, or offer at an essay to reduce them to a certain method, as it is a labour needless, so it is as altogether impossible, there being infinite colours to be produced, for which (as yet) we have no certain, known or real name : And out of what we have already enumerated in this Chapter, the ingenious (if they please) shall find (by little Practice and Experience) such great variety to be apparent, that should we express the number though but in a very low or mean degree, we could not but be exposed in censure to an Hyperbole even of the highest : Every of the foregoing colours, will alone or singly, produce a great number of others, the first more deep or high ; the latter, all of them paler than each other : And according to the variety of colours the matter is of, before it is put into the Dye, such new variety also shall you have again when it comes out ; not according to what the colour naturally gives, but another clean contrary to what you (although an Artist) may expect. For if strange colours be dipt into Dyes not natural to them, they produce a forced colour of a new texture, such as cannot possibly be preconceived by the mind of man, although long and continued experience might much help in that case. And if such variety may be produced by any one of those single colours ; what number in reason might be the ultimate of any two or three or more of them being complicate or compounded ? Now if such great numbers or varieties may be produced, 1. By any one single colour, 2. By being complicate ; how should we (with-
out

out a certain and determinate limitation by denomination or name) ever order such confused, unknown, various, and undeterminate species of things, in any pleasant, intelligible method? Since therefore that the matter (as yet) appears not only hard, but also impossible. we shall commend what we have done to the Ingenuity of the Industrious; and desire that Candor or Favour from the Experienced, with love to correct our Errors; which act or kindness will not only be a future obligation to the *Author*, but also enforce Posterity to acknowledge the same.

CHAP. XXXVIII.

Of Wax-work, or Moulding.

I. **T**o make the moulds.

Take a large piece of Plaster of *Paris*, burn it in a Crucible till it be red hot, let it cool, beat it very fine, and searse it; taking heed that the wind and Air come as little at it as may be, for that will hinder its hardening; then keep it close up in wooden boxes or in thick brown paper. Take an earthen vessel that is shallow, put into it almost half a pint of fair water: then prepare the fruit you would imitate, and bind a Rag round it like a cord in a wreath long ways on the fruit: after take some linseed Oyl, or Oyl of sweet Almonds which is better, with which, besmear (by help of a pencil) the Lemon, Orange, Apple, Pear, Plum, Pomgranate, Walnut, &c. you would pattern on the one side, which lay uppermost; your fruit thus prepared; take some of your sifted plaster of *Paris*, and temper it in the aforementioned water to a just thickness; and as

speedly

speedily as may be, with the help of a Spoon, cast it on the Oyled Limon, laying it on very thick, lest the thinness of the Mould should spoil the work; when it is hardened (which will be in a little time) take away your Rag, leaving the Limon still fast in its half Mould, which done turn the hardned side downward; then Oyl the other half of the Limon together, with the edges of the Mould which the rag did cover; wash the Vessel where the former Plaster was, and put into it more Plaster of *Paris* as before, making it not too thick, and put it upon this other side of the Limon or Fruit, as before; which when done and hardned, make a notch that both halves may fall, one exactly into the other; then tye them close together (having first oyled them) and keep them for use.

II. *To cast in these Moulds.*

The Moulds being made of Plaster of *Paris*, or burnt Alabaster as aforesaid, by mixing with fair water; put into the same the whitest and purest Virgin Wax melted, shaking the mould every way, exactly and nimbly; which being cold, take it out of the Mould, by taking the parts asunder: this Wax fruit may be coloured by the following Rules; except you exactly colour the wax before hand.

III. *To Colour the Wax according to your desire.*

1. *For Raddishes*, The ground is Ceruse, which must be painted over with Lake: the top of the Raddish with Verdigrise: these must be tempered with Gum-Arabick water. 2. If the fruit be all of a colour as a Limon, 'tis easy to colour the Wax, and cast it all of a colour: this is done, by putting a little linnen bag of that colour you use, into the hot melted Wax, the colour being made first very fine. 3. *For Lemons*

or *Apricoeks*, put only *Turmerick* in a bag: 4. For *Oranges*, *Turmerick* and *Red-lead* well tempered. 5. For *Apples, Pears or Grapes*, *Turmerick* and a little *Verdigrise*. 6. For *Walnuts, and Figgs*, *Turmerick* with *English Oker*, and *Umber*, all in a bag together. 7. For *Cucumbers, Artichoaks, Peascods, Filberds*, *Turmerick*, *Verdigrise*, *Ceruse*, and *Eggs*, all put in several bags, and steeped into the *Virgin Wax* being well melted. 8. For *Damsons*, bruise *Charcole*, *Indico*, and *blew Starch*, in a bag together. 9. For a *flesh colour*, *white-lead*, mixt with *Vermilion*, &c.

IV. *To counterfeit Rock-candied sweet meats.*

Take *Venice Glass* beaten to what smallness best likes you, or may be most fit to serve your occasion: then daub over some *Wax*, or cast sweet meats with thick *Gum-Arabick* water, and strew the aforesaid *Glass* powder thereon, and it will much satisfy your expectation.

V. *To take the Idea of any Embossed work.*

About the edge of the *Embossed* work make a little ledge or border of *Clay*: then lightly, but carefully anoint, the surface of the *Embossed* matter and *Clay* with *oyl*, (but have a care it be not too much, lest it hurt the figure) upon which put to the thickness of half an inch or more of *Plaster of Paris*, or *calcin'd Alabaster*, mixt with water to the thickness of *Honey*; and in a quarter of an hour, growing hard, take it off, and you shall have the perfect *Idea* of your *Imbossed* work.

C H A P. XXXIX.

The way of Performing of Mezo-tinto.

I. **T**AKE a well polished Copper plate, which make all over rough one way, with an engine particularly designed for this purpose; then cross it over with the Engine again; and if you see occasion, cross it over again the third time, till it be made all over rough alike, *viz.* so as if it were to be printed it would print black all over.

II. This done, take Charcole, black Chalk, or black Lead, to rub over the plate, and draw your designs with white Chalk upon the same, then take a sharp Stiff, and trace out the out-lines of the design which you drew with the white Chalk.

III. Where you would have the light strike strongest, take a burnisher, and burnish that part of the Plate, as clean and smooth, as it was when it was first polished.

IV. Where you would have the light fainter; there you must not polish it so much: and after this manner you must either increase or decrease the light in your design, making it either fainter, or stronger, as the necessity of your work shall require.

V. The shape or form of the Engin or Instrument is various and manifold, according to the fancy of the Artist; those that desire them, may have them of several persons in *London*, who profess and practise the Arts of Drawing, Etching, and Engraving.

C H A P. XL.

*Containing Certain Natural Experiments.*I. *To make Artificial flesh.*

Take crumbs of the best wheaten Bread, as soon as it comes forth out of the Oven, being very hot, and as much as you please; put it into a bolt head of Glass, (without any other moisture than what is in the bread it self) which presently seal up hermetically. Then set it in digestion in a temperate Balneo, the space of two months, and it will be turned into a fibrous Flesh. This being exalted to a higher perfection by the rules of Art, you may easily see how great a nourisher and restorative wheat is, and what an excellent medicine may be made of it.

II. *To make an Artificial Mallago Wine.*

Take a wine Vessel well hoopt with Iron hoops, and one end open, to which a close cover must be fitted to take on and off at pleasure, set it in a warm place, fill it full of fair water, to every gallon of which put two pounds of Mallago Raisons, first bruised in a stone Mortar; and to every twenty gallons of water a good handful of Calx Vive: cover the Vessel close, and keep it warm with cloths: let it stand four or five days to work: then see if the Raisons be risen up, and beat them down, and cover it again as before, beating them down every fourth or fifth day for three or four weeks: then put a tap in, four inches above the bottom, and see if it tastes like wine; if not, let it stand a while longer; after which draw it off into another Wine Vessel, and to every

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twenty

twenty Gallons put a pint or quart of the best spirit of Wine (as you would have it in strength) two new laid Eggs, and a quart or better of Allicant well beaten together. Let it stand in a Cellar as other Wine till it is fine, and fit to be drunk.

III. *To make an Artificial Claret.*

Take Water six Gallons: choice Cider two Gallons: best Mallago Raisons bruised eight pounds: mix and let them stand all in a warm place fourteen days, stirring them well once every day. Then press out the Raisons, and put the liquor into the Vessel again, to which add juice of Rasp-Berries a quart: juice of black cherries a pint: juice of black berries a pint and a half: cover this liquor with bread spread thick with strong Mustard, the Mustard side being downwards, and so let it work by the fire three or four days; after which run it up, let it stand a week, and bottle it up: so will it become a very brisk and pleasant drink, and far better and wholesomer than our common Claret.

IV. *To make an Artificial Malmsey.*

Take eight Gallons of spring water: English Honey two Gallons: make them boyl over a gentle fire for an hour: take it off, and when it is cold, put it into a Runlet, hanging in the Vessel a bag of spices, and set it in the Cellar for half a year, at the end of which you may drink it.

V. *To make Rasp-berry Wine.*

Take Canary a Gallon: Rasp-berries 2 Gallons: mix and digest 24 hours: strain them out, and add Raisons of the Sun stoned three pounds: digest again four or five days, sometimes stirring them together: then pour off the clearest, and put it up into bottles, which put into a cold place: if it be not sweet enough you may dulcify it with Sugar.

VI. *Another*

VI. *Another way to do the same.*

Take juice of Raspberries, bottle it up close, and set it in a Cellar, and it will become clear, and keep all the year long, and be very fragrant, a few spoonfuls of this put into a pint of Wine sweetned with Sugar, will give it a full tast of the berry: two or three ounces of the syrup of the juice will do the same.

VII. *To purify Oyl Olive, that it may be eaten with pleasure.*

Take fair water 2 quarts, Oyl Olive a pint: mix, and shake them well together for a quarter of an hour in a glass; then separate the water from the Oyl with a separating funnel. Do this four or five times or more as you see occasion, till the Oyl becomes very pure: and the last time wash it with Rose-water, then hang in the midst of the Oyl a course bag full of bruised Nutmegs, Cloves, and Cinnamon, so will you give it an excellent taste.

VIII. *To purify Butter, and make it of a most sweet tast.*

Melt Butter with a slow fire in a well glazed earthen Vessel, which put to fair water, working them well together and when it is cold take away the Curds and the Whey at the bottom. Do it again the second time; and if you so please the third time in Rose-water, always working them very well together. The Butter thus clarified will be as sweet in taste, as the marrow of any Beast, and keep a long time, by reason of the great impurity which is removed by this means; the dross being near a quarter of the whole.

IX. *To make Sage, Parsley or Pennyroyal Butter.*

When the Butter is newly made, and well wrought from its Water, Milk, and Wheyish part; mix therewith a little Oyl of Sage or Parsley, so much till the Butter is strong enough in tast to your liking, and then temper them well together: this will excuse you

from eating the Plants therewith: and if you do this with the aforesaid Clarified Butter, it will be far better, and a most admirable rarity.

X. *To purify and refine Sugar.*

In a strong Lixivium of Calx Vive dissolve as much course Sugar as it will bear, adding to every quart of liquor, 2 whites of Eggs, beaten into Glair, stir them well together, and make them boyl a little, taking off the skum, as long as any will arise: then pass all through a great woollen cloth bag, so the faeces will remain behind in the bag, then boyl the liquor again so long till being dropt upon a cold plate, being cold, it is as hard as Salt: this done, put it out into Pots or Moulds for that purpose, having a hole in the narrower end thereof, which must be stoppt for one night, afterwards being opened, the Mollosses or Treacle will drop forth: then cover the ends of the pots with Potters Clay, and as that Clay sinks down, by reason of the sinking of the Sugar, fill them up with more Clay, doing thus, till the Sugar will sink no more. Lastly take it out, and being hard and dry, bind it up in papers.

XI. *To make a Vegetable grow more glorious than its Species.*

Reduce any Vegetable into its 3 first principles, and then joyn them together again, being well purified: put the same into a rich earth, and you shall have it produce a Vegetable far more glorious, than any of its species.

XII. *To make a Plant grow in two or three hours.*

Take ashes of Moss, which moisten with the juice of an old dunghil (being pressed out and strained) then dry them a little, and moisten them as before; do this four or five times: put this mixture not being

very

very dry, nor very moist into an earthen Vessel, and in it set seeds of Lettice, Purslane, or Parsley (for they will grow sooner than other Seeds) being first impregnated with the essence of a vegetable of its own species (some say the juice of the same Plant, but especially the spirit will do instead of the Essence:) till they begin to sprout forth: which then put into the said earth, with that end upwards which springs. Put the Vessel into a gentle heat, and when it begins to dry, moisten it with the said juice of dung: Thus may you have a Sallet while supper is making ready.

XIII. *To reduce a whole Vegetable into a liquor which may be called the essence thereof.*

Take the whole plant with Flowers and Roots, bruise them in a Morter, put all into a large glass Vessel, (but a Wooden one is better) so that two of three parts may be empty; cover it exceeding close, and let it stand in putrefaction in a moderate heat for a year, and it will all be turned into a water.

XIV. *To make the lively form and Idea of any Plant appear in a Glass.*

Take the former water (at Sect. 13.) distill it in a good Glass in ashes, and there will come forth a Water and Oyl, and in the upper part of the Vessel a volatile Salt: the Oyl separate and keep by it self: with the water dissolve the volatile Salt, and purify it by filtering and coagulating. This purified Salt imbibe with the said Oyl until it will imbibe no more; digest them well together for a month in a Vessel hermetically sealed; so will you have a most subtil essence, which being held over a gentle heat, or the flame of a candle, by which means it may be made hot, you will see the fine substance (which is

like impalpable Ashes or Salt) send forth from the bottom of the Glass, the manifest form and Idea of the vegetable, vegetating and growing by little and little, and putting on so fully the form of Stalks, Leaves, and Flowers, in such perfect and natural wise, that one would believe the same to be real; when as in truth it is the spiritual Idea, arising with the spiritual Essence of the Plant; this were it joyned with its proper earth, would take to it self a more solid body. Now as soon as the Vessel or Glass is removed from the fire, this Idea or representation vanishes, becoming a Chaos and confused matter, returning to its sediment, from whence it arose.

XV. *Another way to make the essence of a Plant.*

Put the Herbs, Flowers, Seeds, Spices, &c. into rectified spirit of Wine: extract a very strong and deep tincture; upon which put strong Oyl of Salt, and digest in *Balneo*, till an oyl swim above, which separate. Or else draw off the spirit of Wine in *Balneo*, and the Oyl or Essence will remain at bottom: but before the spirit of Wine is abstracted, the Oyl or Essence is blood red, and a true Quintessence.

XVI. *Another way to make the true Essence, or rather Quintessence.*

Make the Water, Oyl, and Volatile Salt, as before is taught: and from the fæces extract the fixed Salt, which purify according to Art; which Salt resolve in a Cellar upon a marble stone to an Oyl, which is that we call *per deliquium*, filter it and evaporate, till the Salt is white as Snow, with these Salts imbibe as much of the Oyl as you can make it receive; then digest till the Oyl will not separate from the Salt, but become a fixed powder, melting with an easy heat.

XVII. *To make the form of a Firr tree appear in Colophonia.*

Distill Turpentine in a Retort *gradatim*: when all is distilled off, keep the Retort still in a reasonable heat, that what humidity is still remaining may be evaporated, and it become dry. Take it then off from the fire, and hold your hand to the bottom of the Retort, and the Turpentine which is dried, (called also Colophonia or Rosin) will crack asunder in several places, and in those cracks, or Chaps, you shall see the perfect figure of Firr trees, which will there continue many months.

XVIII. *To make Harts horn seemingly grow in a Glass.*

Take Harts horn broken into small bits, and put them into a Glass Retort to be distilled, and you shall see the Glass to be seemingly full of Horns; which will continue there so long, till the Volatile-salt be come over.

XIX. *An Excellent invention to make a pleasant Fire.*

Take of the best New Castle Coals 3 parts beaten small: Loam one Part: mix them well together into a Mass with water, of which make Balls, and dry them very well. This fire is durable, sweet, and not offensive, by reason of the Smoak or Cinders, as other Coal fires are, but burns as well in a Chamber as charcoal it self. And this Fire may serve for such distillations as require a strong and lasting heat, as also for ordinary occasions.

XX. *To make a durable and lasting Oyl.*

1. Take unslaked lime, Bay-salt, Oyl Olive, of each a like quantity; mix them well together, and distill in sand: Cohobate the Oyl upon the same quantity of fresh lime and salt: this doe 4 times. 2. The Oyl by this means will be clear, and impregnated with what salt was Volatile in the lime and salt. 3. If it be seven times distilled, it will be as pure, odori-

ferous, and subtil, as many distilled Oyls of Vegetables. 4. This Oyl whilst a distilling, has a most fragrant smell, and of a most durable quality, which durability comes from the saline impregnation: besides which, it is good against any inveterate Ach or pain in the limbs, or other parts. 5. A Lamp made with this Oyl, will burn six or seven times as long, as that which is made with other Oyl; also it burns very sweet. 6. You ought to be very cautions in making of it, or else your Glasses will quickly break. 7. You must take very strong lime, such as your dyers use, and call *Cauk*.

XXI. *To make a Candle that shall last long.*

Mix with your Tallow unslaked Lime in powder: Or make your Candles of Castle-soap: such Candles as these will be admirable for Lamp Furnaces. Now it is the Salt in the Lime and Soap, that preserves the Tallow from burning out so fast, as otherwise it would.

XXII. *To make the distilled Oyl out of any Herb, Seed, Flower, or Paper, in a moment, without a Furnace.*

You must have a long pipe made of Tin, or Tobacco-pipe clay with a hole in it as big as a small Walnut, three or four inches from one end of it, into which you must put the matter, you would have the Oyl of: set it on fire with a Candle or a Coal: then put one end of the pipe into a bason of fair water, and blow at the other end, so will the smoak come into the water, and the Oyl will swim upon it, which you may separate with a Funnel.

XXIII. *To reduce Rosin into Turpentine again.*

Take Oyl of Turpentine and the Colophonia, or Rosin thereof, in powder: mix these together, and digest them; and you shall have Turpentine of the same consistency it was before; but of a more fiery

fiery and subtil nature: Pills made hereof are more excellent for opening obstructions of the Breast, Lungs, Kidneys, Bowels, &c. than those that are made of raw Turpentine.

XXIV. *To write or engrave upon an Egg, Pibble, Flint, &c.*

Write what you please with Wax or Grease upon an Egg, Pibble, Flint, &c. then put it into the strongest spirit of Vinegar, or oyl of Salt, letting it lye two or three days: and you shall see every place about the Letters or Writing, eaten or consumed away; but the place where the Wax or Grease was not at all touched.

XXV. *To make a powder, which being wetted shall be kindled.*

1. Take a Load-stone, powder it, and put it into a strong Crucible; cover it all over with a powder made of Calx vive and Colophonia, of each a like quantity; put also some of this powder under it: when the Crucible is full, cover it, and lute the closures with Potters Earth, put it into a Furnace, and there let it boyl; after take it out, and put the matter into another Crucible, and set it in a Furnace also, this do till it becomes a very white and dry Calx.

2. Take of this Calx one part: Sal Niter well purified four parts: and as much Camphire, Sulphur vive, oyl of Turpentine and Tartar: Grind what is to be ground to a subtil powder, and put all into a glass Vessel, with as much well rectified spirit of Wine, as will cover them two inches over. 3. Stop the Vessel close up, and set it in Horse-dung three months, so will all the matter become an uniform paste: evaporate all the humidity, until the whole Mass becomes a very dry stone; which take out, powder it, and keep it very dry. 4. If you take a
little

little of this powder, and spit upon it, or pour some water thereon, it will take fire presently, so that you may light a match, or any such thing by it.

XXVI. *To make a Room seem to be on fire.*

Take rectified spirit of Wine, and dissolve Camphire therein; evaporate this in a very close Chamber, where no Air can get in; and he that first enters the Chamber with a lighted Candle, will be amazed; for the Chamber will seem to be full of fire, and very subtil, but of little continuance. This done in a close Cupboard or Press, will be much more perspicuous and visible.

XXVII. *To make the four Elements appear in a Glass.*

Take Jet in fine powder an ounce and half: *Oleum Tartari per deliquium* (made without addition of any water) two ounces, coloured with a light Green with Verdigrise: add thereto spirit of Wine tinged with a light blew with Indico, two ounces: of the best rectified spirit of Turpentine, tinged of a light red with Madder, two ounces: mix all these in a Glass, and shake them together, and you shall see the heavy black Jet fall to the bottom, and represent the Earth: next the oyl of Tartar made green falls, representing the water: Upon that swims the blew spirit of Wine, representing the Air or Sky: And uppermost of all will swim the subtil red oyl of Turpentine representing the element of fire. It is strange to see how after shaking all these together, they will be distinctly separated one from another. If it be well done, (as it is easy to do) it is an admirable and glorious sight.

XXVIII. *To represent the whole World in a Glass.*

Take the finest Sal-Niter, what you please; Tin, half so much: mix them well together, and calcine them

them Hermetically: then put them into a Retort, to which adjoin a Glass Receiver, with leaves of Gold put into the bottom thereof; lute them well together; put fire to the Retort, until vapours arise that will cleave to the Gold: augment the fire till no more fumes ascend; then take away the Receiver; close it hermetically, and make a Lamp fire under it; and you will see represented in it, the Sun, Moon, Stars, Fountains, Trees, Herbs, Plants, Flowers, Fruits, and indeed, even all things, after a very wonderful manner.

XXIX. *To make a perpetual motion in a Glass.*

Take Quicksilver, Tin, *ana* seven ounces: pure Sublimate fourteen ounces, dissolved in a Cellar upon a Marble, (which in four days will become like Oyl Olive) mix and distill in sand, and there will sublime a dry substance: put the water which distills off, back upon the Earth in the bottom of the stillatory, and dissolve what you can: filter it, and distill it again, and this do four or five times, then will that earth be so subtill, that being put into a Vial, the subtill Atoms thereof will move up and down for ever: but you must be sure to keep the Glass close stopt, and in a dry place.

XXX. *To make Regulus of Antimony, for Antimonial Cups.*

Take Antimony in powder, Niter, of each a pound: crude Tartar in fine powder two pounds: mix, put them into a Crucible, cover the Crucible, and melt, so will the *Regulus* fall to the bottom, which pour into a brass Mortar smeared with Oyl.
Or thus. Take Antimony powdered two pounds: crude Tartar in powder four pounds: melt as before. This *Regulus* you may cast into Cups, Pictures, Medals, or what figures you please: these infused in two

or three ounces of Wine in an earthen glazed Vessel, or in a Glass, in a gentle heat all night, gives you a liquor in the morning which will vomit; Dose from two drams, to two ounces and a half; you may sweeten it if you please with a little white Sugar. These Cups or Pictures will last for ever, and be as effectual after a thousand times Infusion as at first.

Libri Tertii FINIS.

POLY-

POLYGRAPHICES

LIBER QUARTUS.

Containing the Original, Advancement and Perfection of the Art of Painting : Particularly exemplified in the various Paintings of the Ancients.

CHAP. I.

Of the Original of these Arts.

I. **T**HE Original of the Art of Painting was taken from the Forms of things which do appear; expressing the same (as Isidorus Pelusiota saith) with proper colours, imitating the Life, either hollow or swelling, dark or light, hard or soft, rough or smooth, new or old.

OF

Of such things (amongst Vegetables) Flowers yield the greatest variety: of Animals, Man: of things Inanimate, Landskips, &c. For this matter of imitation was presented in the chief things only, for who should learn to imitate all things in Nature? the greater being attained, the lesser will follow of themselves; if any shall attempt so great a burthen, two inconveniencies, saith *Quintilian*, will necessarily follow, to wit, *Always to say too much, and yet never to say all.*

II. *And this imitation of things seen with the Eye, was much helped by the Idea's of things conceived in the mind, from the continual motion of the imagination.*

Wherefore as *Quintilian* saith (lib. 10. cap 3. of his Institutions of Oratory) "We shall do well to accustome our minds to such a stedfast constancy of conceiving, as to overcome all other impediments by the earnestness of our intention, for if we do altogether bend this intention upon things conceived, our mind need never take notice of any thing which the Eye sees, or the Ear hears. And therefore those which would profit much, must take care and pains to furnish their minds with all sorts of useful Images and Idea's. "This treasury of the mind (saith *Cassiodorus* cap. 12. de Anima) is not overladen in haste: if it be once furnished, the Artist shall find upon any sudden occasion, all things necessary, ready at hand; whereas those which are unprovided shall be to seek. It is like to the Analytical Furniture in *Algebra*, without the knowledge of which, no notable thing can be performed. Now although the imagination may be easily moved, yet this same excellency is not attained in an instant: And without the ability of expressing of the conceived Images, all the exercise of the fancy is worth nothing.

III. *These*

III. *These Forms and Idea's were not singly considered, but complicately.*

For whereas nature scarcely ever represents any one thing perfect in beauty (in all its parts) lest it should be *devoid*. He had nothing more to distribute to others: So *Painters* of old chose out many Patterns, which were absolutely perfect in some of their parts, that by designing each part after that Pattern, which was perfect therein, they might at last present something perfect in the whole. And so when *Zeuxis* intended an exquisite Pattern of a beautiful woman, he sought not for this perfection in one particular body, but chose five of the most well-favoured Virgins that he might find in them that perfect beauty, which (as *Lucian* saith) must of necessity be but one. And *Maximus Tyrinus* saith, you shall not find in hast a body so accurately exact, as to compare it with the beauty of a Statue. And *Proclus* saith, if you take a man brought forth by nature, and another made by Art of Carving, that by nature shall not seem the statelier, because Art doth many things more exactly: To which *Ovid* assents, when that he saith, that *Pygmalion* did carve the Snow-white Image of Ivory, with such a happy dexterity, that it was altogether Impossible that such a woman should be born.

IV. *From this manner of Imitation did arise the skill of designing; from whence sprang the Arts of Painting, Limning, Washing, Casting, and all others of that kind.*

These Arts in their infancy, were so mean, that the first Artist was forced (as *Aelianus* saith *lib. 10. cap. 10. of his History*) in Painting to write, This is an Ox, this a Horse, this a Dog: But as *Tully* saith (in *libro de claris oratoribus*) there is nothing both invented and finished at a time. And *Arnobius* in *libro secundo adversus*

adversus Gentes saith, “ The Arts are not together
 “ with our minds, brought forth out of the heavenly
 “ places ; but are all found out here on earth, and
 “ in process of time, softened, forged, and beautified,
 “ by a continual meditation: Our poor and needy
 “ life, perceiving some casual things to fall out prof-
 “ perously, whilest it doth imitate, attempt, try, slip,
 “ reform, and change, hath out of the same assiduous
 “ reprehension made up some small pieces of Arts,
 “ the which it hath afterwards by study brought to
 “ some perfection.

V. *The persons who were the first inventors of these Arts are scarcely known (because daily new inventions were added) but those famous Persons who either strove to bring them to perfection, or add to what was already invented, or otherwise were famous in any one particular thing, History has in part informed us of.*

The famous *Pausias* was the first that attempted to bring the Art of Painting to perfection. *Apelles* was the first that undertook the expressing of invisible things, as Thunder, Lightning, and the like ; the which consideration of these almost impossibilities, made *Theophylactus Simocatus* (in *Epist.* 37.) say, that Painters undertake to express such things, as nature is not able to do : And the same *Apelles* had a certain invention and grace, proper to himself alone, to which never any other Artificer ever attained. And although *Zeuxis*, *Apelles*, *Aglaophon*, did none of them seem to lack any thing of, yet they differed very much, and had each of them some peculiar excellency, of which neither of the other two could boast. Here is but one Art of Casting, in which *Myron*, *Polycletus*, *Lysippus* have been excellent, yet did One very much differ from another : *Zeuxis* did surpass all other Artizans in Painting womens bodies: *Lysippus* is most excellent
 in

in fine and subtile workmanship: *Polycletus* made excellent Statues upon one Leg: *Samius* did excel in conceiving of Visions and Phantasies: *Dionysius* in Painting of men only: *Polignotus* most rarely expressed the affections and passions of men: *Antimochus* made noble women: *Nicias* excellent in Painting of women, but most excellent in four footed creatures, chiefly Dogs: *Calamis* made Chariots, with two or four horses; the horses were so excellent and exact, that there was no place left for Emulation: *Euphranor*, the first and most excellent in expressing the dignity, and marks of Heroical Persons; *Arestodemus* painted Wrestlers: *Serapion* was most excellent in Scenes: *Pyreicus* (inferiour in the Art of Painting to none) painted nothing but Coblers and Barbers: *Ludio* the first and most excellent in Painting Landskips: *Apollodorus*, *Asclepiodorus*, *Androbulus*, *Alevas*, were the only Painters of Philosophers, &c.

VI. *Another reason of the Invention hereof, was from the moving of the passions.*

For as *Simonides* saith (comparing Painting with Poesy) Picture is a silent Poesy, and Poesy is a speaking Picture: Upon the occasion of these words, *Plutarch* saith, *The things represented by Painters, as if they were as yet doing, are propounded by Orators as done already: Painters express in colours and lines, what Poets do in words; the one doth that with the Pencil, which the other doth with the Pen.* When *Latinus Pacatus* had made a full description of the miserable end of the wicked *Maximus*, he calls upon all the Painters to assist him: Bring hither, bring hither you pious Poets (saith he) the whole care and study of your tedious nights: Ye Artificers also, despise the vulgar Argument of Ancient Fables; these, these things deserve better to be drawn by your cunning hands: let

the Market-places and Temples be filled with such Spectacles; work them out in Ivory; let them live in colours; let them stand in Brass; let them exceed the price of precious Stones. It doth concern the security of all Ages, that such things might be seen to have been done, if by chance, any one filled with wicked desires, might drink in innocency by his Eyes when he shall see the (horrid and deplorable) Monuments of these our times. And *Gregory Nyssen*, upon the Sacrificing of *Isaac* saith, *I often saw in a Picture the Image of this Fact, upon which I could not look without tears; so lively did Art put the History before my Eyes.*

VII. *The Egyptians were the first inventors of Painting: The Greeks brought it (out of its rudeness) to proportion: The Romans adorned it with colours: The Germans (following them) made their works more durable by painting in Oyl: of whom the English, Dutch, Italian, and French, are become imitators.*

It is reported that the *Grecians* were the first painters, and that their colours were (in the infancy thereof) only white and black: but it appears more with reason and truth, that the invention thereof should be ascribed to the *Egyptians*, who (before the invention of Letters) signified their conceptions by *Hieroglyphicks* of Figures, Cyphers, Characters, and Pictures of divers things, as *Birds, Beasts, Insects, Fishes, Trees, Plants,* and the like, which by Tradition they transfer'd to their Children; so they made the *Falcon* to signifie Diligence, Strength, and Swiftnes: the *Bee* a King; its *Honey*, Mildness; its *Sting*, Justice; a *Serpent* (tail in mouth) the revolution of the Year: the *Eagle*, Envy; the *Earth*, a labouring Beast; a *Hare*, Hearing, &c. Now our bare learning to imitate is not enough; it is requisite that since we are not first in invention,

invention, we should study rather to outgo than to follow. *If it were unlawful (saith Quintilian) to add any thing to things invented, or to find out better things, our continual labour would be good for nothing; for it is certain that Phydias and Apelles, have brought many things to light, which their Predecessors knew nothing of. Apelles did all things with compleatness, Zeuxis, with an inestimable grace: Protogenes with an indefatigable diligence: Timanthes with a great deal of subtilty and curiosity: Nicophanes with a stately magnificence. Now to attain to these kind of Excellencies, it is necessary to have recourse to variety of great Masters, that something out of the one, and something out of the other, may be as so many ornaments to adorn our works; and as so many steps to lead us on to the door of perfection.*

VIII. *About the time of Philip King of Macedon, this Art began to flourish: growing into great estimation in the days of Alexander and his Successors: from thence through all the series of time even to this day, it hath received by degrees, such wonderful advancements that it may be now said, it is arrived at perfection.*

For without doubt there is a perfection of Art to be attained, and it is as possible that I, or thou, or he, may as well attain it, as any body else, if we resolve to strive, and take pains, without fainting, or fear of despair. And since the Art of Painting is (as *Socrates* saith) the resemblance of visible things, the Artist ought to beware that he abuses not the liberty of his imagination, in the shapes of monstrous and prodigious Images of things not known in nature; but as a true lover of Art, prefer a plain and honest work (agreeing with nature) before any phantastical and conceited device whatsoever.

IX. *Lastly, that from Time, Form, Magnitude, Number, Proportion, Colour, Motion, Rest, Situation,*

tion, Similitude, Distance, Imagination, and Light, in a single and complicate consideration, this Art hath its essence or being, and at last had by the help of industrious and unwearied minds, its Original production, and manifestation.

Light is that only thing, without which all those other things from which this Art springs, would be useless; without which the Art it self cannot be. "It is (as *Sanderfon* saith) the heavens off-spring, the eldest daughter of God, *fiat lux*, the first days Creation: it twinkles in a Star, blazes in a Comet; dawns in a Jewel, dissembles in a Glow-worm; contracts it self in a Spark, rages in a Flame, is pale in a Candle, and dyes in a Coal. By it the sight hath being, and the imagination life, which comprehends the universality of all things without space of place: the whole Heavens in their vast and full extent, enter at once through the apple of the Eye, without any straitness of passage: the sight is a sence, which comprehends that, which no other sence is capable of; it judgeth and distinguisheth between two contraries in an instant, it considers the excellency and beauty of every object: the spangled Canopy of Heaven by night, the wandering Clouds by day, the wonderful Form of the Rain-bow, the glorious matutine appearance of *Phœbus*; the meridional exaltation, the golden rays which surround him, the mutability of his shadows, his vespertine setting: the lofty tops of Mountains, unaccessible and ridgy Rocks, profound Valleys, large Plains, which seem to meet Heaven, green Trees, and pleasant Groves, delightful Hills, sweet and flowery Meadows, pleasant Streams, springing Fountains, flowing Rivers, stately Cities, famous Towers, large Bridges, magnificent Buildings, fruit-
ful

“ful Orchards and Gardens, shapes of living Crea-
 “tures, from the Elephant to the Ant, from the Eagle
 “to the Wren, and from the Whale to the Shrimp,
 “the wonderful forms of Insects, the marching of
 “Armies, the besieging and storming of Garisons
 “the insolencies of rude People, and flight of the
 “Distressed, the desolation and depopulation of King-
 “doms and Countries, the sailing of Ships, terrible Sea-
 “fights, great beauty of Colours, together with thou-
 “sands of other things, all which it digests, and mar-
 “shals in ample Order, that when occasion may be, it
 “may exert its store, for the benefit, advantage, ad-
 “vancement, and perfection of Art.

C H A P. II.

Of the farther progress of these Arts.

I. **A**S God Almighty (who is the Author of all wisdom) was the first institutor hereof, so also was he the promulgator, by whom these Arts have made progression in the world.

Certainly, saith *Philostratus*, Picture is an invention of the Gods, as well for the painted faces of the Meadows adorned with Flowers, according to the several Seasons of the year; as for those things, which appear in the Sky. What wonderful Eloquence is this! that in so few words, this Philosopher should clear so great a point. But what saith *Gregorius Nyssenus*? Man, saith he, is an earthen Statue: and *Suidas in Oratione prima de Beatitudinibus*, speaking of Adam, saith, This was the first Statue, the Image framed by God, after which all the Art of Carving used by men receiveth directions: *Lot's Wife* was another, turned
 X 3 into

into a durable Pillar of Salt, of whom *Prudentius* (in *Harmartigenia*) saith, she waxed stiff, being changed into a more brittle substance, she standeth Metamorphosed into Stone, apt to be melted, keeping her old posture in that Salt-stone Image ; her comeliness, her ornaments, her forehead, her eyes, her hair, her face also (looking backward) with her chin gently turned, do retain the unchangeable Monuments of her Antient offence ; and though she melteth away continually in Salt sweat : yet doth the compleatness of her shape suffer no loss by that fluidity ; whole droves of beasts cannot impair that savoury stone so much, but still there is liquor enough to lick, by which perpetual loss, the wasted skin is ever renewed. To these let us add the pattern of the *Tabernacle* shewed unto *Moses* upon Mount *Sinai* : The *Brazen Serpent* made by the express command of God : The *Pattern of the Temple* (which *David* gave unto *Solomon*) after the form which God made with his own hand : *Ezekiel's* portrait of *Jerusalem* with its formal *Siege* upon a Tile by express command from God also : The *Brazen Statue* of our Lord *Jesus Christ* erected by the woman healed of the bloody Issue, as is mentioned by *Photius*, and *Asterius* Bishop of *Amasa*, and other Ecclesiastick Writers : The *Picture* also of our Lord made without hands, as it is related by *Damascenus Cedrenus* and others : The *Picture* of *Christ* made in a Napkin or Towel, together with many more too tedious here to relate.

II. By vertue of this divine hand it was that many Artists of old attained to a certain kind of perfection in these Arts.

We will only refer the proof of this to the examples in the 31 of *Exodus* of *Bezaleel* and *Aholiab* ; of whom God himself witnesseth, that he called them by name

to make the *Tabernacle*; and filled them with his spirit, not only to devise curious works in *Gold, in Silver, in Brass, and in Silk*; but also gave them skill to teach others the same.

III. *Nature also hath not been idle, but hath acted a Master-piece herein.*

To pass by the glory of Flowers, the excellent comeliness of beasts (as in the spots of *Leopards*, tails of *Peacocks*, and the like) I will only remark the same of a Gem, which *Pyrrhus* (who made War with the *Romans*) had, of which *Pliny* in *lib. 34. cap. 1.* of his natural History, reports, that it being an *Agath* had the *nine Muses* and *Apollo* holding of a Lute depicted therein; the spots not by Art, but by nature, being so spread over the stone; that each Muse had her peculiar mark. See *Gafferel cap. 5.*

IV. *The care of Parents in the Education of their Children, was another reason of the progress hereof.*

The *Grecians*, saith *Aristotle* in *cap. 3. lib. 8.* of his Politicks, did teach their children the Art of Painting: and *Plutarch* saith, that *Paulus Æmilius* had Sculptors and Painters amongst the Masters of his children as well as Philosophers and Rhetoricians; and *Pliny* saith, that by the Authority of *Pamphilus*, this Art hath been ranked among the liberal Sciences, and that only Free-born children should learn it. And *Galen* enumerating several Arts, as *Physick, Rhetorick, Musick, Geometry, Arithmetick, Logick, Grammar, and knowledge of Law*; add unto these, saith he, *Carving and Painting*. And as the *Grecians* were the first, that taught their children these Arts, so also they provided betimes for them choice Masters.

V. *These Masters by their carefulness and vigilancy, not deceiving those that put their trust in them, became main Pillars of these Arts, and propagated them to Posterity; which*

by the addition of considerable gifts and rewards had an honourable esteem in the world.

Their care was manifest in laying down solid Principles of Art ; of which *Quintilian* in cap. 2. lib. 12. of his Institutions of Oratory saith, though vertue may borrow some forward fits of nature, yet she must attain to perfection. by doctrine. Their vigilancy was seen in watching, to apprehend their Scholars capacities, that they might suit themselves accordingly ; as in *Tully's* instance of *Isocrates*, a singular good teacher who was wont to apply the spur to *Ephorus*, but the bridle to *Theopompus* ; And their reward was eminent, as *Pliny* noteth in *Pamphilus* his School, out of which *Apelles* and many other excellent Painters came, who taught no body under a Talent (which is about 175 pound sterling) thereby the better to maintain the Authority of Art.

VI. *Their practice exactly agreed with their precepts.*

As with *Seneca*, that labour is not lost, whose experiments agree with precepts ; so with *Quintilian* those examples may stand for testimonies. And it was the practice of Painters of old, as *Galen* witnesseth concerning *Polycletus*, who hath not only set down in Writing the accurate precepts of Art ; but also that he made a Statue according to the rules of Art contained in those precepts.

VII. *These precepts which they taught their Scholars, they delivered in writing, that they might ever accompany them wheresoever they went.*

Apelles gave the precepts of this Art to his disciple *Perseus* in writing, as *Polycletus* did to his : besides innumerable others now in being too tedious here to recite. The like did these following, *Adæus*, *Mylenæus*, *Alcetas*, *Alexis* the Poet, *Anasimenes*, *Antigonus*, *Aristodemus*, *Carius*, *Artimon*, *Callixenus*, *Christodorus*,

dorus, Democritus Ephesius, Dæris, Eupherion, Euphranor, Isthmius, Hegesander Delphicus, Hippias Eleus, Hypsicrates, Iamblicus, Juba Rex Mauritanix, Malchus, Bizantius, Melanthius, Menachmus, Menetor, Pamphilus, Polemon, Porphyrius, Praxiteles, Protogenes; Theophanes, Xenocrates, and many others, the chief of whose works are now lost.

VIII. *As Arts came now into estimation, so at length Laws were established for their preservation; and punishments for their prevarication.*

The beginning of these Laws was first at *Argos, Ephesus, Thebes* and *Athens*, as also in *Egypt*, where a workman (saith *Diodorus Siculus*) is fearfully punished, if he undertake any charge in the Commonwealth, or meddle with any Trade but his own: the which Law, saith *Herodotus*, the *Lacedæmonians* did also approve of. By means of which Laws it was, that the Artists of those Nations attained to such a perfection of Art, as we shall hereafter relate.

IX. *The fervent desire and love of emulation to excel others; the commendable simplicity of Art; together with the content and satisfaction of doing something well, gave a large progress towards the advance of Art.*

It was nobly said of *Scipio Africanus*, that every magnanimous spirit compares himself, not only with them that are now alive; but also with the famous men of all ages; whereby it appears that great wits are always by the sting of emulation, driven forwards to great matters; but he that by too much love of his own works, compares himself with no body, must needs attribute much to his own conceits. Dost thou desire the glory of swiftnes; saith *Martial* (in *Epigr. 36. lib. 12.*) strive to out-go the *Tyger*, and the light *Ostrich*; it is no glory at all to out-run *Asses*. This emulation is the force of great wits, whereby our imi-
tation

tation is provoked sometimes by envy, and sometimes by admiration, whereby it falls out, that the thing we earnestly seek after, is soon brought to some height of perfection; which perfection consists in exact imitation, according to the simplicity of Art, and not in gaudy appearances, which adorns the shadows much more than ever nature adorned the substance. This imitation of the life gave the *Artizan* fame; which fame quickened his aspiring thoughts, adding more fuel to the flames, till such time, as he brought forth a most absolute work, whereby he conceived a joy, content and satisfaction, as durable as the work it self, upon which he now conceived himself a happy man, and through a just assurance of his vertues knows himself to be lifted up above the reach of envy, where he stands secure of his fame, enjoying in this life (as if he were now consecrated unto Eternity) the veneration that is like to follow him after his death; thus an honest *emulation* and *confidence*; bringing forth works of general applause, procureth unto its author an everlasting Glory. Now what a comfortable thing is this, to have a fore-feeling of what we shall afterwards attain to?

X. *Another reason of the augmentation of these Arts, was the manifold uses thereof among men, either for good or evil purposes.*

As in natural Sciences, where words come short, a little Picture giveth us the knowledge of Beasts, Birds, Fishes, and other forms, as well inanimate as animate: In the *Tactics*, how should a General know how to set his men in array, unless he try the case by design or delineation? so in *Architecture* to pourtray Platforms after any fashion, and to work out the Patterns of high and mighty buildings in a little wax, keeping in so small an example the exact proportion of the greater

ter Structure : In *Geometry* the exactness of Lines, Angles, Surfaces and Solids : In *Botanologia*, the exact shapes of Herbs, Plants and Trees : In *Zoologia* the shapes of all living creatures : In *Anthropologia*, the exact description of all the parts of mans body inward and outward : In *Chymia*, the forms of all Chymical vessels and operations : In *the lives of illustrious men and Princes*, to express their forms and shapes to the life, that age might not prevail against them, deserving thereby (as *Varro* saith) the envy of the Gods themselves : In *Geography*, to describe in small Maps Kingdoms, Countreys, and Cities, yea, the whole World : In *Policy*, as *Michal* in saving her husband *David*, *Ptolomæus* in the Image of *Alexander*, which he willingly let *Perdiccas* catch from him, supposing it to have been the body it self, thereby avoiding much blood-shed : *Cyrus* his wooden *Persians* in the Siege of *Sardis*, by which the Towns-men being frighted, yielded the City : *Epaminondas* at *Thebes* by the Image of *Pallas* did wonders : *Amasis* King of *Egypt*, his golden Image made of the Basin, in which his feet used to be washed, which the *Egyptians* religiously worshipped, whereby he brought them to affect him being now a King, who was of an ignoble and base Parentage ; the wooden *Elephants* of *Perseus* King of *Macedonia*, with which he wonted his horses, that they might not be frighted in time of Battel. The Ornaments of Temples, Market places and Galleries, places both publick and private. *Julius Caesar*'s Image in wax, hideous to look to, for twenty three gaping wounds he received, did mightily stir up the *Romans* to revenge his death. Worthy men which had deserved well of the world, had their memories conserved with their Images ; by which all those that aspire to goodness, and to follow their steps, are likewise filled with hope. The *Athe-*

nians have erected unto *Æsop* a most goodly Statue, saith *Phædrus*, and have set a contemptible slave upon an everlasting base, that all might understand, how the way of honour lieth open to every one, and that glory likewise doth not so much follow the condition of our birth as the vertues of our life. *Berosus* excelled in *Astrology*, wherefore the *Athenians* for his divine Prognostications, erected him a Statue with a golden Tongue, set up in their publick Schools, as *Pliny* saith, lib. 7. cap. 37. Publick Libraries were furnished also with Golden, Silver, and Brasse Images of such, whose immortal souls did speak in those places. The provocations of vices have also augmented the Art; it hath been pleasing to engrave wanton lusts upon their cups; and to drink in Ribauldry and Abominations, as *Pliny* saith in the Proem of his 33. Book.

XI. The use therefore of these Arts extending it self so universally to all intents both in war and peace, it came to pass that Artificers were honoured by all sorts of men, which themselves perceiving, did still endeavour to increase this enjoyed favour by a daily advance of their skill.

By Kings they were honoured; for *Demetrius*, whilest at the Siege of *Rhodes*, came to *Protogenes*, leaving the hope of his Victory to behold an Artificer. *Alexander* the Great came also to *Apelles* his Shop, often accompanied with many Princes. It was his will that none but *Polycletus* alone, should cast his Statue in Brasse, that none but *Apelles* alone should paint him in Colours, that none but *Pyrgoteles* alone should Engrave him. The estimation of the Artists were also understood from the esteem and high rates their works were prized at: a picture of *Bularchus* a Painter, was valued at its weight in Gold by *Candaules* King of *Lydia*: *Aristides* was so singular in his Art, that it is reported
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of King *Attalus* that he gave an hundred Talents (which is about seventeen thousand and five hundred pounds sterling) for one of his Pictures. As much had *Polycletus* for one of his. *Apelles* had for painting the Picture of *Alexander* the Great, three thousand and five hundred pounds given him in golden Coin. *Cesar*, payed to *Timomachus* eighty Talents, (about fourteen thousand pounds sterling) for the Pictures of *Ajax* and *Medea*. Many more examples we might produce, but these may suffice; at length no price was thought equal to their worth: so *Nicias* rather than he would sell his Picture called *Necyia* to King *Attalus*, who proffered him sixty Talents, (worth near eleven thousand pound sterling) bestowed it as a Present upon his Country.

XII. *Art meeting with such Successes, created a boldness in Artificers, to attempt even the greatest matters.*

The great *Colosses* of the Antients may serve here for an example; *Zeuxes* above all the rest, hath been admired for his boldness: *Euphranor* also excelled *Parrhasius* in this kind, in that the *Theseus* of the one so infinitely excelled the *Theseus* of the other. So great an excellency of Spirit arose in the old Artificers, as not to be daunted by the Authority of those, who were like to censure their works: it was a great mark they aimed at, to avoid a prosperous shame or fear. And this they accomplished by taking care, not only to give them content, who must of necessity be contented with the work; but also that they might seem admirable unto them which may judge freely without controul. So they heeded to do well in the opinion of accurate and judicious spectators, rather than to do that which liked themselves. And therefore whatsoever is dedicated unto posterity, and to remain as an example for others, had need be well done, neat, polished,

lished, and made according to the true rule and law of Art, forasmuch as it is likely to come into the hands of skilful Artificers, judicious censurers, and such as make a narrow scrutiny into every defect. But as it is impossible to attain to an excellency, or height of any thing without a beginning, so do the first things in going on of the work seem to be the least; the height of Arts, as of Trees, delighteth us very much, so do not the roots; yet can there be no height without the roots. And therefore we shall find that a frequent and continual exercise, as it is most laborious, so it is most profitable; seeing *nature doth begin, hope of profit doth advance, and exercise doth accomplish the thing sought after.* In sum, by doing quickly, we shall never learn to do well; but by doing well, it is very likely we may learn to do quickly. To this speedy and well doing there belongeth three things; *viz.* to add, to detract, and to change. To add or detract, requireth less labour and judgment; but to depress those things that swell, to raise those things that sink, to tye close those things which are scattered, to digest things that are without order, to compose things that are different, to restrain things that are insolent, requireth double pains: for those things may be condemned, which once did please, to make way for inventions not yet thought of. Now without doubt, the best way for emendation is to lay by the design for a time, till it seem unto us as new, or anothers invention; lest our own, like new births, please us too much.

XIII. Lastly, *That which gave the greatest and as it were, the last step towards the augmentation of Art, was that free liberty which Artizans gave every one, to censure, to find fault with their works, and to mark their defects.*

It was the opinion of *Seneca*, that many would have attained unto wisdom, if they had not conceived themselves to be wise already. When *Phydias* made *Jupiter* for the *Eleans*, and shewed it, he stood behind the-door listning what was commended, and what discommended in his work: one found fault with the grossness of his nose, another with the length of his face, a third had something else to say: now when all the spectators were gone, he retired himself again to mend the work, according to what was liked of the greater part; for he did not think the advice of such a multitude to be a small matter, judging that so many saw many things better than he alone, though he could not but remember himself to be *Phydias*. But yet Artificers did not from hence admit their judgments generally in every thing, but they followed their directions only *in such things as did belong to their Profession*. As when *Apelles* made a work, he exposed it in a place where all that passed by might see it; hiding himself in the mean time behind the Picture, to hear what faults were marked in his works, preferring the common people before his own judgment. And he is reported to have mended his work, upon the *censure of a Shoo-maker*, who blaming him for having made fewer latches in the inside of one of the Pantoffles, than of the other: the Shoo-maker finding the work the next day mended according to his advice, grew proud, and began to find fault with the Leg also; whereupon *Apelles* could not contain himself any longer, but looking forth from behind the Picture, said, *Ne sutor ultra crepidam*, bid the Shoo-maker not go beyond his Last; from whence at last came that Proverb. He is the best man that can advise himself what is fit to be done; and he is next in goodness, that is content to receive good advice: but he
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that can neither advise himself, nor will be directed by the advice of others, is of a very ill nature.

C H A P. III.

Of the Consummation or Perfection of the Art of Painting.

I. **A**S Invention gave way to the advancement of Art, so the advancement of the same made way for its Perfection.

The Invention arose from the appearance of things natural, conceived in *Idea's*, as we have abundantly signified (in the first Chapter of this Book) the Advance from the bringing of those *Idea's* to light through practice (by Chap. 2.) from whence arose things very excellent for greatness: very good for their usefulness, choice for their novelty, and singular for their kind.

II. *Ease of Invention, Plenty of Matter, and Neatness of Work*, were steps by which Art was consummated. For *ease of Invention* gave Encouragement, *Plenty of Matter* gave Formation, and *Neatness* gave Delight; all which so conspired together, to put so much of emulation into the Artificer, to undertake, or endeavour to do those things, which in their kind might never after be exceeded: this indeed was their aim of old, which although the antients of this Art could never attain unto, yet did they make such way, that some of their followers have done those things, which never any after them could ever mend, nor themselves scarcely come near. *Easie invention* springs out of a great and well rooted fulness of learning; by being conversant in all sorts of studies, having familiarity with Antiquities; the knowledge of innumerable Historical

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rical and Poetical narrations, together with a thorough acquaintance with all such motions and Idea's of the mind, as are naturally incident unto men: for the whole force of this Art doth principally consist in these things, nothing bearing a greater sway in the manifold varieties of *Painting*.

III. it was the opinion of Pamphilus (the master of Apelles) that without the knowledge of *Arithmetick*, *Geometry*, and the *Opticks*, this Art could not be brought, to *Perfection*.

The examples of *Phidias* and *Alcamenes* is pertinently brought here: The *Athenians* intending to set up the Image of *Minerva* upon a high Pillar, employed those two Workmen, purposing to chuse the better of the two; *Alcamenes* (having no skill in *Geometry* nor the *Opticks*) made her wonderful fair to the eye of them that saw her near. *Phidias* contrariwise (being skilful in all Arts, chiefly the *Opticks*) considering that the whole shape would change according to the height of the place, made her lips wide open, her nose somewhat out of order, and all the rest accordingly, by a kind of resupination: the two Images being brought to view, *Phidias* was in great danger to have been stoned by the multitude, until at length the Statues were set up; where the sweet and excellent stroaks of *Alcamenes* were drowned, and the disfigured distorted hard-favouredness of *Phidias* his work vanished (and all this by the height of the place;) by which means *Alcamenes* was laughed at, and *Phidias* much more esteemed. Of like perfection is *Amulius* his *Minerva*; the Image of *Juno* in the Temple of the *Syrian* Goddess; the head of *Diana* exalted at *Chios*; made by *Bupalus* and *Anthermus*, *Hercules* in the Temple of *Antonia*, &c. An Artificer, saith *Philostratus* in *Proœmio Iconum*, must understand the nature of a man

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thoroughly

throughly, to express all his manners, guise, behaviour, &c. he must discern the force in the constitution of his cheeks, in the turning of his eyes, in the casting of his eye-brows; in short, he must observe all things which may help the judgement; and whosoever is thus furnished, will doubtless excell, and bring things to perfection; he then may easily paint a mad man, an angry man, a pensive man, a joyful man, an earnest man, a lover, &c. in a word, the perfection of whatsoever may possibly be conceived in the mind.

IV. *Continual observation of exquisite pieces (whether Artificial or Natural) nimble conceptions, and tranquillity of mind, are great means to bring Art to Perfection.*

The works of the Antients could never have been so exquisite in the expression of Passions, but by these means. How perfectly did *Zeuxis* paint the modest and chaste behaviour of *Penelope*; *Timomachus* the raging mad fit of *Ajax*; *Silanion* the frowardness of *Apollodorus*; *Protogenes* the deep pensiveness of *Philiscus*; *Praxiteles* the rejoycings of *Phryne*; *Parrhasius* a boy running in Armour; and *Aristides* his *Anapanomenos* dying for love of his Brother? *Bodius* his Image of *Hercules* is of the same nature: *Themistius* shews us the true Image of feigned friendship; *Agellius* a most lively Image of *Justice*; *Apelles* an admirable Picture of *Slander*; thousands of examples more might be drawn out of ancient Authors to approve these things, if these may be thought not sufficient.

V. *This Perfection also lyeth in the truth of the matter, the occasion thereof, and discretion to use it.*

The most antient and famous Painters did make much account of *Truth*, and had rather lose the neatness and glory of their pieces, than to endanger the truth of their story; which indeed is the great commendation of a Picture, for as much as *Lucian* saith,
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That nothing can be profitable but what proceeds from truth. *Occasion* also is a great matter; the Picture of *Bacchus* may here serve for an excellent example, whose passion of love was so clearly expressed therein; casting aside his brave apparel, Flowers, Leaves, Grapes, &c. Now in representing things truly according to the occasion, *discretion* ought to be your guide; for as in Tragedies, so also in Pictures all things ought not to be represented; let not *Medea* (saith *Horace in libro de Arte*) murder her own children in the presence of all the people; let not the wicked *Atreus* boil humane flesh openly; there are doubtless many things, which had better be left out, though with some loss of the story, than with the loss of modesty; wanton, unlawful and filthy lusts (though they may gain the vain title of wit, yet) they diminish not only the estimation of the workman, but also the excellency of the work, debarring it of perfection. Precepts help Art much, in propounding unto us the right way; but where they fail, our wits must supply, by warily considering what is decent and convenient; for this Art requireth studious endeavours; assiduous exercitations, great experience, deep wisdom, ready counsel, veracity of mind, diligent observations, and great discretion.

VI. *To the former add Magnificence, which gives Authority to things excellent.*

Great minded men are most of all given to entertain stately conceits; therefore an *Artizan* ought to be of a *magnanimous* nature; if not, yet that at least he ought with a determined resolution to aim at *magnificent* things. So it seems that nature did dispose *Nicophanes* to a high strain of invention; *Nicophanes* (saith *Pliny, lib. 35. cap. 10.*) was gallant and neat, so that he did paint *Antiquities* for *Eternity*, whereby

he was commended for the magnificence of his work, and gravity of his Art. Such *Artificers* therefore as do bring any thing to perfection, must be of an exceeding great spirit, and entertain upon every occasion great thoughts, and lofty imaginations; by this means they shall gain an everlasting fame; but this is impossible (saith *Longinus*) for any who busie the thoughts and studies of their life about vile and slavish matters, to bring forth any thing which might deserve the admiration of succeeding ages. If any *Artizan* be not naturally of so great a spirit, let him help himself by the reading of *History* and *Poesie*. *History* cannot but inspire a *magnanimous Spirit*, when she represents to us so many rare exploits, and the examples of so many great, noble and valiant souls, who *through-out all ages*, in the midst of most eminent dangers, have demonstrated their vertues and spirits not only to those present, but *all succeeding times*. *Poesie* also being of a haughty and lofty stile, doth much enlarge the mind, and from thence many excellent things are brought: The much admired *Elean Jupiter* which *Phidias* made, himself confessed to be formed after the Image of *Jupiter* described in *Homer*. From the same Poet did *Apelles* paint the Image of *Diana* among the sacrificing Virgins. It is not the present age, but the sacred memory of all posterity, which gives unto us a weighty and durable crown of Glory.

VII. *Exact Analogy or proportion, not only advanced Art, but also brought it a degree nearer Perfection.*

Philostratus calls it *Symmetrie*, some *Analogy*, others *Harmony*; this is the appellation of the *Greeks*; what the *Latines* called it scarcely appears (as *Pliny* saith *lib. 34. cap. 8.*) yet words equivalent in power thereto are found as, *Congruens, equality*, and *Tully* (*libro primo de Officiis*) calls it *Agreement* and apt *composition*; *Vitru-*
vius,

vires, *Commodulation*; *Agellius* calls it a *natural competence*; *Quintilian* approves the word *proportion*; by which saith *Plutarch* beautiful things are perfected: it is one of those things which the most High used in the fabrication of the world, (*Wisd. 11. 20.*) *He hath disposed all things in measure and number and weight.* The first giver of *Symmetrie* or *Analogy* was *Parrhasius*; *Polycletus* was a diligent observer thereof; *Asclepiodorus*, an exact practiser thereof, whose admirer was *Apelles*, who esteemed it to proceed out of some perfections in an *Artificer* surpassing in Art, and which is most apparent in naked and undisguised bodies. *Strabo* saith, that *Phidias* exactly observed this proportion in the Image of *Jupiter Olympicus* sitting. The same *Phidias*, as *Lucian* reports, could exactly tell upon the first sight of a Lions claw, how big a Lion he was to make in proportion to the same claw. *Lineal Picture* is the foundation of all imitation, which if it be done after the true rules of proportion, will lively represent the thing delineated: this is a perfection in kind, which yet cannot be compared to the perfection of a coloured Picture.

VIII. *This point of perfection was further advanced by the exquisiteness of Colouring.*

The perfection of *Colouring* ariseth from a certain right understanding of each colour severally, without which it is impossible to mix any thing rightly, as *Hermogenes* saith. The *Greeks* (as *Porphyrus*) call this mixtion of colours, *corruption*, which word *Plutarch* also used when he said that *Apollodorus* (who first found out the *corruption* or way of shadowing in colours) was an *Athenian*. *Lucian* calls it *confusion*, where he saith, that by the Art of Painting, Images were made by a moderate *confusion* of Colours, as White, Black, Yellow, Red, &c. by which, as *Philostratus* saith

in *Proœmio Iconum*, we know how to imitate the diversities of looks in a mad-man, in a sad or cheerful countenance; the colour of the eye, as brown, gray or black; of the hair, as golden, ruddy, bright, or flaxen; of the cloaths, as cloth, leather, or armour; of places, as chambers, houses, forests, mountains, rivers, fountains, &c. this is done by the accurate mixtion, due application, and convenient shadowing, as *Lucian* saith in *Zeuxide*; through the observation of light, shadow, obscurity and brightness, as *Plutarch* will have it. For this cause, saith *Johannes Grammaticus*, is a white or golden Picture made upon a black ground. Light is altogether necessary, seeing there can be no shade without it: light and shadow cannot subsist asunder, because by the one, the other is apparent, for those things which are enlightned seem to stick out more, and to meet the eyes of the beholder; those which are shaded to be depressed. This same of light and shadow, *Nicias* the *Athenian* did most accurately observe; as also *Zeuxis*, *Polygnotus*, and *Euphranor*, as *Philostratus* saith in *libro secundo de vita Apollonii*, cap. 9. *Apelles* painted *Alexander*, as if he held lightning in his hand, *Philostratus* observed the same in the picture of an Ivory *Venus*, so that one would think it an easie matter to take hold of her; *Pausias* arrived to such an excellency in this, as scarcely any after could attain unto, as in the painted Ox, saith *Pliny*, which he made inimitable. Obscurity or *Darkness* is only the duskiness of a deeper shadow, as brightness is the exaltation of light: if white and black be put upon the same superficies, the white will seem nearest, the black farther off: this being known to make a thing seem hollow, as a ditch, cave, cistern, well, &c. it is coloured with black or brown; and so much the blacker, so much the deeper it seems; extream black representing a bottomless depth;

depth; but to make it rise, as the breasts of a maid, a stretched out hand, &c. there is laid round or on each side so much black or brown, as may make the parts seem to stick out by reason of the adjacent hollowness; *brightness* is sometimes used for necessity, but generally for ornament,) as in the pictures of *Angels, Gems, Armour, Flame, Flowers, Gold, and the like*) the which is made always with a mixture of light; which mixtion Painters call *Harmoge*, but is nothing else save an undiscernable piece of Art, by which the *Artizan* stealthingly passeth from one colour into another, with an insensible distinction; this *Harmoge* is most perfect in the *Rainbow*, which containing evident variety of Colours, yet leaves them so indistinguishable, as that we can neither see where they begin, nor yet where they end, as *Boethius* observes in *libri quinti de arte musica capite quarto*. The last and chief perfection of colouring lieth in the out-lines, or extremities of the work, being cut off with such a wonderful subtilty & sweetness as to present unto us things we do not see, but that we should believe that behind the pictures, there is something more to be seen, than can easily be discerned; thereby setting forth as it were, those things which are really concealed, this was *Berrhasius* his chief glory; but herein *Apelles* exceeded all others whatsoever, as *Petronius in Satyrico* seems to affirm.

IX. *Action and Passion* is next to be considered, in which consists life and motion.

There is not any thing that can add a more lively grace to the work, than the extream likeness of motion, proceeding from the inward Action or Passion of the mind. It is therefore a great point of Art, which leads unto *Perfection*, the which we are to learn by casting our eyes upon nature, and tracing her steps. Consider all the gestures of the body, as the head, by which

is expressed the affections of the mind. The casting down of the head, sheweth dejection of mind ; being cast back arrogance ; hanging on either side, languishing ; being stiff or sturdy, churlishness : by it we grant, refuse, affirm, threaten ; or passively, or bashful, doubtful, fullen, envious, &c. by the motions of the Countenance appears sorrow, joy, love, hatred, courtesie, courage, dejection, &c. by the motions of the countenance, are express the qualities of the mind, as modesty and shamefacedness, or boldness and impudence ; but of all the parts of the countenance, the eyes are most powerful, for they, whether we move or move not, shew forth our joy or sorrow ; this is excellently express by the Prophet, in *Lam.* 3. 48. פלג עיני פלג עיני תור עיני על שבר בת עמי, *palge majim terrad gneni, gnal sheber bat gnammi*, which Tremellius renders, *Rivis equarum perfluit oculus meus, propter contritionem filie populi mei* : and again עיני נגרה ו לא תומה *gneni niggerah velo tidma*, i. e. *oculus meus defluit nec desistit*. For the same purpose it is that nature hath furnished them with tears ; but their motion doth more especially express the intention, as meekness, pride, spitefulness, and the like ; all which are to be imitated, according as the nature of the action shall require, as staring, closed, dull, wanton, glancing, asking or promising something. The *eye-brows* also have some actions, for they chiefly command the fore-head by contracting, dilating ; raising and depressing it ; wrinkled brows shew sadness and anger ; displayed, cheerfulness ; hanging, shame ; elation, consent ; depression, dissent, &c. The *Lips* shew mocking, scorning, loathing, &c. The *Arm* gently cast forth, is graceful in familiar speech ; but the arm spread forth towards one side, shews one speaking of some notable matter ; without the motion of the *hands* all motion is maim-

ed :

ed: The hands as it were *call, dismiss, threaten, request, abhor, fear, ask, demand, promise, deny, doubt, confess, repent, number, measure, rejoyce, encourage, beseech, hinder, reprove, admire, relate, commend, &c.* In admiration we hold the hand up, bent somewhat backward, with all the Fingers closed: In relating we join the top of the fore-finger to the thumb-nail: In promising we move it softly: In exhorting or commending, more quick: In penitence and anger, we lay our closed hand to the breast: We close the fingers ends, and lay them to our mouth when we consider, &c. It is not yet enough that the Picture or Image resembles the proportion and colour of the life, unless it likewise resembles it in the demeanour of the whole body; therefore *Callistratus* calls this Art, the art of counterfeiting manners. *Ulysses* is evidently, saith *Philostratus*, discerned by his austerity and vigilancy; *Menelaus* by his gentle mildness; *Agamemnon* by a kind of Divine Majesty; *Ajax Telamonius*, by his grim look; *Locrus* by his readiness and forwardness. The best Artists ever change their hands, in expressing of *Gods, Kings, Priests, Senators, Orators, Musicians, Lawyers, &c.* *Zeuxis* painted the modesty of *Penelope*: *Echion* made a new married but shamefaced woman: *Aristides* painted a running Chariot drawn with four hortes: *Antiphilus* made a boy blowing the fire: *Philoxenus Eretrius* depicted the Picture of Wantonness: *Parrhasius* made the *Hoplitides* or Pictures of two armed men, as may be seen in *Pliny lib. 35. cap. 9, 10, and 11.* *Boethius* made a babe strangling a goose: *Praxiteles* made a weeping woman, and a rejoycing whore: *Euphranor* drew the picture of *Paris* as a Judge, a Wooer and a Soldier: See *Pliny lib. 34. cap. 8.* where you may have many other examples. It is worth our pains to see in *Callistratus* these descriptions at large, whereby we may see it is a singular . *erfection of Art.*

X. *The last step of Perfection is the right ordering and disposing of things.*

This order or disposition must be observed as well in a picture consisting of one figure, as in a picture of many figures. The nature of man, saith *Xenophon in Oeconomico*, cannot name any thing so useful and fair, as order; a confused piece of work cannot deserve admiration; those things only affect us, wherein every part is not only perfect in it self, but also well disposed by a natural connexion. It is not enough in a building to bring hair, lime, sand, wood, stones, and other materials, unless we take care that all this confused stuff be orderly disposed to the intent. *Nature* it self seems to be upholden by *Order*, and so are all things else which are subjugated to the same Law. Now the way to attain to this true *order of disposition*, is *first* to conceive the *Idea* of the history in the imagination, that the presence of the things in the mind may suggest the order of disposing each thing in its proper place, yet with that subtilty that the whole may represent one entire body. *Secondly*, That the frame of the whole structure of this disposition, may be analogous to the things themselves; so that we may at once represent things which are already done, things which are doing, and things which are yet to be done; perfecting, as *Philostratus* saith, in every one of these things, what is most proper, as if we were busied about one only thing. *Thirdly*, An historical Picture must represent the series of the history, which although the Picture be silent, yet that the *connexion* might (as it were) speak, putting the principal figures in the principal places. *Fourthly*, The parts must be connected, easily rolling on, gently flowing or following one another, hand in hand, seeming both to hold and be upheld, free from all abruption, well grounded, finely framed,

framed, and strongly tyed up together; that the whole may be delightful for its equality, grave for its simplicity, and graceful for its universal analogical composition. *Fifthly*, That most excellent pieces (if the history will suffer it) be shadowed about with rude thickets, and craggy rocks, that by the horridness of such things, there may accrew a more *excellent grace* to the principal; (just as discords in Musick make sometimes concords) from whence results a singular delight. *Sixthly*, That to these things be added *perspicuity*; which, as *Lucian* saith, through the mutual connexion of things, will make the whole compleat and perfect. *Seventhly* and lastly, that the *disposition of the proportion* be observed, in the due distance of each figure, and the position of their parts, of which we have said something, Section seventh; but in general *Pliny* (*lib. 35. cap. 10.*) saith that in this general disposition of proportional distances, we have no rules; our eye must teach us what to do; to which *Quintilian* assents, where he saith, that these things admit no other Judgment, but the judgment of our eyes

XI. Lastly, *For the absolute Consummation or Perfection of the Art, excellency of Invention, Proportion, Colour, Life and Disposition, must universally concur, and conspire, to bring forth that comely gracefulness, which is the very life and soul of the work, the entire and joint Summ of all perfections.*

It is not enough, that a Picture is excellent in one or more of the aforesaid perfections, but the consummation is, that they all concur; for if but one be wanting, the whole work is defective. A good invention affects the mind; true proportion draws the eyes; lively motion moves the soul; exquisite colours beguile the phantasie; and an orderly disposition wonderfully

derfully charms all the senses; if all these unite, and center in one piece, how great an excellence and perfection will appear? *What a comely Grace?* this *Grace* it is, which in beautiful bodies is the life of beauty, and without which, its greatest accomplishments cannot please the beholder. For it is not so much the perfection of Invention, Proportion, Colours, Motion and Disposition apart, which affect the senses, but *all those perfections absolutely united*, which brings forth that comely *Grace*, and *highest Perfection*, which Art aims at, and the Artizan strives after. This *Grace* proceeds not from any rules of Art, but from the excellent spirit of the Artificer; it is easier attained by observation and a good judgement, than learned by Precepts, as *Quintilian* in his *Institutions lib. II. cap. I.* learnedly observes. And this *Grace* is most *graceful*, when it flows with facility, out of a free Spirit, and is not forced or strained out with labour and toil, which quite spoils and kills the life of the work: Now this facility springs from Learning, Study and exercitation. *Art and Nature* must concur to the Constitution of this *Grace*; *Art* must be applied discreetly to those things which we *naturally* affect, and not to things which we loath; lest we miss of *that Glory* which we seek after.

C H A P. IV.

How the Ancients depicted their Gods: and first of Saturn.

WE here intend to comprehend the various ways of the Antients in depicting their Idols, according to the customs of those several Nations, where they were adored and worshipped, and that from the most Antient, chiefest and best approved Authors now extant.

I. The

I. The Ancient *Romans* figured *Saturn* like an old man, with a Scythe or Hook in his hand, by some signifying *Time*, as his name *Chronos* also intimates.

II. They also figured him in the shape of a very Aged man, as one who began with the beginning of the World, holding in his hand a Child, which by piecemeals he seems greedily to devour.

By this is signified the revenge he took for being expelled Heaven by his own Children, of which those which escaped his fury, were only four, Jupiter, Juno, Pluto, and Neptune, by which is shadowed forth the four Elements, Fire, Air, Earth, and Water, which are not perishable by the all-cutting Sickle of devouring Time.

III. *Martianus Capella* depicts him an old man, holding in his right hand a Serpent, with the end of its tail in its mouth, turning round with a very slow pace, his temples girt with a green wreath, and the hair of his head and beard milk white.

The wreath on his head shews the Spring time, his snowy hair and beard, the approach of churlish winter; the slowness of the Serpents motion, the sluggish revolution of that Planet.

IV. *Macrobius* describes him with a Lions head, a Dogs head, and a Wolfs head.

By the Lions head is signified the time present, (which is alwayes strongest, for that which is must needs be more powerful than that which is not :) by the Dogs head, the time to come, (which always favours on us, and by whose alluring delights we are drawn on to vain and uncertain hopes :) and by the Wolfs head, time past, (which greedily devoureth whatsoever it finds, leaving no memory thereof behind.)

V. *Macrobius* also saith, that among the rest of his descriptions, his feet are tyed together with threds of Wooll.

By which is shewed, that God does nothing in haste, nor speedily castigates the iniquities of man, but proceeds slowly and unwillingly, to give them time and leisure to amend.

VI. *Eusebius* saith, that *Astarte* (the daughter of *Cælum*, wife and sister of *Saturn*) did place also upon his head two wings, demonstrating by the one, the excellency and perfection of the mind; by the other, the force of sense and understanding.

The *Platonicks* understand by *Saturn* the mind, and its inward contemplation of things cœlestial, and therefore called the time in which he lived, the golden Age, it being replete with quietness, concord, and true content.

CHAP. V.

How the Antients depicted Jupiter.

I. **O** *Rpheus* describes him with golden locks, having on his temples peeping forth two golden horns, his eyes shining, his breast large and fair, having on his shoulders wings.

By the golden locks is signified the Firmament, and its glorious army of tralucēt Stars: by his two Horns, the East and West: by his eyes, the Sun and Moon: by his breast, the spacious ambulation of the air; and by his wings the fury of the winds.

II. *Porphyrius* and *Suidas* depicture the Image of *Jupiter* sitting upon a firm and immoveable seat; the upper parts naked and uncloathed, the lower parts covered and invested; in his left hand a Scepter; in his right hand a great Eagle, joined with the figure of *Victoria*

This

This Image was erected in Piræus, a stately and magnificent Gate of Athens: by the seat is shewed the permanency of Gods power: the naked parts shew that the compassion of the Divine power is always manifest to those of an understanding Spirit: the lower parts covered, shew that while we wallow in the world, and as it were rock'd asleep with the illicebrous blandishments thereof, that the divine knowledge is hid and obscured from us: by the Scepter is signified his rule over all things: by the Eagle and Victoria how all things stand in vassalage and subjection to the all-commanding power.

III. *Martianus* depicts him with a regal crown, adorned with most precious and glittering stones; over his shoulders, a thin vail (made by *Pallas* own hands) all white, in which is inserted divers small pieces of glass representing the most resplendent Stars; in his right hand he holdeth two balls, the one all of Gold, the other half Gold, half Silver; in the other hand an Ivory Harp with nine strings, sitting on a foot-cloth, wrought with strange works, and Peacocks feathers; and near his side lieth a tridental gold embossed mass.

IV. *Plutarch* saith that in *Crete*, he had wholly humane shape and proportion, but without ears.

By that was signified that Superiours and Judges ought not to be carried away by prejudice nor persuasion, but stand firm, stedfast and upright to all without partiality.

V. Contrariwise the *Lacedæmonians* framed his picture with four ears.

By that they signified that God heareth and understandeth all things; and that Princes and Judges ought to hear all informations, before they deliver definitive sentence or judgment.

VI. *Pausanias*

VI. *Pausanias* saith that in the temple of *Minerva* (among the *Argives*) the statue of *Jupiter* was made with three eyes; two of them in their right places; the other in the middle of his fore-head.

By which is signified his three Kingdoms; the one Heaven; the other Earth; the last Sea.

VII. With the *Eleans* (a people of *Greece*) the Statue of *Jove* was compacted of Gold and Ivory, empaled with a Coronet of Olive leaves; in his right hand the Image of *Victoria*; in his left a Scepter, on the top of which was mounted the portraicture of an Eagle, upon a seat of Gold, enchased with the forms of many unknown Birds and Fishes, upheld and supported by four Images of *Victoria*.

VIII. In *Caria* (a place of the lesser *Asia*) the Statue of *Jupiter* was made holding in one of his hands a Pole-axe.

The reason of this was, as Plutarch saith from Hercules, who overthrowing Hippolyta the Amazonian Queen, took it from her, and gave it to Omphale his wife a Lydian. The Platonists understand by Jupiter, the soul of the world; and that divine spirit through whose Almighty Power, every thing receives its being and preservation.

IX. He is also painted with long curled black hair in a purple robe, trimmed with Gold, and sitting on a golden throne, with bright yellow clouds dispersed about him.

CHAP. VI.

How the Antients depicted Mars.

I. **M** *Acrobiius* saith that the Pictures of *Mars* were adorned and beautified with the Sun-beams, in as lively a manner as could be devised ; with an Aspect fierce, terrible, and wrathful, hollow red eyes, quick in their motion, face all hairy, with long curled locks on his head, depending even to his shoulders, of a coal black colour, standing with a spear in the one hand, and a whip in the other.

II. He is also sometimes depicted on horse-back and sometimes in a Chariot, drawn with horses called *Fear* and *Horror* : some say the Chariot was drawn with two men, which were called *Fury* and *Violence*.

III. *Statius* saith he wore on his head a helmet most bright and shining, so fiery as it seemed there issued flashes of lightning ; a breast-plate of Gold, insculp'd with fierce and ugly Monsters ; his shield depainted all over with blood, enchased with deformed beasts, with a spear and whip in his hands, drawn in a Chariot with two horses, *Fury* and *Violence*, driven with two churlish Coach-men, *Wrath* and *Destruction*.

IV. *Isidorus* saith that the Picture of *Mars* was depainted with a naked breast.

By which is signified that men ought not to be timorous in war, but valiantly and boldly expose themselves to hazards and dangers.

V. *Statius* saith that the house of *Mars* was built in an obscure corner of *Thracia*, made of rusty, black Iron ; the Porters which kept the gates were *Horror*

and *Madness*; within the house inhabited *Fury*, *Wrath*, *Impiety*, *Fear*, *Treason* and *Violence*, whose governess was *Discord*, seated in a regal throne, holding in one hand a bright sword, and in the other a basin full of humane blood.

VI. *Ariosto*, describing the Court of *Mars*, saith, that in every part and corner of the same were heard most strange Echoes, fearful shrieks, threatnings, and dismal cries; in the midst of this Palace was the Image of *Virtue*, looking sad and pensive, full of sorrow, discontent and melancholy, leaning her head on her arm: hard by her was seated in a chair *Fury* in triumph: not far from her sat *Death*, with a bloody stern countenance, offering upon an *Altar* in mens skulls, humane blood, consecrated with coals of fire, fetch'd from many Cities and Towns, burnt and ruined by the tyranny of War.

CHAP. VII.

How the Antients depicted Phœbus or Sol.

I. **M** *Acrobis* saith that in *Assyria* was found the Statue of *Apollo*, *Phœbus* or *Sol*, the father of *Æsculapius*, in the form of a young man, and beardless, polished with Gold, who stretching out his Arms, held in his right hand a Coachmans whip; and in his left a thunderbolt with some ears of Corn.

The Tyrant of Syracuse, *Dionysius*, with fury pulled off the beard from the figure of *Æsculapius*, saying it was very incongruous that the father should be beardless, and the son have one so exceeding long.

II. *Eusebius*

II. *Eusebius* saith that in *Egypt* the Image of *Sol* was set in a ship, carried up, and supported by a *Crocodile*; and that they (before letters were invented) framed the shape of the Sun, by a Scepter, in the top of which was dexterously engraven an eye.

The Scepter signified Government: the Eye, the power, which over-sees and beholds all things.

III. The *Lacedæmonians* depicted *Apollo* with four ears, and as many hands.

By which was signified the judgment and prudence of God being swift and ready to hear, but slow to speak, and from thence grew that proverb among the Grecians.

IV. *Herodotus* reporteth that the *Phœnicians* had the Statue of the Sun made in black stone; large and spacious at bottom, but sharp and narrow at top, which they boasted to have had from Heaven.

V. *Lactantius* saith that in *Persia*, *Phœbus* or *Apollo* was their chiefest God, and was thus described; he had the head of a Lion habited according to the *Persian* custom, wearing on his head such ornaments as the women of *Persia* used, holding by main force a white Cow by the horns.

The head of the Lion sheweth the Suns dominion in the sign Leo; the Cow shews the Moon, whose exaltation is Taurus: and his forceable holding, the Moons Eclipse which she cannot avoid.

VI. *Pausanias* telleth that in *Patra* a City of *Achaia*, a metalline Statue of *Apollo* was found in the proportion of an Ox or Cow.

VII. *Lucianus* saith that the *Assyrians* shaped him with a long beard (shewing his perfection;) upon his breast a shield; in his right hand a spear, in the top of which was *Victoria*; in his left hand *Anthos*, or the Sun flower; this body was covered with a vestment, upon which was painted the head of *Medusa*, from which

dangled downwards many swarms of snakes; on the one side of him *Eagles* flying, on the other side a lively *Nymph*.

VII. The *Egyptians* composed the statue of the Sun in the shape of a man, with his head half shaven.

By the head half shaven, is signified that though his beauty or shining may be clouded for a time, yet that he will return and beautifie the same with his pristin brightness; as the growing of the hairs (which signifie his beams) to their full extent and perfection again, may denote.

IX. *Martianus* thus describes him; upon his head (saith he) he wears a royal and gorgeous Crown, in-chased with multitudes of precious Gems; three of which beautifie his fore-head; six his temples; and three other the hindermost part of the Crown: his hair hanging down in tresses, looks like refined Gold, and his Countenance wholly like flame: his vestment is thin, subtil, and wrought with fine purple and gold; in his right hand he holds a bright shield, and in his left a flaming fire-brand: on his feet he hath two wings, beset with fiery Carbuncles.

X. *Eusebius* writeth that in *Elephantinopolis* (a City in *Egypt*) the Image of *Apollo* was framed to the due likeness of a man throughout the body, save only, that he had the head of a Ram, with young and small horns, and his aspect of a *Cerulean* and blewish green, not unlike to that of the Sea.

The head of the Ram signifies the Sun's exaltation in the sign Aries; and the young horns the change or New of the Moon, made by her conjunction with the Sun, in which she looks blewish.

XI. He is also drawn with long curled golden hair crowned with a lawrel in a purple robe, a silver bow in his hand, sitting on a throne of Emeralds.

There

There might you see with greatest skill intexed,
 The portraicture of Phoebus lively drawn;
 And his fair Sisters shape thereto annexed,
 Whose shining parts seem'd shadow'd o're with lawn.
 And though with equal art both were explain'd,
 And workmens care gave each of them their due,
 Yet to the view great difference remain'd,
 In habit, shape, aspect, and in their hue.
 For one of them must give the day his light:
 And th' other reign Commandress of the night.

C H A P. VIII.

How the Antients depicted Venus.

I. **H**ER Statue is framed in the shape of a most beautiful and young woman, standing upright in a huge shell of fish, drawn by two other most ugly and strange Fishes, as *Ovid* at large noteth.

II. *Pausanius* saith she is drawn in a Coach, through the airy passages, with two white Doves (as *Apuleius* also affirmeth) which are called the birds of *Venus*.

III. *Horace* and *Virgil* affirm that the Chariot of *Venus* is drawn by two white Swans, of which *Statius* also maketh mention, who saith that those birds are most mild, innocent, and harmless, and therefore given unto *Venus*.

IV. *Praxiteles* an excellent engraver in the Island of *Gnidos*, made her Image naked, and without clothes, as also did the Grecians.

By which was signified that all luxurious and licentious people were by their inordinate lusts, like beasts deprived of sense, and left as it were naked and despoiled of reason, and understanding; and oftentimes also stripped thereby of their riches, goods and estates.

V. *Lastantius* saith that the *Lacedemonians* framed and composed the Image of *Venus* all armed like a Warriour, holding in one hand a Spear, in the other a Shield or Target.

And this was by reason of a certain Victory which the women of that place got over their enemies, the people of *Messenia*, which success they supposed to have proceeded from the power and assistance of *Venus*, as inspiring these womens hearts with courage, stoutness and resolution.

VI. She is also depicted with yellow hair attired with black; a scarlet, or else dun-coloured robe.

CHAP. IX.

How the Antients depicted Mercury.

I. **T**HE Antients described him in the shape of a young man without a beard, with two small wings fixed behind his shoulders and ears, his body almost all naked, save that from his shoulders depended a thin vail, which winded and compassed about all his body; in his right hand he held a golden purse, and in his left a *Caduceus*, or snaky staff, to wit, a slender white wand, about which two Serpents do annodate and entwine themselves, whose heads meet together just at the top, as their tails do at the lower end.

This resemblance was called Concordia or Signum Pacis; upon which it came to pass, that Ambassadors, and great men in matters of State, carried always in their hand such a like Staff, and were called Caduceators.

II. *Apuleius* writeth that *Mercury* was a very youth, having very short hair on his head of an Amber colour, and curled, having for a vestment only a subtil and thin vail made of purple Silk.

III. *Martianus Capella* describes him young, yet of a strong and well composed body, with certain young hairs of a yellowish colour sprouting out of his chin.

IV. *Pausanias* saith that in a Province of *Corinth*, he was depicted like a young man carrying a ram upon his shoulders: and that a Statue (brought from *Arcadia* unto *Rome*) erected in the temple of *Jupiter Olympicus*, had on its head a helmet of engraven steel; and over his shoulder, a coat, who held under his arm the Image of a Ram.

V. Among some of the *Egyptians* his Image was framed with a head like a Dog's, holding in his right hand a *Caduceus* or snaky wand; shaking with his left a green bough of a Palm.

By the head of the Dog was understood subtilty and craftiness (no beast being so subtil as a Dog;) by the snaky wand the power of wisdom and Eloquence in producing of peace signified by the green Palm.

VI. By some he was depicted in the similitude of a very aged man, his head almost bald, saving that on the sides there remained some few hairs, short and curled; his look grim, severe and fowre; his complexion of a tawny, antient hue; his upper garment, of a Lions skin; in his right hand a huge pole-ax, in his left hand an Iron bow: at his back hanging a Quiver of steel-headed arrows: to the end of his tongue

were fastned many small chains of Gold, at whose ends were tyed multitudes of all sorts of men, which he seemed to draw unto him; looking always backward, to behold the innumerable troops of people following him.

By this description is signified the all powerful and attractive vertue of Eloquence; which by his age is understood to be found only in old, wise and experienced men, as being in them more mature and perfect, than in those of younger years, of which Homer speaks at large in his Commendation and Praise of Nestor: from whose mouth (saith he) plentifully rolled forth most pleasant and dulcid streams; whose pen distilled Crystalline drops of delicious sweetness; whose works and fruits so compleatly adorned with golden sentences, asswageth the malice of time, and mitigateth and allayeth the spight of forgetfulness, that his perpetuity is ingraven in the brass-leaved books of eternal memory, never to be blotted out.

VII. He is also drawn with long curled yellow hair in a coat of flame colour, and with a mantle purely white, trimmed with Gold and Silver; his Beaver white, with white feathers, his Shooes Golden, his Rod Silver.

C H A P. X.

How the Antients depicted Diana or Luna.

I. **D**iana, Cynthia, Lucina or Luna was according to Propertius depicted in the likeness of a young beautiful virgin; having on either side of her forehead two small glistering horns, newly putting forth, drawn through the air in a purple coloured Coach, by two swift paced horses, the one of a sad Colour, the other of a white.

These

These two differing horses Boccace saith, shew that she hath power both in the day and night.

II. *Claudianus* saith that her Chariot is drawn by two white Bullocks, (which Image the *Egyptians* worshipped with great zeal & reverence) having one of their flanks bespotted with divers stars, and on their heads two such sharp horns as the Moon hath in her chiefest wane.

III. *Cicero* describes her statue (which he brought out of a temple in *Cicilia*) of a wonderful height, and large dimension, the whole body covered with a thin vail, of a youthful aspect, holding in her right hand a lively burning torch, and in her left an Ivory bow, with a Quiver of Silver-headed arrows hanging at her back.

IV. The Poets (who call her the goddess of hunting and imperial governess of Woods and Groves) describe her in the habit of a young *Nymph*, with her bow ready bent in her hand, and a Quiver of arrows hanging by her left side; a swift paced Grey-hound fast tyed to her right side, with a collar about his neck; and after her following troops of *Sylvan Virgins*, which are chaste, and are called the *Nymphs* of *Diana*.

V. These *Virgins* and *Votresses* of the Goddess, are thus described.

*Scarce mounted Sol upon his glorious Car,
When o're the lofty hills, and lowly plain,
Running apace, you might perceiue afar
A Troop of Amazons to post amain.*

*But when they nearer came unto your view,
You might discern Diana and her Crew.
A careless crew of lively Nymphs, despising
The joyous pleasures and delights of love;
Wasting their days in rural sports devising:
Which know no other, nor will other prove.*

Wing'd with desire to overtake the chase,
 Away they flung with unresisted pace.
 Their necks and purple veined arms are bare,
 And from their Ivory shoulders to their knee,
 A Silken vestment o're their skin they ware,
 Through which a piercing eye might chance to see.

Close to their bodies is the same engirted,
 Bedeck'd with pleasing flowers there inserted.
 Each in her hand a Silver bow doth hold,
 With well-stor'd Quivers hanging at their backs:
 Whose arrows being spent they may be bold
 To borrow freely of each others packs.

Thus are these nimble skipping Nymphs display'd,
 That do attend that Goddess, Queen and Maid.

VI. In *Arcadia* saith *Pausanias*, was a statue of *Diana*, covered over with the skin of a Hind, and from her shoulders hung a Quiver of Arrows; in one hand a burning Lamp, the other leaning upon the heads of two serpents, and before her feet a hound.

VII. The *Egyptians* worshipped her under the name of *Isis*; and depicted her covered with a black and sable vestment, in token that she her self giveth no light; holding in one hand a Cymbal, in the other an earthen vessel of water, upon which as *Servius* saith, many thought her to be the Genius of *Egypt*.

By the Cymbal is shewed the murmurings and roarings of *Nilus*, when it overflows *Egypt*; and by the other vessel the nature of the Country, which is moist and full of lakes, pools and rivers.

VIII. She is also depicted with yellow hair, a grass green mantle, trimmed with Silver; buskins Silver; bow Golden, Quiver of various colours.

IX. *Nymphæ Diane* in white linnen to denote their Virginity, and their garments girt about them, their arms and shoulders naked, bows in their hands, and arrows by their sides.

C H A P. XI.

How the Antients depicted Janus.

I. **J**anus is depicted with two faces; in the one of his hands is a long rod or wand; in the other a Key.

The two faces of Janus signifie time; the one being withered and hoary, shews time past, the other youthful and beardless, time to come.

II *Pliny* saith that *Numa* King of the *Romans*, caused the statue of *Janus* to be hewed out in such sort, that the fingers of his hands appeared to be three hundred sixty five, to shew that he was God of the year, whereupon they called the first month of the year *Januarius*, from *Janus* their God.

Under the feet of Janus are oftentimes placed twelve Altars, shewing thereby the months of the year, or signs of the Zodiack, through which Sol makes his revolution.

III. The *Phœnicians*, as *Cicero* and *Macrobius* report, framed his Image in the form of a serpent, holding her tail in her mouth, and continually turning round.

IV. Some depicted *Janus* with four faces, (as were those statues which were found in divers paces of *Tuscany*.)

By the four faces were signified the four seasons of the year, Spring, Summer, Autumn, and Winter: which some think to be Venus, Ceres, Bacchus and Vulcan; and sometimes the winds with Æolus their Commander.

C H A P. XII.

How the Antients depicted Aurora.

I. **H**omer describes her like a young Virgin, having her hair dishevelled, and hanging loose about her shoulders being of the colour of the purest gold, sitting in a golden chair, with all her vestments of that hue and colour.

II. *Virgil* saith, that upon the instant time of the fable nights departure, she cometh with one of her hands full of Roses, Gilliflowers and Lillies, taken out of a basket which she carries in the other hand, which she besprinkles on the marble pavement of the lower Heavens, adorning the Sun with unspeakable beauty.

III. Others describe her, holding in one hand a flaming torch, and drawn in a gorgeous and star-bespotted Chariot, by winged *Pegasus*; which favour she obtained of *Jupiter* by many importunate requests, presently after the downfall of *Bellerophon*.

IV. She is as it were the Herald and Messenger of *Phæbus*, who receives her being from the vertue of his beams; and is no other but that rubicund and Vermillion blush in Heaven, which *Sol's* first appearance worketh in the *Orient*, and from thence descending beautifies our *Hemisphere* with such a resplendency.

V. She is also depicted in a purple robe, in a blew mantle fring'd with Silver.

C H A P. XIII.

How the Antients depicted Juno.

I. SHE was set forth by the Antients like a middle aged woman, holding in one hand a Silver vessel, in the other a sharp Spear; and *Homer* saith she was drawn in a Chariot glistering with precious stones; whose wheels were Ebony, and their nails fine silver, mounted upon a Silver Seat; and drawn with horses, which were fastned with chains of Gold.

II. She is oftentimes depicted with a Scepter in her hand, to shew that she hath the bestowing of Governments, Authorities and Kingdoms.

III. *Martianus* depicts her (sitting in a chair under *Jupiter*) with a thin veil over her head, with a Coronet upon it, in chased and adorned with many precious Jewels; her inward vestment fine and glittering, over which depended a mantle of a sad and darkish colour, yet with a secret shining beauty; her shooes of an obscure and fable colour; in her right hand a thunderbolt; and in her other a loud noised Cymbal.

IV. *Pausanias* saith that in a temple in *Corinth*, her statue (made of Gold and Ivory) was adorned with a glorious Crown, on which was insculped the pictures of the *Graces*; with a *Pomegranate* in the one hand, and a Scepter (on the top of which a Cuckow) in the other: for that *Jupiter*, when he was first enamoured of *Juno*, transformed himself into that bird

Touching this story (and others of like kind) Pausanias saith, that although he did not believe such things to be true, nor any others, which are so written of the Gods;

yet, saith he, they are not altogether to be rejected, in that there were no such things as reported but that they were impleated and filled with mysteries, and carried in themselves an inward meaning, and secret understanding, the which no doubt some might by their writings have unshadowed, if the tyranny of fore-passed times had not destroyed and obliterated the same.

V. *Tertullian* writeth that in *Argos* a City in *Greece*, the statue of *Juno* was covered all over with the boughs of a Vine, and underneath her feet lay the skin of a Lion, which discovered the hatred and disdain she bare towards *Bacchus* and *Hercules*, to whom (as the Poets say) she was step-mother.

VI. Some have painted her a middle aged woman, holding in one hand a poppey-flower or head : with a yoke or pair of fetters lying at her feet.

By the yoke was meant the band of marriage, which tyeth man and wife together : and by the Poppey, fruitfulness or the innumerable issue of children, which are brought forth into the world (signified by the roundness of the Poppey head, and its numberless seeds therein contained.) From hence many suppose her to be the goddess of marriage.

VII. She is also painted with black Hair and Eyes, adorned with a sky-colour'd mantle, or pied : wrought with Gold and peacocks eyes : like the orient circles in the Peacocks train.

C H A P. XIV.

How the Antients depicted Ops or Tellus.

I. **M** *Artianus* saith, that *Ops* (the wife of *Saturn*) is an old woman, of great bigness, continually bringing forth children, with whom she is encompassed and set round, going in a green vestment, with a veil over her body, spotted with divers colours, wrought with infinite curious knots, and set with all sorts of Gems and Metals.

II. *Varro* (out of *Boccace*) thus describes her: she is crowned (saith he) with a Crown insculpt with Castles and Towers; her apparel green, overshadowed with boughs; in the one hand a Scepter, in the other a Ball or Globe; and near to her a Chariot of four wheels, drawn by four Lions.

By the Crown is signified the habitations of the earth; by the greenness and boughs, the increase thereof; by the Scepter, the Kingdoms and Governments of the world; by the Ball, the roundness thereof; by the Chariot, the continual motion, change and alteration of things; by the Lions, the wisdom and strength of mankind, by which things are carried on and managed.

III. *Isidorus* saith, that this Goddess was painted holding a key in one of her hands: which shews, that in the winter the bowels of the earth are locked up by reason of cold; which at the approach of Spring and Summer is unlocked again.

IV. She was sometimes depicted in the form of an antient woman, having her head circumcinct with ears of corn, holding in her hand a poppey-head: drawn in a Chariot (as *Orpheus* saith) with two fierce and untamed *Dragons*.

V. The

V. The earth is also called *Ceres*, which many have depicted with torches, lights and fire-brands in her hands; as *Praxiteles* in a temple, seated upon a promontory of *Attica*.

VI. She is also pictured in a long green mantle.

CHAP. XV.

How the Antients depicted Neptune and the Sea Gods.

I. **N***ep*tune among the Antients is depainted with several countenances, sometimes with mild and pleasant looks, sometimes with lowring and sad, and at other times with a mad, furious and angry aspect; naked, holding in his hand a silver trident or forked mace, standing upright in the concavity of a great Sea shell, forcibly drawn by two monstrous horses, which from the middle downwards have the proportion and shape of fishes, as *Statius* saith.

That variety of Aspects (according to Virgil and Homer) is given him from the Sea, in that it at sundry times sheweth it self so: and the trident; the three Gulfs of the Mediterranean Sea.

II. Sometimes he is depainted with a thin veil hanging over one of his shoulders, of a *Cerulean* or blewish colour.

III. *Lucianns* setteth him down with marvellous long hair hanging down over his shoulders, of a very sad and darkish colour.

Yet Servius and others affirm, that all the Gods of the Sea were for the most part in the shape of old men with white and hoary hairs, proceeding from the froth or spume of the Sea.

IV. *Plato* describes him in a sumptuous Chariot, holding in one hand the reins of a bridle: in the other a whip, drawn by Sea-horses galloping.

V. *Martianus* describes him of a greenish complexion, wearing a white Crown: signifying thereby the spume and froth of the Sea.

VI. *Glaucus* (another Sea God) saith *Philostratus*, hath a long white beard and hair, soft and dropping about his shoulders, his eyes green and glistening; his brows full of wrinkles, and green spots; his breast all over-grown with greenish Sea-weed or moss, his belly, and from thence downwards fish-like, full of fins and scales.

VII. *Galatea* (a Sea Goddess) is described (by the said *Philostratus*) to be drawn in a strange framed Chariot, by two mighty Dolphins, which were guided by two silver reins held in the hands of old *Triton's* daughters; over her head, a Canopy made of Purple, silk and silver, with her hair hanging carelessly over her shoulders. See her described as a Nymph, Chap. 32. Sect. 7.

VIII. *Oceanus* (the father of all the Sea Gods) saith *Thales Milesius*, is depainted, drawn on a glorious Chariot, accompanied and attended with a mighty company of Nymphs; with the face of an old man, and a long white beard.

IX. *Æolus* is depainted with swoln blub cheeks, like one that with main force strives to blow a blast; two small wings upon his shoulders, and a fiery high countenance.

He is called the God and Ruler of the winds, whose descriptions are in the thirty fourth Chapter of this Book.

X. *Thetis* (another Sea Goddess) is depicted by the sixth Section of the two and thirtieth Chapter of this Book.

XI. *Neptune* is also depicted with long hoary hair in a blew or Sea-green mantle trimmed with Silver, riding in a blew Chariot, or on a Dolphin of a brown black colour, with a Silver trident in his hand.

C H A P. XVI.

How the Antients depicted Nemesis.

I. **S**He was by *Macrobius* described with wings on her shoulders; hard by her side the rudder of a ship, she her self standing upright upon a round wheel; holding in her right hand a Golden ball, in the other a whip.

II. She is often depicted, holding a bridle of an horse in one hand, and in the other a staff.

III. *Chrysippus* (as *Aulus Gellius* saith) described her like a young Virgin, beautiful and modest, with an eye prying round about her, for which cause the ancients called her the all discerning Lady.

This Nemesis, as Pausanias & Ammianus Marcellinus say, was held to be the Goddess of Punishments, who castigates the offences of Malefactors, with pains and torments according to their sins and demerits; and rewarding the virtuous with honour and dignities: she was the daughter of Justitia (who dwells and inhabits very secretly, within the house of Eternity, recording the offences of the wicked) and a most severe and cruel punisher of arrogancy and vain glory. Macrobius saith, that this Nemesis was adored among the Egyptians (by them called also Rhamnusia) as the revenger and chief enemy of Pride, Insolency and Haughtiness; and that she had erect and dedicated unto her, a most stately and magnifique statue of Marble.

C H A P. XVII.

How the Antients depicted Pan.

I. **P**An (the God of Flocks and Sheep) is from the middle upwards in proportion like a man, with his face ruddy and sanguine, being very hairy; his skin and breast covered with the skin of a spotted Doe or Leopard; in the one hand a shepherds hook, in the other a whistle: from the middle downwards the perfect shape of a Goat, in thighs, legs and feet.

II. *Justine* saith, that Pan's Statue was made in a Temple in Rome, near the hill *Palatine*, appearing to the view all naked, saving that it was slightly enshadowed and covered with a Goats skin.

Thereby is signified that (as it was reputed in those dayes) Pan kept his habitation among Hills, Woods and Groves, who was indeed most of any adored and worshipped by shepherds, as he that had the peculiar care and Government of their flocks.

III. Goat-ear'd Pan, his small tipt new grown horns

Advance themselves, about whose either side

A flow'ry Garland twines, and there adorns

His curled Temples with a wondrous Pride.

His face is of a high and reddish blush,

From which hangs down a stiff rough beard or bush.

And for his bodies vesture he doth wear

The finest skin of the most spotted Doe,

That ever any in those woods did bear,

Which from his shoulder loose hangs to his toe.

And when he walks, he carries in his hand

A Shepherds hook, made of a knotless wand.

Servius saith, by the horns is signified either the Beams of the Sun, or New of the Moon, at what time she is horned: his red face signifies the element of fire: his long beard, the Air: his spotted garment, the starry firmament: his Shepherds hook, the rule and Government of nature.

IV. After the form of *Pan* were the *Fauns*, *Sylvans*, *Satyres* and *Fairies* set forth, having little short horns growing on their heads, with small ears, and short tails.

These are held among some people in very great regard and observance, being of a wonderful speed in running.

Plutarch writeth, that there was one of these brought and presented for a rare gift unto *Sylla*, as he returned from the wars against *Mithridates*.

V. *Plato* understandeth by *Pan*, Reason and Knowledge; which is twofold; the one of a man, the other of a beast: by the upper part of *Pan*, he signifies truth, accompanied with *Reason*, which being Divine, lifteth man up towards *Heaven*: by the lower parts of him is signified the falseness, beastliness and rudeness of those, who living here in the World, are only delighted with the pleasures and foolish vanities thereof.

CH A P. XVIII.

How the Antients depicted Pluto.

I. **M** *Artianus* saith, that *Pluto* sitteth (in the lower region) majestically in a chair, holding in one of his hands a black imperial Scepter, and on his head a stately Crown; at whose left hand sitteth his wife *Proserpina*, attended with many *Furies*, and evil Spirits, and at whose feet lyeth chained the Dog *Cerberus*.

II. The

II. The Antients also have painted him in a Chariot, drawn with four furious black horses, from out whose fiery nostrils proceedeth thick and ill-favoured smoak, as *Claudianus* saith.

III. Some say, that his head is encircled with a garland of *Cypress* leaves; others with *Narcissus* leaves.

The first shew sadness and horror, used in burials, and about the dead: the other are more grateful, and are used in memory of the untimely death of that youth.

IV. *Charon* (*Pluto's* Ferriman, which carries souls over the three rivers of Hell, *Acheron*, *Cocytus* and *Styx*) is described old, yet exceeding strong, with a black mantle hanging loosely over his shoulders, as *Boccace* and *Servius* say.

By Charon is understood time; and whereas he is supposed to have the transportation of souls from the one side of those rivers to the other; thereby is signified, that time, so soon as we are born and brought forth into the world, doth carry us along by little and little unto our deaths; and so setteth us over those rivers, whose names by interpretation signifie sorrowfulness, for that we pass this life with misery and adversity.

V. He is also depicted with long, curled black hair; in a robe of cloth of Gold.

C H A P. XIX.

How the Antients depicted the Parcae, or Sisters.

I. **T**HE Sisters which are called *Parcae*, are said to attend upon *Pluto*, which are three, and are called *Clotho*, *Lachesis* and *Atropos*.

II. *Clotho* takes the charge of the Births and nati- vities of mortals: *Lachesis* of all the rest of their life; and

and *Atropos* of their death, or departure out of this world.

III. They are all three depicted sitting on a row, very busily employed in their several offices; the youngest Sister drawing out of a Distaff a reasonable big thread: the second winding it about a wheel, and turning the same, till it becomes little and slender: the eldest (which is aged and decrepit) stood ready with her knife, when it should be spun, to cut it off.

IV. And they are described to be invested with white veils, and little Coronets on their heads, wreathed about with garlands, made of flowers of *Narcissus*.

CHAP. XX.

How the Antients depicted Minerva, or Pallas.

I. **M***inerva* (as taken for *Bellona*) as *Licophrones* saith, was depicted with a flaming fire-brand in her hand by the Antients.

II. Most Writers have described *Minerva* in the shape of a young woman, of a lively and fresh countenance, yet of an angry look, fix'd stedfast eye of a blewish green colour, compleatly armed at all weapons, with a long Spear in the one hand, and in the other a Crystal shield, or target: upon her helmet a garland of Olive branches, and two children, Fear and Horror, by her side with naked knives in their hands, seeming to threaten one another.

III. *Pausanias* saith, that in *Greece* the statue of *Minerva* was made with an helmet, on the top of which was the shape of a *Sphynx*; and on the sides thereof, two carved *Griffins*.

IV. *Phidias*

IV. *Phidiās* making her statue in *Greece*, placed on the top of her Helmet the form of a Cock.

V. She was also painted in *Greece*, sitting on a stool, and drawing forth little small threads from a distaff; for that the Antients supposed her to be the Inventress of Spinning and the like.

VI. Lastly she is depicted with a blew mantle embroidered with Silver: and is called the Goddess of Wisdom.

C H A P. XXI.

How the Antients depicted Vulcan.

I. **V***ulcan* is depicted, standing, working and hammering in a Smiths forge, on the hill *Ætna*, framing Thunderbols for *Jupiter*, and fashioning Arrows for the God of love. *The opinions which the Antients had of Vulcan were various, in which respect he is shaped sometimes in one form, sometimes in another.*

II. Some make him lame of one leg, of a very black and swarthy complexion, as it were all smoaky; of a general ill shaped proportion in all his Lineaments; and because that he is the husband of *Venus*, often de-picture her with him.

III. *Alexander Neapolitanus* relateth, that in one place of *Egypt* was erected the statue of *Vulcan*, which held in one of its hands; the true and lively proportion of a mole; and in his other hand a Thunderbolt.

The mole was so placed, because they thought he sent unspeakable numbers of moles among them, as a plague to them, which did eat, gnaw and destroy every thing which was good.

IV. He is also painted lame in a scarlet robe.

C H A P. XXII.

How the Antients depicted Bacchus.

I. **P***Hiloftratus* saith, that his statue was framed in the likeness of a young man without a beard, of a corpulent and gross body, his face of an high colour and big; about his head a garland of Ivy leaves; upon his temples two small horns; and close by his side a certain beast, called a *Leopard* or *Panther*.

This description is drawn from the nature of wine, (of which as the Poets feign, Bacchus is the God) whose inventor and finder out was certainly Noah, which not only Moses, but also Josephus and Lactantius specially affirm; wherefore some suppose him to be this God Bacchus.

II. *Clandianus* saith, that his Image or Statue is made all naked; thereby shewing the nakedness of those which abuse themselves with wine, by which they reveal and open those things which ought to be concealed and kept hid.

III. *Diodorus Siculus* saith, that *Bacchus* among the *Grecians* was depicted in two several forms, the one of a very aged man, with a long beard, stiff and thick, the other of youthful years, of a pleasant and amorous aspect.

By the first is shewed the effects of the intemperate use of wine which overcomes nature, and brings with it old age: by the other, how it cherishes & revives the heart, used moderately.

IV. *Macrobius* saith, that *Bacchus* was framed sometimes in the likeness of a young child, sometimes of a youth, sometimes of a man; and sometimes in the likeness of decrepit old age.

By these was signified the four seasons of the year, the vine being dedicated to Sol, in whom they all exist.

V. This Picture was made in the likeness of a Bull (among the *Cyrenians*, a people inhabiting the farther part of *Persia*.)

The reason hereof was because Proserpina (the daughter of Iove) brought him forth in that form.

VI. *Philostratus* saith, that *Bacchus* was oftentimes drawn clothed in womens garments, and in a long purple robe; wearing upon his head a coronet of Roses, with companions and followers, all of them in like loose and wanton garments, fashioning themselves some like rural *Nymphs*, as the *Dryades*, *Orcades*, &c. some like Sea *Nymphs*, as the *Nereides*, *Syrens*, &c. some like *Satyres*, *Fauns* and *Sylvans*, &c.

The womens garments shew that wine makes a man faint, feeble, and unconstant like to a woman.

VII. *Pausanias* saith, that among the *Eleans*, the picture of *Bacchus* was made with a long beard, and clothed with a long gown hanging to the feet; in one hand a sharp hook, and in the other a bowl of wine, and round about him many *Vine-trees* and other fruitful plants.

VIII. The Statue of *Bacchus* also was sometimes set forth and adorned with Coronets made of fig-tree leaves, in memory of a *Nymph* (as some say) called *Psyche*, which was by the Gods metamorphosed into that plant.

In like manner, the Nymph Staphilis (on whom Bacchus was in like manner enamoured) was transformed into the Vine, from whence it is that those plants are so exceeding grateful and pleasant unto this God.

IX. He is painted also with short brown curled hair, with a *Leopards skin*, or in a green mantle, a tawny face, with a wreath of *Vine branches*.

C H A P. XXIII.

How the Antients depicted Fortune.

I. **F**ortune was depicted by some with two faces, one white and well-favoured; the other black and ugly.

And this was because it was held, that there were two Fortunes, the one good, from whom came riches, happiness, quiet, content and pleasure: the other bad, from whom came wars, afflictions, crosses, disasters, calamities, and all other miseries whatsoever.

II. The *Thebeans* made her in the shape of a woman; in one of her hands a young child, to wit, *Pluto* or *Riches*.

So that in the hands of Fortune, they put the disposing of Wealth, Honour, Glory, and all Happinesses.

III. *Martianus* describes her a young woman, alwayes moving; covered with a garment of the thinnest silk; her steps uncertain, never resting long in a place; carrying in her spacious lap the universal fulness of the treasures, riches, honour and glory of this world; which in hasty manner (with her hand) she offers; which offer, if not instantly received, was utterly lost, in her right hand a white wand, with which she smites such as offend her, slight her kindness, or are not nimble enough to receive them.

*Oh cruel Fortune, stepdame to all joyes,
That disinherit' st us from sweet content,
Plunging our hopes in troubled Seas annoyes;
Depriving us of that which nature lent!*

When will thy proud insulting humour cease,
 T' assuage the sorrows of an only one ?
 That free from care, its soul may live in peace,
 And not be metamorphos'd into stone.
 But why entreat I thy unstable heart,
 Knowing thy greatest pleasure, thy delight
 Consists in aggravating mortals smart
 Poyson'd with woes, by venom of thy spight ?
 'Tis what thou wilt, must stand, the rest must fall,
 All humane Kings pay tribute to thy might :
 And this must rise, when pleaseth thee to call,
 The other perish in a woeful plight.
 And this is it, that chokes true vertues breath,
 Making it dye, though she immortal be :
 Fruitless it makes it ; subject unto death,
 To fatal darkness, where no eye can see.
 Oh come you wounded Souls, conjoin with me ;
 In some adumbrate thicket let us dwell,
 Some place which yet the Heavens ne'r did see,
 There let us build some despicable Cell.
 Strength, Beauty, perish : Honours fly away :
 And with estates, Friends vanish and decay.

IV. In a Temple in Greece, Fortune was made in the
 form of a grave Matron, clothed in a garment agree-
 able to such years, whose countenance seemed very
 sad ; before her was placed the Image of a young Vir-
 gin of a beauteous and pleasant aspect, holding out
 her hand to another ; behind these, the Image of a
 young child, leaning with one of its arms upon the
 Matron.

The Matron is that Fortune, which is already past ; the
 young Virgin, that which now is : and the young child beyond
 them both, is that which is to come.

V. Quintus Curtius saith, that among the people of
 Scythia,

Scythia, *Fortune* was depicted in the form of a woman without feet, having round about her at her right hand a number of little wings.

Being without feet, shews that she never stands firm; and the many wings shews that her gifts and favours are no sooner given, but are presently lost, and do as it were fly away again, before they be fully possessed.

VI. *Alexander Neapolitannus* relateth, that in *Greece*, her Image was made wholly of *Glass*; to shew that her favours are brittle, and subject to sudden decays.

VII. *Cebes* the *Philosopher* resembled *Fortune* unto a *Comedy*, in which many *Actors* appear often as *Kings* and great *Monarchs*; and presently after become poor *fishermen*, *slaves*, *bond-men*, and the like.

VIII. *Socrates* compared her to a *Theatre*, or common meeting place, where without all order or observance men take their places and seats, without respect to the dignity of any.

Hereby is shewed, that she (without respect of birth, worth, merit or state,) blindly, unadvisedly, and without any order or reason, bestows felicities, riches and favours.

IX. In *Egira*, a *City of Achaia*, *Fortune* was drawn in the shape of a beautiful woman, who held in one of her hands a *Cornucopia*; in the other, the boy *Cupid*.

By which is signified (as Pausanias saith) that beauty without riches avails nothing: and indeed I may say he is doubly fortunate, who in his love enjoys the fruition of both beauty and riches: but he is happy in the superlative degree, who with the other two meets with vertue and love also.

X. *Giraldus* saith, that *Fortune* was with some depicted

pected riding on a horse galloping; with which swift-ness she seems to pass invisible, after whom followeth *Destiny* with great wrath and fury, holding in her hand an Iron bow, and aiming to strike Fortune at the heart.

By her swift galloping, is signified her mutability. See Sect. 4. Chap. 28. where she is taken as one of the powers.

C H A P. XXIV.

How Vertue, Truth, Peace, Honour, Fame and Opinion were depicted.

I. **V**ertue in Greece was made in the form of a Pilgrim, like a grave and austere woman; sitting alone upon a four squared stone, melancholy and leaning her head upon her knees.

Being a Pilgrim, shews she hath no resting place, secure abode, or certain habitation upon the earth: the form of her sitting, shews her life to be full of troubles, dangers, crosses, and miseries. See the 1. Section of Chap. 30. of this Book.

Hæc angusta via horrendis scatet undique monstris,
Et vita innumeris est interclusa periculis.

Sed tamen incolumes hac virtus ducit alumnos,
Extrema ut vitent, ne pes hinc inde vacillet.

Proclamat longe spes, hic sunt digna laboris
Præmia, & excipient mordaces gaudia curas.

Pax, sincera quies nullo temeranda dolore,
Lætitia hic habitant longum, sine fine, per ævum.

*Fierce Monsters do this narrow passage bound,
And deadly dangers it encompass round.*

*Yet vertue doth her Followers safely guide,
Lest they should go astray on either side.*

And

*And Hope proclaims afar ; lo here you shall
Have Joy for Sorrow ; honey for your gall,
Here Peace and joyful rest for ever dwell,
Which neither cross nor time shall ever quell.*

II. *Truth*, saith *Hippocrates*, was framed in the similitude and likeness of a beautiful woman, attired with gravity and modesty: *Philostratus* saith that she remaineth in the cave of *Amphiaraus*, cloathed all in white garments of a beautiful hue: *Lucianus* saith that her statue was made in the form of a young woman, habited in rags, and base attire, with a superscription over her head, how she was wronged and abused by *Fortune*.

III. *Peace*, saith *Aristophanes*, was framed in the shape of a young woman, holding between her arms the Infant *Pluto*, the God of Riches, and Ruler of the lower Regions.

She is also called *Concordia*, and is a special friend to the Goddess *Ceres*, from whom comes the encrease of Fruits, Corn, and other nutriments. See Chap. 28.

IV. *Honour* is depicted with two wings on its shoulders ; which as *Alciatus* saith, was made in the form of a little child, cloathed in a purple garment, having a Coronet or wreath of Laurel about his head ; holding hand in hand the God *Cupid*, who leads the child to the Goddess *Vertue*, which is depainted right over against it.

V. *Fame* is painted like a Lady, with great wings, and seeming to proffer a flight, and to mount from the *Earth*, and rove abroad: having her face full of eyes ; and all over her garments an infinite number of ears and tongues. See the tenth Section of the twenty ninth Chapter of this Book.

VI. *Opinion*, saith *Hippocrates*, resembles a young woman, not altogether so fair and lovely as *Truth*, yet not deformed, or ill proportioned; being rather impudent than modestly bold in her demeanour, with her hand stretched forth to take whatsoever is offered and presented to her.

C H A P. XXV.

How Night, Sleep, Silence, Pleasure and fear were depicted.

I. **N**ight (the mother of *Sleep* and *Death*) was depicted by the Antients in form of an old woman, having two great wings growing on her shoulders, all coal black, and spread abroad, as if she seemed to offer a flight; and that she is drawn in a Chariot, whose wheels are made of Ebony: having a sad countenance, & an upper garment of a deep black, spotted all over with silver spots like stars, as *Boccace* saith.

She is also depicted like an old woman in a black mantle spotted with stars of Gold.

II. *Sleep* (the brother of *Death*) saith *Hesiod*, was painted of a most sower, lowring, and sad aspect; aged, and holding in her left hand a young child very beautiful, and in her right, another child, of a most swarthy, black and dull complexion, with legs and arms very crooked. *Philostratus* in a Tablet (which he made for *Amphiarus*) makes her like an aged woman, slothful and sluggish, cloathed with several garments, the under black, the upper white, holding in one of her hands, a horn pouring forth seed.

By the garment is signified night and day; by the seeds rest, ease and quiet.

III. *Harpocrates* (the God of Silence) called in Greek, *Sigaleon*, was made, as *Martianus* and *Apuleius* say, in likeness of a young child, who close to his lips held one of his fingers as a sign of secrecy. Some portraict him without any face at all; all covered with the skin of a wolf, painted full of eyes and ears :

Shewing it to be good to see and hear much, but to speak little.

IV. *Voluptia* or Pleasure, was depainted a Lady, having a pale and lean countenance, sitting in a pontifical and majestick chair, embroidered and embossed with stars of gold, treading and trampling upon *Vertue*.

V. *Fear*, saith *Pausanias*, was shaped in several forms by the Antients; sometimes with the head of a Lion among the Grecians (as on the shield of *Agamemnon*;) and sometimes with the deformed face and body of a woman.

The *Corinthians* dedicated this Picture so made unto the sons of *Medea*; which were slain for bringing such fatal gifts to the daughter of old *Creon*, whereby she, and all that regal family perished, and were for ever extinct.

C H A P. XXVI.

How the Antients depicted several Wisemen and Philosophers, Lawgivers, Emperours, Kings and Queens.

I. **S** *Idonius Apollinarius* in the ninth Epistle of his ninth Book, saith, that the Philosopher *Zenippus* was painted with a crooked neck: *Aratus* with a neck bowed downwards: *Zeno* with a wrinkled forehead.

II. *Epicurus* was painted with a smooth skin: *Digenes* with a hairy rough beard: *Socrates* with whitish bright hair.

III. *Aristotle* was painted with a stretched out arm: *Zenocrates* with a leg somewhat gathered up: *Heraclitus*, with his eyes shut for crying.

IV. *Democritus* with his lips open, as laughing: *Chrysippus* with his fingers close pressed together, for numbering: *Euclid* with his fingers put asunder, for the space of measures.

V. In some ancient Bibles and many Pictures, *Moses* is described with horns.

“ The ground of this absurdity was a mistake of the
 “ Hebrew Text, in that of *Moses* descending from the
 “ Mount, upon the nearness of the words, קרן *Ke-*
 “ *ren*, *Cornu*, an horn; and קרן *Karan*, *Luceo*, to shine.
 “ The vulgar translation (of *Exodus* 34. 29. 35.) a-
 “ grees with the former, to wit; *Ignorabat quod cor-*
 “ *nuta esset facies ejus. Qui videbant faciem. Mosis esse*
 “ *cornutam.* The translation of *Paulus Fagius* is other-
 “ wise, viz. *Moses nesciebat quod multus esset splendor*
 “ *glorie vultus ejus. Et viderunt filii Israel quod multa*

“*esset claritas gloriæ faciei Mosis. Tremelius and Junius have it thus, ut ignoraret Mosche splendidam esse factam cutem faciei suæ. Quod splendida facta esset cutis faciei Moschis*: agreeing with the Septuagint, “*δεδοξασται ἡ ὄψις τοῦ χρώματος τοῦ προσώπου, glorificatus est aspectus cutis seu coloris faciei.*

VI. But *Moses* is generally depicted with bright hair, a very beautiful Visage, with radiant scintillations about his head, in form of hoariness, which in Painting is called *Glory*.

VII. *Alexander* the great, with brown hair, and a ruddy complexion, riding upon his horse; but by some riding upon an *Elephant*.

The reason of this is hard to be discerned; for as much as I find not in history, that ever he used that beast in his Armies, much less in his own person: except it were for that remarkable battel which he fought with Porus King of India, wherein were many Elephants: In which himself (as Curtius, Arianus and Plutarch relate) was on horseback, the name of which beast yet lives, and is famous in history to this day.

VIII. *Numa Pompilius* with white hair Crowned with a Silver bend or Diadem; his robe crimson trimmed with Gold; his mantle yellow trimmed with Silver; his buskins watchet and silver.

IX. *Æneas* the Trojan Prince in a purple mantle trimmed with Gold.

X. *David* (the King of *Israel*) with brown hair, a ruddy complexion, and a long beard.

XI. *Elizabeth* Queen of *England*, pale-faced, light brown hair, and gray-eyed.

XII. *Dido* Queen of *Carthage* in a purple or scarlet mantle, her under-garments purple; a Golden Quiver; hair yellow, tyed up with spangles and knots of Gold.

XIII. *Gustavus Adolphus* King of Sweden with yellow hair.

XIV. *Mahomet* the *Turks* great Prophet in garments all of green.

XV. *German Emperours* in a Violet-coloured robe, watchet, or light-coloured.

XVI. *Roman Emperours*, with yellow Carrusters embroidered with Silver; the labels of their sleeves, and short bases of watchet; the under sleeves, and long stockings white; a Laurel wreath, with a Silver jewel before; and rays of Gold, issuing from the wreath.

XVII. *Pythagoras* in white garments with a Crown of Gold.

XVIII. *Empedocles*, in Violet, murry, or purple, and so generally the rest of the *Grecian Philosophers*.

XIX. *Erasmus Roterdamus*, yellow haired, gray-eyed, and somewhat pale.

XXI. The *Virgin Mary* is commonly represented in Purple and Azure: *John the Evangelist* in Scarlet: *John Baptist* in a Hairy mantle: The rest of the *Apostles*, in Green or Crimson.

C H A P. XXVII.

The Painting of the Sibyls.

I. *Sibylla Agrippina*, a woman in years, in a roseal garment.

II. *Sibylla Libyca* an elderly woman, crowned with a garland of flowers, in purple garments.

III. *Sibylla Delphica*, with a black garment, a young woman with a horn in her hand.

IV. *Sibylla Phrygia* in red garments, having an old Saturnian hard favoured face.

V. *Sibylla Herophila*, a young woman very fair in a purple garment, and head covered with a veil of Lawn.

VI. *Sibylla Europea*, a comely young woman, having a high, red-coloured face, a fine veil on her head, and clad in a garment of Gold work.

VII *Sibylla Persica*, with a white veil, and a golden garment.

VIII. *Sibylla Samia*, a middle aged woman, clothed in Willow weeds, having a palm in her hand.

IX. *Sibylla Hellepontica*, a young woman in green garments, with a round, lovely fresh coloured face; holding in her left hand a Book; and in her right hand a Pen.

X. *Sibylla Tiburtina*, an old woman in purple garments, of a hard visage, holding in her Apron the books of the Sibylls.

These Sibylls for their Prophecies of Christ are in high esteem: they are ten in number, as Varro saith; yet others make twelve, of which we are not satisfied; Boylardus in his Treatise of divination, besides these ten addeth two others, Epirotica and Ægyptia. Some, as Martianus, will have but two; Pliny and Solinus, but three; Ælian four; and Salmasius but the first seven. They are generally described as young women, yet some were old, as she that sold the books unto Tarquin, from whence we conclude the Licentia pictoria is very large.

C H A P. XXVIII.

The Painting of Arts, Vertues, Passions and minor Gods.

I. **A** *Rithmetick* is painted in cloth of Gold: *Geometry* fallow faced, a green mantle fringed with Silver, and a Silver wand in her right hand: *Astronomy* with a Silver Cressant on her fore-head, an azure mantle, a watchet Scarf, with gold Stars.

II. *Faith* is painted in white garments, with a cup of Gold: *Hope* in blew, with a Silver Anchor: *Charity* in yellow robes; on her head a tyre of Gold with precious stones; her chair Ivory.

III. *Religion* in a Silver vail, with a garment, or mantle of white: *Justice* in a white robe, and a white mantle; with a Coronet of Silver and white buskins: *Innocency* in white.

IV. *Concord* in a sky-coloured robe, and a yellow mantle; *Peace* in white, scattered with stars, or a carnation mantle fringed with Gold, a vail of Silver, green buskins, and a palm in her hand in black: *Unanimity* in a blew robe, mantle and buskins; with a chaplet of blew Lillies.

V. *Wisdom* in a white robe, blew mantle, feeded with stars: *Law* in purple robes, feeded with Golden stars; a mantle of Carnation fringed with Gold; purple and yellow buskins: *Government* in Armour.

VI. *Watchfulness* in a yellow robe: a sable mantle fringed with Silver, and feeded with waking eyes; a chaplet of turnsole, in her right hand a Lamp; in her left, a Bell: *Confidence* in a parti-coloured garment: *Modesty* in blew.

VII. *Eternity* in blew, seeded with Golden stars; the *Soul* in white garments, branched with Gold and Pearl; and crowned with a Garland of Roses: *Felicity*, in purple trimmed with Silver.

VIII. *Love* in Crimson fringed with Gold, a flame-coloured mantle, a Chaplet of red and white Roses: *Natural affection*, in Citron colour: *Envy*, in a discoloured garment full of eyes.

IX. *Joy*, in a green robe, and a mantle of divers colours, embroidered with flowers; a garland of Myrtle; in her right hand a Crystal Cruise, in her left a Golden Cup: *Pleasure* in light garments, trimmed with Silver and Gold: *Laughter* in several colours.

X. *Wit*, in a discoloured mantle: *Follity*, in flame colour: *Pastime* in purple trimmed with Gold.

XI. *Opinion* in black Velvet, black cap, with a white fall: *Impudence*, in a party-coloured garment: *Audacity*, in blewish colour.

XII. *Honour*, in a purple robe, wrought with Gold: *Liberty*, in white: *Safety*, in Carnation.

XIII. *Cupid* was painted (by *Zeuxis*) in a green robe: *Hymen*, in long yellow hair, in a purple or Saffron coloured mantle: *Triton* (*Neptunes* Trumpeter) with a blew skin, in a purple mantle.

XIV. *Urania*, in a mantle of azure, filled with lamps: *Astrea* the Goddess of Justice, in a Crimson mantle, trimmed with Silver: the *Graces* all alike, as Sisters, in Silver robes.

XV. *Tellus*, the Goddess of the Earth in a green mantle: *Ceres*, with yellow hair, and a straw-coloured mantle trimmed with Silver: *Vesta*, daughter of *Saturn*, in white garments filled with flames.

XVI. *Flora*

XVI. *Flora* in a mantle, of divers colours: *Proserpine* in a black mantle, trimmed with Gold flames: *Echo*, (the Goddess of the Air, and daughter of speech, the intirely beloved of *Pan*) is an invisibile Goddess.

XVII. *Ansonus Gallus* reporteth that she hath oftentimes dissuaded, and reprehended such, who would undertake to depaint her, and repeats the same in an Epigram, whose sence in English is this :

*Surcease thou meddling Artist thy endeavour,
 Who for thy skill hast reap't such long liv'd fame :
 Strive not to paint my body, shape, for never
 Did any humane Eyes behold the same.
 In concave caverns of the Earth I dwell,
 Daughter o'th' Air, and of each tatling voice,
 In Woods and hollow dales I build my Cell,
 Joying to re-report the least heard noise,
 To grief opprest, and men disconsolate,
 That tell each grove their souls vexation,
 Their dying agonies I aggravate,
 By their dole accents iteration.
 And he that will describe my form aright,
 Must shape a formless found or airy sprite.*

C H A P. XXIX.

To express the Powers.

I. **E**ternity, It is expressed in the form of a fair Lady, having three heads, signifying Time past, present, and to come ; in her left hand a Circle, pointing with the fore finger of her right hand up to Heaven : the Circle signifies she hath neither beginning nor end.

In the Medals of Trajan, she was figured red, sitting upon a Sphear, with the Sun in one Hand, and the Moon in the other : (by her sitting is signified perpetual constancy.)

In the Medals of Faustina, she is drawn with a Vail, and in her right-Hand the Globe of the World.

Boccace, writing of the Progeny of the Gods, saith that the Antients derived it from Demogorgon, as the principal and first of them all, who inhabited in the middle or Center of the Earth, encircled round about, and circumvested with a dark and obfuscate cloud, breathing from his mouth, a certain liquid humidity.

But however what Eternity is, the name doth clearly discover, containing in it self all Worlds and Ages, and not limited, or measured by any space of time.

Claudius describes it by a Serpent that encompasseth round with her body, the Cave or Den wherein it lyeth, so as making a Circle, she holds in her mouth the end of her tail, which with the Ægyptians was the emblem of a year.

*All in a Circle thus she sits involv'd,
Whose firm tenacity is ne'r dissolv'd:
She sends forth times, and them recals again,
Ages to come, and past she doth retain.*

But according to Boccace, as Eternity hath an absolute command over all times, so she lives far hence in some remote and unknown vale, where humane steps never approached, but is even unfound out of the cœlestial inhabitants, those happy Souls, who stand before the presence of the greatest, that only knows all things.

*II. Time, It is drawn standing upon an old ruine, winged, and with Iron teeth. Or thus, An old man in a garment of stars; upon his head a Garland of Roses,
Ears*

Ears of Corn, and dry Sticks, standing upon the Zodiack, with a looking-Glass in his Hand; two Children at his Feet, the one fat, the other lean, writing both in one Book; upon the Head of one the Sun, upon the other the Moon. *Or thus,* An old Man, bald behind, winged, with a Scythe and an Hour-Glass, having a lock of Hair on his Forehead.

III. *Fate,* A Man in a fair, long, flaxen Robe, looking upwards to two bright Stars encompassed with thick Clouds, from whence hangs a golden Chain.

IV. *Fortune,* A naked Lady having an Ensign or Sail overshadowing her, standing upon a Globe or Ball.

Lactantius saith that Fortune is a vain, idle and senseless name, shewing forth Mans weakness in attributing any thing thereto: which Marcus Tullius confirmeth, where he saith, That this name of Fortune, was first brought in to cover the ignorance of Man. Alexander Neopolitanus saith that in Præneste in a Temple she was depicted in the shape and form of two Sisters, both conjoynd in one and the same Statue. Pausanias saith, That her most ancient Statue was that which Bupalus made in Greece in shape of a Woman, upon whose Head was a round Ball, and in one of her Hands a Cornucopia, She is called the blind Goddess, and partial Lady, by reason of the bestowing of her unconstant and mutable Favours.

Imperious Ruler of the Worlds designs,
 Lady of Solace, Pleasure and of Pains:
 Like Tennis-Balls thou beat'st us to and fro,
 From Favours to disgrace, from joy to woe;
 From Wars to Peace, from Rule to be commanded:
 But with unconstancy thou now art branded.

Macrobius saith she was set forth with Wings on her Shoulders, (to shew that she was alwayes at Hand among Men) had by her side the Rudder of a Ship (to shew that she doth rule and command) her self placed upon a Wheel, holding in her right-Hand a golden Ball, and in the other a Whip; shewing where she smiled, Wealth and Honour, and where she frowned, Crosses and Misery should follow.

In Ægypt Fortune was depicted like a Lady turning a great Glass Wheel, on whose top were many Men playing, others climbing up; and others having attained it, precipitating themselves and falling down back again.

V. Equality, A Lady lighting two Torches at once.

VI. Victory, Is expressed by a Lady clad all in Gold, in one Hand a Helmet, in the other a Pomegranate: By the Helmet is meant Force, by the Pomegranate unity of Wit and Counsel.

Augustus drew her with Wings ready to fly, standing upon a Globe, with a Garland of Bayes in one hand, in the other a Coronet of the Emperor, with these Words Imperator Cæsar. In the Medals of Octavius, she is drawn with Wings, standing on a Base, in one Hand a Palm, in the other a Crown of Gold.

VII. Peace, Is drawn like a Lady, holding in her right-Hand a Wand or Rod downwards towards the Earth, over a hideous Serpent of sundry colours; and with her other Hand covering her Face with a Veil, as loth to behold Strife or War.

Trajan gave a Lady in her right-Hand an Olive Branch, in her left a Cornucopia. In the Medals of Titus, a Lady having in one Hand an Olive Branch, the other leading a Lamb and a Wolf coupled by the Necks in one Yoke. The Olive was alwayes the Emblem of Peace.

VIII. Providence, A Lady lifting up both her Hands to Heaven with these Words, *Providentia Deorum*. Or

thus,

thus, A Lady in a Robe, in her right-Hand a Scepter, in her left a *Cornucopia*, with a Globe at her Feet.

IX. *Concord*, A Lady sitting, in her right-Hand a charger for Sacrifice, in her left a *Cornucopia*, with the Word *Concordia*. Or thus, A fair Virgin, holding in one Hand a Pomegranate; in the other a Mirtle Bunch.

The nature of these Trees are such, that if planted though a good space one from another, they will meet, and with twining embrace one another.

X. *Fame*, A Lady clad in a thin and light Garment, open to the middle Thigh, that she might run the faster; two exceeding large Wings; Garments embroidered with Eyes and Ears, and blowing of a Trumpet.

XI. *Destiny*, A Lady, who with great fury, and exceeding celerity holds in her Hand an Iron Bow ready bent, aiming to strike Fortune even at the very Heart.

Destiny and Fortune can never agree; and therefore as Fortune flies from destiny, so Destiny pursues Fortune; for where Destiny sets Foot, there Fortune is as it were enchanted and conjured, as having no power, efficacy or vertue.

C H A P. XXX.

Of Vertues and Vices.

I. **V**ertue is represented by *Hercules*, naked, with his Lyons Skin, and knotted club, performing some one of his Labours; as offering to strike a Dragon keeping an Apple-tree: or holding in his Hand three golden Apples.

Hercules

Hercules is nothing else but Vertue, his name in the Greek tongue is Ἡρακλῆς, quasi ἥρας κλεῖς, Junonis gloria: vel quia κλησεί τις ἥρας celebrat aut commemorat Heroas, which is the property of Vertue: he is drawn naked to demonstrate her simplicity: by the dragon is set forth all manner of vices: by the Lions skin, magnanimity and greatness: by his Oaken Club, Reason and Policy: by its knottiness, the difficulty, pains and labour in seeking after vertue: by the three golden Apples, the three Heroical Vertues, Moderation, Content and Labour.

II. Piety is drawn like a Lady, with a sober countenance; in her right hand she holdeth a sword stretched over an Altar; in her left hand a Stork; and by her side is placed an Elephant and a Child.

The Stork is so called of σβρυν, the reciprocal or mutual love of Parent and Child, of which this bird was ever an Emblem, for the love and care she hath of her parents being old. The Elephant worships towards the rising of the Sun.

III. Hope is drawn like a beautiful child in a long robe hanging loose, standing upon tiptoes and a tresfoyl or three-leaved gras in its right hand, in its left an Anchor.

The loose vestment shews, she never pincheth or binds truth, standing on tiptoes shews she always standeth dangerously; the branch of tresfoyl shews knowledge (the ground of faith) faith (the ground of hope) and hope it self.

IV. Mercy, a Lady sitting upon a Lion, holding in one hand a Spear, in the other an Arrow; which she seemeth to cast away.

In the Medals of Vitellius she sits with a branch of Bays in her hand, and a staff lying by her.

V. Justice, a fair young Virgin, drawing after her, with her left hand a black, hard, ill-favoured Woman,

man, haling her by main force, and striking her over the face in a severe manner.

The young Virgin was Justice, the other Injuria: she is drawn young and a Virgin, to shew, that Judges and administrators of Law ought to be incorrupt and free from bribes, partiality or flattery, but just, constant and sincere.

VI. *Felicity*, a Lady sitting in an imperial throne, in the one hand she holdeth a *Caduceus* or Rod, in the other hand a *Cornucopia*.

VII. *Fruitfulness*, a Lady sitting upon a bed, and two little infants hanging about her neck.

VIII. *Dissimulation*, a Lady wearing a vizard of two faces, in a long robe of changeable colour; and in her right hand a Magpye.

IX. *Security*, a Lady leaning against a pillar, before an Altar, with a Scepter in her hand.

X. *Calumnia*, a beautiful, rich and young woman, approaching towards a Judge, gorgeous in her habit, with an angry, scornful and discontented look, and red and fiery eyes; she holds in her left hand a flaming torch: and with her right she by force draws a young man by the hair of the head.

XI. *Envie*, a wonderful lean old man, with a pale and meagre face, in whose withered cheeks Age hath wrought deep furrows and wrinkles.

XII. *Penitence*, a Woman in vile, ragged and base attire, infinitely deploring her being: and bemoaning her self in passionate fits above all measure, continually weeping.

C H A P. XXXI.

Of Rivers.

I. **H**erein you ought to observe the Adjuncts and Properties of the same; which consists in some notable Accident done near them; some famous City, trees, fruits, or reeds situate upon their banks; some fish only proper to their streams; or recourse of shipping from all parts of the world.

II. Therefore you had best place the City upon their heads; their fruits in a *Cornucopia*; reeds, flowers and branches of trees in their Garlands, and the like.

III. The River *Tiber*. It is expressed (in the *Vatican* in *Rome*) in a goodly Statue of Marble lying along (for so you must draw them) holding under his right arm a she wolf, with two little infants sucking at her teats, leaning upon an Urn or Pitcher, out of which issueth its stream: in his left a *Cornucopia* of delicate fruits, with a grave Countenance and long beard; a garland of flowers upon his head; and resting his right leg upon an Oar.

IV. The River *Nilus*. It is seen (in the *Vatican*) cut out in white Marble, with a garland of sundry fruits and flowers, leaning with his left arm upon a Sphynx; from under his body issueth its stream; in his left arm a *Cornucopia* full of fruits and flowers on one side, with sixteen little children, smiling and pointing to the flood.

The Sphynx was sometimes a monster which remained by Nilus: the Crocodile ἀπὸ τοῦ κρόκου δελιῶν, from his hatred of Saffron; the most famous monster of Egypt: the sixteen children, the sixteen cubits of height, the uttermost of

of the flowing of Nilus: their smiling looks, the profit of it, which glads the hearts of the Sun-burnt inhabitants.

V. The River *Tigris*. It was drawn like an old man (as the rest) and by his side a Tiger.

This beast was given as well for its fierce streams, as for the store of Tigers which are there.

VI. The River *Ganges*. It bears the shape of a rude and barbarous savage, with bended brows, of a fierce and cruel Countenance, crowned with a palm, having, as other floods, his pitcher, and by his sides a *Rhinoceros*.

This River runneth through India, and hath its head from a fountain in Paradise.

VII. The River *Indus*. It is drawn with a grave and jovial aspect, with a garland of its countrey flowers, by its side a Camel (from *χάμου*) it is represented pleasantly, grave, as an Emblem of the *Indian* policy.

This is the greatest River in the world, receiving into its channel threescore other great and famous Rivers, and above an hundred lesser.

VIII. The River *Thamesis*. In the house of an honourable friend, I say the *Thames* thus drawn: A Captain or Soldier lying along, holding in his right hand a Sword, and under his arm the August Tower: in the other a *Cornucopia* of all fragrancies, with a Golden chain which held four Crowns; and with this he encompassed the streams, from under which bending of his left arm they seemed to flow: his temples were adorned with Bays, the River was empaled on one side with Anchors, and on the other stood *Cesar's Augusta*.

IX. The River *Arnus*. It is a famous River in *Italy*, drawn like an old man leaning upon his pitcher, pouring out water: upon his head a garland of Beech, by his

his right side a Lyon, holding forth in his dexter paw a red Lilly or Flower-de-luce, the antient Arms of the chief City of *Tuscany*.

By the garland of Beech is set forth the great abundance of Beech trees growing about Fafterona in the Appennines where Arnus hath his head.

X The River *Po* or *Padus*. It is depicted with an Ox's face, having a garland of Reeds or Poplar on his head.

It is so called from the Sister of Phaeton, whom the Poets feign destroyed with lightning, and drowned here: the head of the Ox, is from its horrid noise and roaring, whose crooked banks resemble the horns thereof; by the sides whereof grows much Reed and many Poplars.

XI. The River *Danubius*. In the antient Medal of the Emperour *Trajan*, it is depicted with its heads covered with a veil.

It is so drawn, because its head or first spring is unknown. Aufonius saith,

Danubius perit caput occultatus in ore.

XII. The River *Achelous*. *Ovid* describes it with a garland of Reeds, Willow, and the like: having two Urns or Earthen Pitchers, the one empty, the other casting out water; and upon its head two horns, the one whole, the other broken.

This River as it is the most famous of all Greece, so it divides Ætolia from Arcadia, and then falls into the Sea. This is fetch'd from the fable of Hercules who combated him in the likeness of a Bull, and broke one of his horns for Deianira's sake, there turning both its streams into one, whereupon one of the Urns is empty.

XIII. The River *Niger*. It is drawn like a Black-Moor, with Glory, or a Coronet of Sun-beams falling

falling upon his Urn, having by its side a Lyon.

By the Sun-beams and black, is shewed the clime, lying under the torrid Zone, whose inhabitants are Blacks or Moors; the Lyon is that which the Countreys Mauritania and Barbary breed, being the fiercest in the World.

C H A P. XXXII.

Of Nymphs.

I. **N**ΥΜΦΗ *Nympha*, a bride (from νερν & παρ νερναι, as it were a fresh or new creature: or as some will have it, from *Nympha* quasi *Lympha*, by changing L. into N. after the Dorick dialect:) it is nothing else but an Allegory, from the Vegetative humidity, which gives life to trees, herbs, plants, and flowers, by which they grow and increase.

II. They are feigned to be the daughters of the Ocean, the mother of floods, the nurses of *Bacchus*, and goddesses of fields, who have the protection and charge of mountains, herbs, woods, meadows, rivers, trees, and generally of the whole life of man.

III. *First, Napææ, Nymphs of the Mountains.*

Let them be drawn of a sweet and gracious aspect, in green mantles girded about in the middle; and upon their heads garlands of honeysuckles, wild-roses, tyme and the like; their actions, dancing in a ring, making garlands, or gathering flowers.

They are so called from Ναπος the top of an hill, or woody valley.

IV. *Secondly, Dryades, Nymphs of the woods.*

Draw these less fair than the former, of a brown or tawny complexion, hair thick like moss, and their attire of a dark green.

They are so called from $\Delta\epsilon\upsilon\varsigma$ an Oak, having their beginning with trees and dying again with them.

V. *Thirdly, Naiades, Nymphs of the floods.*

Draw them beautiful, with arms and legs naked, their hair clear as Crystal; upon their heads garlands of water-creffes, with red leaves: their actions, pouring out water.

They are so called from $\text{N}\acute{\epsilon}\omega$ to flow, or bubble, as water doth.

VI. *Thetis*, a Lady of a brown complexion, her hair scattered about her shoulders, crowned with a Coronet of Periwinkle and Escallop shells, in a mantle of Sea-green, with chains and bracelets of Amber about her Neck and Arms, and a branch of red Coral in her hand.

VII. *Galatea*, a most beautiful young Virgin, her hair carelessly falling about her shoulders like silver threads, and at each ear a fair pearl; with a double string of them (sometimes) about her Neck and left Arm; a mantle of pure thin and fine white, waving as it were by the gentle breathing of the air, viewing in her hand a sponge made of Sea-froth, *she is so called from γάλα, lac, milk.*

VIII. *Iris*, a Nymph with large wings, extended like to a semicircle, the plumes set in rows of divers colours, as yellow, green, red, blew or purple; her hair hanging before her eyes, her breasts like clouds, drops of water falling from her body, and in her hand *Iris*, or the Flower-de-luce.

Virgil makes her the messenger of *Juno* (where she is taken for the air) when he saith, *Irin de Caelo misit Saturnia Juno.*

IX. *Nymphæ Diana*; Let them be cloathed in white linnen to denote their Virginity, and their garments girt about them; their Arms and shoulders naked;

XIV. *Spanish wooll, wherewith women paint their faces red.*

Boil shearings of Scarlet in water of quick-lime half an hour, of which take two pound, to which put Brazil two ounces (rasped) Roch Alom, Verdegrise, of each one ounce, Gum-Arabick two drachms, boil all for half an hour, which keep for use.

XV. *To do the same another way.*

Take Spirit of wine one pound, Cochenele half an ounce, rasped Brazil one ounce, Gum-Amoniack three drachms, mix and digest till the Gum is dissolved; then boil it gently, and strain it for use, into which you may put old linnen rags, or Spanish wooll at pleasure.

C H A P. II.

Of Cosmeticks which beautifie without any thing of Paint.

I. **A** *N* excellent Cosmetick or Liquor of Talk.
 Take powder of Talk (made by rubbing it with pumice stones; or beating it in a very hot mortar; or filing it with a Goldsmiths smoothing file) eight ounces, *Salis Tartari* sixteen ounces, calcine it twelve hours in a wind furnace, and set it in a Cellar, separating that which melts, from that which doth not: then calcine this dry Calx added to four times its weight of Sal-nitre, with a strong fire, so the Talk will be melted into a clear white mass, which being set in a Cellar will turn to a clammy liquor.

This wonderfully whitens and beautifies the skin, and takes away spots and freckles from the face: but you must not leave the liquor long on, but wash it off with decoction of wheat bran, that it corrode not the skin.

II. *To make the skin soft and smooth.*

The Face being very clean, by the second Section of the first Chapter, wash it very well with a *Lixivium* of Salt of Tartar, and after that anoint it with *Pomatum*; or which is better, Oil of sweet Almonds; doing this every night going to Bed. The *Pomatum* we have taught the way to make in our *Pharmacopœia*, lib. 5. cap. 4. Sect. 22. & 25.

III. *A Water to cleanse the Face from Scurf and Morpew.*

Take distilled rain water six Ounces, juice of Limons twelve ounces, mix them, and wash with it morning and evening, anointing after it at night going to bed with the oil or *Pomatum* aforesaid.

IV. *An Unguent which brings the skin to an exquisite beauty.*

Take of our *Pomatum* one ounce, Salt of Tartar one drachm, Musk twenty grains, mix them well, and (the face or skin being very clean) anoint morning and evening.

V. *A wonderful Cosmetick of great worth.*

Take white Tartar twenty ounces, Talk, Salt, of each ten ounces, calcine them in a potters Furnace very well; then grinding the matter upon a marble, put it into *Hippocrates* his sleeve, and set it in a Cellar or other moist place for twenty or thirty days, and there will drop from it a precious oil; which being rubbed upon the skin softly with a linnen cloth (the skin being duly cleansed first) takes away all kind of spots, and makes the skin soft and delicate.

VI. *A cheap, yet excellent Cosmetick.*

Take Alom in fine powder, and shake it with whites of new laid eggs, being a little heated, till such time as they grow thick to an ointment, with which anoint the face morning and evening three or four days; and

it will take away spots and wrinkles, and make the skin grow clear and fair.

VII. *An excellent Mercurial Cosmetick prevalent against most deformities of the skin.*

Take Mercury purified from all blackness half a pound, Mercury *Sublimate* in powder as much, mix them in a stone or marble Mortar; put them into an Alembick of a strait Orifice, put on distilled Vinegar, till all be covered three or four fingers, letting it stand four days, daily stirring the same at certain times, then it extracts a whitish powder; the whitish Vinegar by inclination separate, rejecting it, and put on other Vinegar: the powder at bottom keep so for some days: which labour you must so often reiterate, till you have abundance of that white powder, which dry, and keep for use: anoint with it, by mixing with it a little distilled rain water, and it will take away all blemishes of the skin, as also Tettors. Use it not too often, and beware you touch neither eyes nor teeth with it.

VIII. *Another of great estimation.*

Take Mercury *Sublimate*, *Saccharum Saturni*, of each two drachms, Rose water, juice of Limons, of each two ounces, mix them like to an ointment, with which anoint gently at night, and the next morning with the *Pomatum* aforesaid.

IX. *To make a kind of Lac Virginis, an excellent Cosmetick.*

Take distilled rain water a quart; *Saccharum Saturni* crystallized one ounce, mix them, and then wash with the water, being settled: the fine white powder at bottom, is also an excellent fucus or paint, which may be laid upon the skin if very clear: note, some use Vinegar instead of the rain water:

X. *To make Oleum Tartari per deliquium.*

Take Salt of Tartar, which put into a bag with a corner in a moist Cellar, and the oil will distil therefrom in drops: with this oil you may mix a little fair water, and wash your face at night going to bed; and the next morning, the face being very clean, you may wash with the aforesaid *Lac Virginis*; thus continuing for some days, you may create an exquisite and lasting Beauty.

XI. *A compound Cosmetick esteemed by some of great force.*

Take of the aforesaid *Lac Virginis* one ounce, oil of Tartar aforesaid half an ounce, mix them, with which wash morning and night for about a week or more, as you shall see occasion; then anoint with the following ointment.

XII. *To make the Cosmetick Ointment aforesaid.*

Take musk three drachms, ambergriese two drachms, civet one drachm, grind them upon a porphyre or marble stone, with oil of Ben and Rhodium of each three ounces, with which anoint as aforesaid: note, some instead of the oil of Ben, use oil of sweet Almonds.

XIII. *A vetegable Cosmetick.*

Besmear your face or skin at night going to bed, with the juice of Wake Robin; it is excellent.

XIV. *An incomparable Cosmetick of Pearl.*

Dissolve Pearls in juice of Limons or distilled Vinegar, which digest in Horse-dung, till they send forth a clear oil, which will swim on the top: this is one of the most excellent Cosmeticks or Beautifiers in the world: *this oil if well prepared is richly worth seven pound an ounce.*

XV. *A Cosmetick Ointment of great worth.*

Take

Take of our *Pomatum* aforesaid six ounces, *Saccharum Saturni* two ounces, mix them, and anoint morning and evening.

XVI. *Another very good for the skin.*

Mix *Saccharum Saturni* one drachm; in Vinegar half an ounce, which mingle with the glair of eggs, and anoint with it.

XVII. *A Cosmetick wonderful to make a pleasing ruddy Complexion.*

Take oil of Tartar four ounces, Alom, Sal Gem, of each one ounce, Borax, Camphire of each half an ounce, beat them well together, to which add of Bryony water a pint, distil them in *Balneo*, and you will have your desire.

XVIII. *Another for the same.*

Take Madder, Myrrh, Saffron, Frankincense, of each alike, bruise and steep all in White-wine, with which anoint the face going to bed, and in the morning wash it off, and the skin will have a gallant pleasing blush.

XIX. *To make the Cosmetick of Myrrh, very excellent.*

Boil Eggs till they are hard, slit them and take out the yolks, fill them up with powdred myrrh, close them together, and lay them in a moist Cellar, and the myrrh will dissolve into oil.

XX. *To make a very good Wash to whiten the skin, and give a good complexion.*

Take Limons, hens eggs boiled, of each twelve, Turpentine eight ounces, distill all in *Balneo Maria*, with which wash: when you wash, you may drop into it a drop, two or three of oil of Oranges or Cinnamon, for fragrancy sake.

XXI. *A Cosmetick to make a rough skin smooth.*

Take sweet Almonds blanched four pound, moisten them with spirit of wine and rose water mixt together,

ther, of each two ounces, beat them together and fry them; and when they begin to smoak, put them into a bag, and press them (in a press made for that purpose) and there will come forth a very clear oil; which put into rain water, and beat it till it is exceeding white.

CHAP. III.

Of Cosmeticks, which remedy the various Vices of the skin.

I. **T**O take away Sun-burnings.

To glair of ten eggs put Sugar-candy one ounce, and anoint with it going to bed: or anoint with the juice of Sow-bread at night going to bed; and in the morning with oil *Omphacine*. The like effects hath our *Lac Virginis* at the ninth Section of the second Chapter, as also *Oleum Tartari*, and other things of like nature.

II. *To take away redness and Pimples.*

First prepare the skin by bathing it often with the decoction of wheat-bran, and applying pultisses of bread, milk and oil thereto: when the skin is thus suppled and rarified, you may cure them either by our liquor of Talk, at the first Section of the second Chapter, or mercurial Cosmetick at the seventh Section of the second Chapter, or our *Lac Virginis* and oil of Tartar at the ninth and tenth Section of the second Chapter, or by often washing with juice of Limons.

III. *To*

III. To take away Freckles.

Take juice of Limons, put it into a glass bottle, to which put fine Sugar, and *Borax* in powder, digest it eight days in Sand, then use it; or mix *Sal Tartari* with whites of eggs, and apply it; or often use our compound Cosmetick at the eleventh Section of the seven and thirtieth Chapter, or oil of Tartar alone, for some weeks; but if all fail, you must have recourse to our Liquor of Talk at the first Section of the second Chapter, or Mercurial Cosmetick at the seventh Section of the said second Chapter.

IV. To take away spots from the face or skin.

This is done by anointing with oyl of Tartar for ten days; and after all that to wash it with a *Lixivium* of *Quick-lime* in which *Sal-armoniack* hath been dissolved for a long time: or you may use the Cosmetick at the third Section of the second Chapter camphorated.

V. To cleanse a skurffy skin.

If the creature be fat, foment first with a *Lixivium* of Salt of Tartar; but if lean, make a fomentation of Borrage, Bugloss and Mallow leaves, which use for some days: this being done, bath the place where the scurf is, with *Spiritus Nicotiana* made by fermentation, which being dryed in, anoint first with oil of Tartar, then with oil of Almonds; repeating the three last works so often till the scurf goes away.

If all these fail, you must have recourse to our liquor of Talk, or Mercurial Cosmetick; or those at the fifth and eighth Section of the second Chapter, which without doubt will perform your desire.

VI. To free the Skin from Tetter and Ring-worms.

Dissolve *Sublimate* one ounce in a glass of Red-wine by boiling, with which wash the place morning and evening, letting it dry of it self, for three or four days together,

together, and it will certainly cure: if they be not inveterate, our liquor of Talk at the first Section of the second Chapter, or Mercurial Cosmetick may sufficiently do; or you may anoint with this ointment. Take *Sal Tartari* two drachms, burnt Alom three drachms, powder and incorporate with whites of eggs: Or this, take *Sulphur vive* three drachms, Camphire one drachm, Hogs-grease two ounces, mix and make an ointment.

VII. *To take away wrinkles from the Skin.*

Take oil of Almonds, lees of oil Olive, and make them into an ointment with wax, powder of Camphire and Mastich, with which anoint. Oil of Myrrh to anoint with, is eminent in this case: or wash with a decoction of Briony roots and Figs of each alike: or dissolve Gum Tragacanth in *Lac Virginis*, and wash with that. Excellent good is a strong decoction of Pomegranate Pills in White-wine, to wash often with.

VIII. *To take away Warts.*

The juice of the greater Spurge with Salt, anointed takes them away, so also a continual washing with a *Lixivium* of Quicklime and Salt of Tartar. The juice of *Verrucaria* performs the same. A plaister of *Cantharides* with a defensative is very good in this case: so also this following wash: take *Saccharum Saturni* three ounces, *Sal-armoniack* one ounce, Vitriol common six drachms, Quicklime eight ounces, boil all in water four pound to the consumption of the half, with which often bath the Warts, and then wash with our Mercurial water. Black Soap hath often been found very good; but especially a Plaister of Turpentine.

IX. *To heal Chaps in the Skin.*

Our *Pomatum* in this case is most excellent: yet this following is commendable. Take Capons grease mixed well

well with Camphire, and anoint with Oil of Turpentine two drachms, mixed with *Unguentum Populeon* two ounces, is very good. So also oil of Roses mixed with Sheep Suet and wax to an ointment.

X. *To heal Burnings and Scaldings.*

Excellent good is the *Unguentum Rubrum* in our *Synopsis Medicinæ lib. 3. cap. 58. Sect. 1.* both to draw out the fire, and to heal. To draw out the fire also, glair of eggs mixed with Rose-water, is very prevalent: so also is Salt, raw Onions, Soap, Yest, Oil of Tartar and the like. To hinder the rising of the blisters, Hens dung three ounces, mixed with Hogs greafe four ounces, and Salt of Tartar one ounce is very good; so also a cataplasm of Honey and crums of bread; but best of all a plaister of strained *Opium*, with Oil and Wax, which performs all the intentions to admiration. If the blister break, it may be presently skinned by anointing with oil of eggs, and washing often with *Lac Virginis*, strewing upon the sore, powder of Bole, Tutty, Ceruse or the like.

XI. *To take away scars and marks of the small Pox.*

Take of oil of Tartar one ounce and half, Ceruse dissolved in oil of Roses one ounce, *Borax* and *Sal Gem* of each one drachm, mix and make an ointment, with which anoint. Oil of Tartar alone performs this work well: so Salt of Tartar, mixed with powder of Myrrh and oil of Roses. But *Emplast. Epispasticum* is infallible and safe.

XII. *To beautifie the hands.*

To make them soft, often anoint with the oil of Almonds or our *Pomatum* at night going to bed, washing them the next morning with decoction of wheat-bran: after a while wash them with Salt of Tartar, dissolved in fair water, perfumed with oil of Cloves, Oranges, Rhodium or Cinnamon. Or this, take Venice Soap

dissolved in juice of Limons one pound, Virgin-honey four ounces, Sublimate, Orice root, Sugar, Salt of Tartar, Alom, Borax of each one ounce, Balsom of *Pern* two drachms, oil of Cloves one drachm, oil of Rhodium and Cinnamon of each half a drachm, make a mixture to wash the hands withal: Or this, take powder of Venice Soap one pound, Orice root eight ounces, *Amylum* six ounces, mix them and make an ointment with *liquid Storax* and oil of *Benjamin* a sufficient quantity; it wonderfully whitens, smooths and softens the hands. To anoint also with a Bulls gall is very good.

XIII. *To help hands which are swoln, and look red or blew with cold.*

What we even now said (in the last Section) may be said again here: to which we add, that a long bathing of them in a lather of Castle Soap, is very good if it be done: or if a repercussive plaister be applied made of barley meal, *Saccharum Saturni*, and oil of Myrtles; washing (after the coming off of the Cataplasme) with juice of Limons or white-wine Vinegar: a plaister of Turpentine mixed with Salt is good. Often to anoint the hands with oil of Roses, Almonds, or *Pomatum* at night, and the next morning with the *Lac Virginis* prevails much. Oil of Aniseeds, Caraways and Fennel prepared chymically, as also Cloves and Oranges, mixed with oil of Almonds and often used, are eminent above all other things.

XIV. *To make the Skin soft, smooth, and white, take away Pimples, Morphem, Scurf, &c.*

Bath the places affected, well, morning and night, with *Powers* of *Rosemary*, *Amber*, or *Limons*, and you will have your desire in some short time with advantage. These things are beyond all hitherto named.

C H A P. IV.

Of making a sweet Breath.

I. **A** *Stinking Breath comes from one of these four causes, viz. Putrified Lungs, defective Teeth, a distemper of the Head, or obstruction of the Stomach.*

II. *To remedy a Stinking Breath coming from putrified Lungs.*

Take *Unguentum Nicotiana* one ounce, *Oleum Succini* two drachms, mix them and anoint the breast outwardly; inwardly give cleansers, (as oil of Sulphur allayed with Rose water, or rather digested with Spirit of Wine) morning and evening; as also *Antimonium Diaphoreticum* ten grains five times a day for several days together; then heal by giving oil of Almonds mixed with a few drops of oil of Cinnamon, or Pills of Turpentine: Lastly, morning, noon and night let this bolus be adhibited, take Nutmegs, Mace, Ginger, of each fifteen grains, honey two drachms, oil of Cinnamon ten drops, mix them, and continue it for some weeks. *Bezoar Minerale* is famous.

III. *To help the defects of the Teeth.*

1. *If the Teeth be furred over, rub them every morning with cremor Tartari in powder, and wash them with White-wine.* 2. *If the teeth be black; allay oil of Sulphur or Vitriol in Rose-water, and scowr them well therewith, with the end of a stick and a rag, till all the blackness be gone; then rub them with oil of Almonds perfum'd with oil of Cinnamon.* 3. *If the teeth be loose, first rub them with this powder, take Galls, Pomegranate flowers, Sumach, Cyperus, of each one ounce, Roch Alom half a pound, powder them all for use: then use this Gargarisme. Take Galls one ounce,*
Myrrh,

Myrrh, Pomegranate peels of each half an ounce, boil them in White-wine Vinegar for a Gargarisme. Lastly, morning, noon and night wash the gums with good red Wine; by this means the teeth will be fastned and the gums restored. 4. *If they be in danger of rotting;* take ashes of Harts-horn, magistery of Coral of each one ounce, musk, or instead thereof oil of Cinnamon, ten grains, mix for a dentifrice to rub the teeth withal, it will keep them white and sound. 5. *If they be rotten and hollow;* make little pellets of strained Opium, Myrrh and oil of Cinnamon, and put them into the hollow tooth. 6. *If they ach;* use the aforesaid pellets, or make little ones of *Laudanum Paracelsi*, and put them into the hollowness: or if they be not hollow, tye a little pill of the same up in a fine thin rag, and hold it between the aking teeth. 7. *If they stink;* often wash them with wine or spirit of wine, in which a few drops of oil of Cinnamon and *adeps Rosarum* is dissolved. But for the pain, a Dose of *Laudanum* at night going to bed, is without exception.

IV. *To rectifie a Stinking Breath arising from distemper of the head.*

Consider the cause of the distemper, whether it arises from the Pox, Apostemes, or the like, and follow the method instituted in the cure of those diseases, and then the cause being taken away, the effects you will find will soon cease; yet nevertheless these following pills are excellent: take *Calx* of refined Silver made by spirit of Nitre, and well dulcified by washing in warm rain water, one ounce, *Resina Scammonii* one ounce and half, mix them for a mass of pills, of which take eight or ten grains at night going to bed every third, fourth or fifth day.

V. *To rectifie a Stinking Breath arising from the obstruction of the Stomach.*

This

This is done by opening and cleansing the Stomach thus. Take every evening going to bed half a drachm of *Pil. Ruffi* for ten or twelve days together: Or thus, first vomit with *Vinum Benedictum* one ounce or more, according as Strength requires, twice or thrice; then take *Pilula Rudii* half a drachm at a time, in the morning fasting, drinking after it some warm broth or posset-drink, which repeat every third or fourth day four or five times.

VI. To rectifie the Breath, when it smells of any thing that is eaten.

Chew Coriander seed, or Zedoary in the mouth, drinking a good draught of wine after; the scent of the wine is taken away by eating sour apples or Quinces, or by chewing troches of Gum-Tragacanth perfumed with oil of Cinnamon.

how to
take
the smell
of wine
away

CHAP. V.

Of beautifying the Hair.

I. TO dye the Hair black.

This is done with the *Calx of Luna* (made by Spirit of Nitre) mixed with fair water, and the hair washed therewith, with a Sponge: it is the most excellent thing of that kind that is yet known.

Nitrate
of
Silver

II. To keep the hair from falling off.

Take Myrtle berries, Galls, Emblick Myrobalans of each alike, boil them in oil Omphacine, with which anoint: it is an excellent Medicine, yet as old as Galen.

III. To remedy Baldness.

This is a hard thing to cure, yet the following things are very good. Rub the head or bald places every morning

morning very hard with a coarse cloth, till it be red, anointing immediately after with Bears grease: when ten or fifteen days are past, rub every morning and evening with a bruised Onion, till the bald places be red, then anoint with honey well mixed with Mustard-seed, applying over all a plaister of *Labdanum* mixed with mice dung, and powder of Bees: do this for thirty days. If all the former fail, bath with a decoction of Bur-dock roots, made with a *Lixivium* (of Salt of Tartar) two parts, and muskadel one part; immediately applying this Unguent: take *Thapsi* or *Turbeth* onedrachm (in powder) Bears grease one ounce, mix them, which use for sixty days; if this make not the hair come, the defect is incurable.

IV. To take away hair from places where it should not grow.

Take Quicklime four ounces, *Auripigmentum* one ounce and a half, *Sulphur vive*, Nitre, of each half an ounce, *Lixivium* of Salt of Tartar a quart, mix and boil all so long in a glazed earthen pot, till putting a quill therein, all the feathers peel off, and it is done. First foment the place with warm water a little before you use the aforesaid medicine; a quarter of an hour after wash with very hot water; then anoint with the aforesaid Unguent, and in a quarter of an hour it will do the work: when the hairs are fallen away, remember to anoint with oil of Roses; now to keep them from ever growing again, anoint for some days with an ointment made of the juices of Henbane and Nightshade, *Opium* and Hogs grease.

V. To make the hair curl.

Wash the hair very well with a *Lixivium* of Quicklime, then dry it very well, that done, anoint it with oil of Myrtles, or oil *Omphacine*, and powder it well with sweet powder, putting it up every night under a cap:

To prevent
growing
again

cap: if the party be naturally of a cold and moist constitution, the washing, anointing and powdring must be perpetually used once or twice a week during life, the hair being put up every night.

VI. *To make hair lank and flag that curls too much.*

Anoint the hair throughly twice or thrice a week with oil of Lillies, Roses, or Marsh-mallows, combing it after it very well.

VII. *To make the hair grow long and soft.*

Distil Hogs grease or oil Olive in an Alembick with the oil that comes there-from anoint the hair, and it will make it grow long and soft: use it often.

VIII. *To preserve the hair from splitting at the ends.*

Anoint the ends thereof, with oil Omphacine, or oil of Myrtles, they are eminent in this case to preserve the hair from splitting, so also an ointment made of Honey, Bees wax and oil Omphacine or Bears grease.

C H A P. VI.

Of the Art of Perfuming in General.

I. **I**N this Art two things are to be considered, *viz.*

1. The way and manner of making of Perfumes.

2. The way and manner of Perfuming.

II. The Perfume it self is considered, 1. In respect of its form. 2. In respect of its Composition.

III. The Form of the Perfume is either Water, Oil, Essence, Unguent, Powder, or Tablets.

IV. The Making and Composition is taken from the Form and matter.

V. The

V. The Matter is either Vegetable, Animal or Mineral.

VI. The way of Perfuming is according to the matter to be perfumed.

VII. The matter to be perfumed is either natural, as Hairs, Skins, Cloaths, Air, &c. or Artificial, as Pomanders, Powders, Wash-balls, Soaps, Candles, and other things of like nature.

C H A P. VII.

Of the Matter of which Perfumes are made.

I. **T**HE ground of *Vegetable Perfumes*, is taken from *Flowers, Seeds, Herbs, Roots, Woods, Barks,* and *Gums*.

II. The chief *Flowers* for this use, are of *Clove-gilliflowers, Roses, Jasemin, Lavander, Oranges* and *Saffron*.

III. The chief *Seeds* or fruits are *Nutmegs, Cloves, Carraways, Grains, Seeds of Geranium Moschatum,* and the *Nut Ben*.

IV. The chief *Herbs* are *Geranium Moschatum, Basil, sweet Marjoram, Tyme, Angelica, Rosemary, Lavander, Hyssop, sweet Trefoyl, Mint* and *Bay-tree leaves*.

V. The chief *Roots* are of *Calamus Aromaticus, Ginger, China, Caryophyllata, Indian Spicknard* and *sweet Orrice or Iris*.

VI. The chief *Woods* are of *yellow Sanders, Xylobalsamum, Lignum Aloes,* and *Rhodium*.

VII. The *Barks* and *Peels* are of *Cinnamon, Mace, Oranges, Limons* and *Citrons*.

VIII. The

VIII. The chief *Gums* are Frankincense, *Olibanum*, Labdanum, Styra^x, liquid Styra^x, *Balsamum Verum*, Ambergrise, *Styrax Calamita*, Benjamin, Amber, Camphire.

IX. The chief matters of Perfumes taken from *Animals*, are Musk, Zibet, Cow-dung, and other turds.

X. Of *Minerals* there are two only, which yield a Perfume, and they are *Antimony* and *Sulphur*.

C H A P. VIII.

Of the Oil of Ben.

I. **T**HE little Nut which the Arabians call *Ben*, is the same which the Latins call *Nux Unguentaria*; and the Greeks *Balanus Myrepsica*; out of which is taken an Oil, of great use in the Art of Perfuming.

II. *To make the Oil of Ben.* Blanch the Nuts, and beat them very carefully in a mortar, and sprinkle them with wine, put them into an earthen or Iron Pan, and heat them hot, then put them into a linnen cloth, and press them in an Almond press; this work repeat, till all the Oil is extracted, so have you Oil of *Ben* by expression.

III. In like manner you may express the Oil out of Citron seeds, incomparable for this purpose, to extract the scent out of Musk, Civet, Amber and the like, because it will not quickly grow rank, yet Oil of the *Nut Ben* is much better.

IV. This oil of *Ben* hath two properties; the one is, that having no scent or odour of it self, it alters, changes or diminishes not the scent of any Perfume put into it:
the

the other is that it is of a long continuance, so that it scarcely ever changeth, grows rank, corrupts or putrifies, as other oils do.

V. To make a Perfume thereof, put the Musk, Amber, &c. in fine powder thereinto, which keep in a glass bottle very close stopped, for a month or more, then use it.

VI. Or thus, Blanch your Nuts, and bruise them, (Almonds may do though not so good) and lay them between two rows of Flowers, suppose Roses, *fascemin*, &c. or other Perfumes; when the Flowers have lost their scent and fade, remove them, adding fresh ones; which repeat so long as Flowers are in season; then squeez out the oil, and it will be most odoriferous.

VII. Lastly, by this last you may draw a sweet scent out of those Flowers, out of which you cannot distil any sweet water.

C H A P. IX.

Of sweet Waters.

I. **T**he first sweet water.

Take Cloves in powder two drachms, yellow Sanders, *Calamus Aromaticus* of each one scruple, *Aqua Rosarum Damascenarum* fifteen pound, digest four days, then distill in an Alembick; to this new distilled water put in powder Cloves, Cinnamon, Benjamin, *Storax Calamita* of each one drachm, distill again in *Balneo*; lastly put the water into a glass bottle with Musk and Ambergrise of each ten grains, keep it close stopt for use.

II. *The*

II. *The second sweet Water.*

Take Damask Roses exungulated three pound, Flowers of Lavender and Spike of each four ounces, Clove-gilliflowers, and Flowers of *Jasemin*, of each two pound, Orange-flowers one pound, Citron peels four drachms, Cloves two drachms, Cinnamon, *Storax Calamita*, Benjamin, Nutmegs, of each two scruples all in powder, *Aque Rosarum* six pound, digest ten days, then distil in *Balneo*: to the distilled water add of Musk and Ambergrise of each thirty grains.

III. *The third sweet Water.*

Take Roses, Clove-gilliflowers of each one pound, Flowers of Rosemary, Lavender, *Jasemin*, Marjoram, Savory, Time, of each three ounces, dry Citron peels one ounce, Cinnamon, Benjamin, *Storax Calamita*, of each two drachms, Nutmegs, Mace, of each one drachm, bruise the Herbs and Spices well, digest in the Sun two days, then distil in *Balneo*: to the distilled water add Musk in powder one scruple.

IV. *The fourth sweet Water.*

Take Cloves, Cinnamon of each one drachm, Mace, Grains, Musk, Ambergrise, Citron peels of each half a scruple, Benjamin, *Storax Calamita* of each one scruple, *Aque Rosarum* twelve pound, digest fifteen days, then distill in *Balneo*.

V. *The fifth sweet Water.*

Take Rosemary-flower water, Orange-flower water of each five pound, Ambergrise one scruple, digest ten days, then distil in *Balneo*.

VI. *The sixth sweet Water.*

Take Roses two pound, Macaleb half a drachm, Ambergrise ten grains, bruise what is to be bruised, digest in sand three days, then distil in *Balneo*.

VII. *The seventh sweet Water.*

Take green peels of Oranges and Citrons of each four drachms, Cloves half a drachm, flowers of Spike six ounces, *Aqua Rosarum Damascenarum* six pound, digest ten days, then distil in *Balneo*.

VIII. *The eighth sweet Water.*

Take of the water at the fifth Section six pound, Musk ten grains, mix and digest them for use.

IX. *The ninth sweet Water.*

Take *Aqua Rosarum*, *Aqua Florum de Jasemin* of each four pound, Musk one scruple, digest ten days, then distil in sand.

X. *The tenth sweet Water.*

Take Damask-roses, Musk-roses, Orange-flowers of each four pound, Cloves two ounces, Nutmegs one ounce, distil in an Alembick, in the nose of which hang Musk three scruples, Amber two scruples, Civet one scruple, tyed up in a rag dipt in bran, and the white of an egg mixed.

XI. *The eleventh sweet Water, called Aqua Nansa or Naphe.*

Take *Aqua Rosarum* four pound, Orange-flower-water two pound, waters of sweet Trefoyl, Lavender, Sweet Marjoram of each eight ounces, Benjamin two ounces, Storax one ounce, Labdanum half an ounce, Mace, Cloves, Cinnamon, Sanders, *Lignum Aloes* of each one ounce, Spicknard one ounce; all being grossly beaten, digest a month, then in a glass retort distil in *Balneo*.

XII. *The twelfth sweet Water, called Aqua Moschata.*

Take spirit of wine rectified to the highest two pound, Musk three scruples, Ambergris two scruples, Civet one scruple, digest in the Sun twenty days close stopped in a glass vessel; a drop of this water put into any other liquor, will very well perfume it.

So may you extract the scent out of sweet Flowers, with this difference, that they lie but a little while, because their earthy substance will make the spirit ill-savoured.

XIII. *The thirteenth sweet Water.*

Take a quart of Orange flower water, and as much Damask Rose water: add thereto Musk willow seeds grossly bruised four ounces, Benjamin two ounces, Styrax one ounce, Labdanum six drachms, Lavender flowers two pugils, musked Cranesbill three pugils, Sweet-Marjoram as much, *Calamus Aromaticus* a drachm, distil all in a glass stillatory in *Balneo*, the joynts being well closed that no vapor get out.

C H A P. X.

Of Perfuming Oils and Spirits.

I. **T**O make Perfuming Oils by infusion

This is taught fully at the fifth Section of the eighth Chapter aforegoing.

II. *To make Oleum Imperiale.*

Take Ambergrise four drachms, *Storax Calamita*, eight ounces, Rose-water, *Oleum Rosatum* of each two pound, oil of Cinnamon and Cloves of each half a drachm, put all into a glass, and digest in horse dung twenty days: this done, gently boil all for a quarter of an hour, which then let cool; with a spoon take off the oil which swims a top, to which put of Musk and Zibet of each two drachms, digest all in a gentle heat for twenty days, and keep it for use. Where note the Amber and Storax at bottom will serve to make sweet balls of, to lay among cloaths, or beads to carry in ones hands; or for a perfume to burn.

III. To make Oil of Cinnamon.

Digest Cinnamon grossly bruised in spirit of Wine, sharpned with oil of Salt, in a glass vessel, with a blind head closely luted, in a gentle heat for ten days, then distil in an Alembick, as we have more at large taught in our *Pharmacopœia*, lib. 4. cap. 3. Sect. 12. it is a wonderful Perfume, the most fragrant and pleasant of all Oils, as well in taste as smell: the use of it will certainly take away a stinking Breath.

IV. To make Oil of Roses, called adeps Rosarum.

Take Damask Roses, pickle them with Bay salt, and after three months, with a large quantity of water distil in ashes with a gentle fire, so have you Oil, and Spirit or water, which keep for other distillations. *Wickerus* hath it thus,

Rosarum folia in umbra aliquandiu asservata in matula vitrea magna ponuntur, cujus sit fundus latus, & ad dimidium vas impletur: inde affunditur ipsis Rosarum foliis tantum aquæ rosacæ stillatitiæ, quantum satis fuerit, ut optimè madeant: appositòque pileo vitreo cæco, stipatisque optimè rimis cera gummata, quindecim diebus equino fimo macerantur: sic tamen, ut mutato, cùm frigescere cœperit, fimo, calor equalis servetur. Apposito mox matule rostro pileo, igne moderato cinerum, aqua omnis elicitur: quæ rursus in eadem matula, optimè priùs à facibus mundata ablutaque ponitur, & calentis aquæ balneo lentissimo igne elicitur, dum tota in vâs recipiens abeat. Nam in fundo matule remanebit oleum rosarum, colore rubrum, perspicuum, & Moschi odore suaviter fragrans.

This is the greatest of all vegetable perfumes, and of an inestimable value.

V. To make Oil of Calamus Aromaticus.

It is made as oil of Cinnamon: it is a very great perfume, helps a stinking breath, vomiting, weak memory, &c.

VI. To

VI. *To make Oil of Rhodium.*

It is made as oil of Cinnamon: is a very excellent perfume, good for the head, breath and the senses.

VII. *To make Oil of Indian Spicknard.*

By infusion it is made by the first Section; by distillation, as oil of Cinnamon. It is an eminent Perfume.

VIII. *To make Oil of Benjamin.*

Take Benjamin six ounces in powder, which dissolve in oil of Tartar and *Aquæ Rosarum* of each one pound, which distil with a close pipe in an Alembick. So is made oil of *Storax* and *Labdanum*.

IX. *To make Oil of Storax compound.*

Take oil of Ben, or sweet Almonds one pound, Storax grossly beaten four ounces, Benjamin, Cloves, of each two ounces, digest (till the Gums are melted) over hot coals; then press out the oil diligently.

X. *To make Spirit of Ambergrise.*

Take of the best rectified Spirit of Wine a pint, Ambergrise, Musk (both in fine Powder) of each two drachms, seal up the Glass hermetically, and digest in a very gentle heat, till the Tincture is fully drawn out; three or four drops of this Spirit will perfume a pint of any Liquor richly. Or you may put a drop or two round the brims of a drinking glass; half a spoonful of it mixt with a fit Vehicle, is a rich Cordial.

C H A P. XI.

Of Perfuming Essences.

I. **T**He way to extract Essences is somewhat difficult, viz. by Distillation, Calcination, Digestion or *Menstruum*.

II. If by *Menstruum*, use not a watry one for a watry essence; nor an oily one for an oily essence; because being of like natures, they are not easily separated; but on the contrary, chuse an oily *Menstruum* for a watry essence, and a watry *Menstruum* for an oily essence.

III. If the essence of any metal be to be extracted by a *corrosive Menstruum*, after the work is done, separate the salts from the waters, and use only those salts which will be easily taken out again; *Vitriol* and *Alom* are very difficult to be separated by reason of their earthy substance.

IV. To extract the essence out of *Musk*, *Ambergrise*, *Civet*, and other *Spices* or *Aromaticks*.

Mix the perfume with oil of *Ben*, which in a glass bottle set in the Sun or Sand for ten days, then strain it from the dregs, and the essence will be imbibed in the oil. Then take spirit of Wine, and distilled fountain water, which mix with the said oil, and digest for six days: then distil in sand; so will the essence and water ascend, (the oil remaining at bottom without any scent) that essence and water distil in *Balneo* in a glass vessel, till the water be come off, and leave the essence in the bottom in the form of oil.

V. Another

V. *Another way to do the same.*

Infuse the matter in spirit of Wine a sufficient quantity, digest and ferment for ten days, then distil in sand, as long as any water will come over (but have a care of burning) which distilled Liquor draw off in *Balneo*, with a very gentle heat and the quintessence will be left in the bottom, of a liquid form.

VI. *To extract the essence out of Herbs and Flowers, as of Sweet Marjoram, Basil, Orange-flowers, Jasmin, &c.*

Bruise the matter, and put it into a glass vessel to ferment in Horse-dung for a month; then distil in *Balneo*: set it in dung for a week again, and distil in *Balneo* again; which reiterate so long as it will yield any liquor; put the distilled matter upon the *Caput mortuum*, distilling thus for six days: draw off the water in *Balneo*; and the essence remaining express in a press: which being a week fermented in dung, will yield the perfect scent, colour and vertues of the matter desired.

VII. *To extract the essence out of Salts.*

Calcine the Salt, and grind it very small, then lay it upon a marble in a moist Cellar, setting under it a pan to receive the dissolution; therein let it ferment for a month, then with a gentle fire distil in *Balneo*: cast away the insipid water, which comes from it; and set that which remains in the bottom, to ferment another month, then distil out the insipid water as before; repeating this work so long as any insipid water may be drawn: then evaporate away all the moisture, and what remains is the quintessence of Salt.

Where note, 1. That these Saline quintessences as they may be used, will draw forth the perfect and compleat essence of any vegetable whatsoever. 2. That the essence of Salts thus drawn, will scarcely come to two ounces in a pound.

C H A P. XII.

Of Perfuming Unguents.

I. **T**O make Unguentum Pomatum, or Ointment of Apples.

Take Hogs Lard three pound, Sheeps Suet nine ounces, bruised Cloves one drachm, *Aqua Rosarum* two ounces, Pomwaters pared and sliced one pound, boil all to the Consumption of the Rose-water; then strain without pressing, to every pound of which add oil of *Rhodium* and Cinnamon of each thirty drops.

II. *To make a compound Pomatum.*

Take of the Pomatum aforesaid, (without the oils) four pound, Spicknard, Cloves of each two ounces, Cinnamon, Storax, Benjamin of each one ounce (the Spices and Gums bruised and tyed up in a thin rag) Rose-water eight ounces; boil to the Consumption of the Rose-water, then add white wax eight ounces, which mix well by melting, strain it again being hot; and when it is almost cold, mix therewith oil of Musk (made by the first Section of the tenth Chapter) then put it out, and keep it for use.

III. *Another excellent Ointment.*

Take hogs grease one pound, *Saccharum Saturni* two ounces, mix them well by gently melting them; to which add oils of Musk and Ambergrise of each half an ounce, let them all cool, and beat the Unguent well in a mortar, and keep it for use.

IV. *To make Unguentum Moschatum.*

Take hogs grease one pound, Ambergrise, Mosch of each one drachm and a half, (ground with oil of *Jasemin*

femin upon a marble) *adepts Rosarum* half an ounce (ground with Civet one drachm) mix all together into an ointment which keep for use.

C H A P. XIII.

Of Perfuming Powders.

I. **T**O make Powder of Ox dung.

Take red Ox dung in the month of *May* and dry it well, make it into an impalpable Powder by grinding: it is an excellent Perfume without any other addition; yet if you add to one pound of the former, Musk, and Ambergrise of each one drachm, it will be beyond comparifon.

II. *To make Cyprian Powder.*

Gather Musk moss of the Oak in *December, January* or *February*, wash it very clean in Rose-water, then dry it, steep it in Rose-water for two days, then dry it again, which do oftentimes; then bring it into fine Powder and fierce it; of which take one pound, Musk one ounce, Ambergrise half an ounce, Civet two drachms, yellow Sanders in powder two ounces, mix all well together in a marble mortar.

III. *Another way to make the same.*

Take of the aforesaid powder of Oak-moss one pound, Benjamin, Storax of each two ounces in fine Powder; Musk, Ambergrise and Civet of each three drachms, mix them well in a mortar.

IV. *A Sweet Powder to lay among Cloaths.*

Take Damask-rose leaves dryed one pound, Musk half a drachm, Violet leaves three ounces, mix them and put them in a bag.

V. *Another*

V. *Another for the same or to wear about one.*

Take Rose leaves dryed one pound, Cloves in powder half an ounce, Spicknard two drachms, Storax, Cinnamon of each three drachms, Musk half a drachm, mix them and put them into bags for use.

VI. *Powder of sweet Orrice, the first way.*

Take Florentine Orrice root in powder one pound, Benjamin, Cloves of each four ounces in powder, mix them.

VII. *Powder of Florentine Orrice, the Second way.*

Take of Orrice root six ounces, Rose leaves in powder four ounces, Marjoram, Cloves, Storax in powder of each one ounce, Benjamin, yellow Sanders of each half an ounce, Violets four ounces, Musk one drachm, Cyperus half a drachm, mix them: being grossly powdered, put them into bags to lay amongst linnen: but being fine, they will serve for other uses, as we shall shew.

VIII. *Powder of Orrice roots, the third way, excellent for linnen in bags.*

Take roots of Iris one pound, sweet Marjoram twelve ounces, flowers of Rosemary and Roman Camomil, leaves of Time, *Geranium Moschatum*, Savory of each four ounces, Cyperus roots, Benjamin, yellow Sanders, *Lignum Rhodium*, Citron peel, Storax, Labdanum, Cloves, Cinnamon of each one ounce, Musk two drachms, Civet one drachm and a half, Ambergrise one drachm, powder and mix them for bags. This composition will retain its strength near twenty years.

IX. *Powder of Orrice, the fourth way.*

Take Orrice roots in powder one pound, *Calamus Aromaticus*, Cloves, dryed Rose leaves, Coriander seed, *Geranium Moschatum* of each three ounces, *Lignum*
Alces,

Aloes, *Marjoram*, Orange peels of each one ounce, *Storax* one ounce and a half, *Labdanum* half an ounce, *Lavender*, *Spicknard* of each four ounces, powder all and mix them, to which add *Musk*, *Ambergrise* of each two scruples.

X. *Pulvis Calami Aromatici compositus.*

Take *Calamus Aromaticus*, yellow Sanders of each one ounce, *Marjoram*, *Geranium Moschatum* of each one ounce, *Rose leaves*, *Violets*, of each two drachms, *Nutmegs*, *Cloves* of each one drachm, *Musk* half a drachm, make all into powder, which put in bags for Linnen.

XI. *Another of the same.*

Take *Calamus Aromaticus*, Florentine Iris roots of each two ounces, *Violet flowers* dryed one ounce, round *Cyperus* roots two drachms; *adepts Rosarum* one drachm and a half, reduce all into a very fine powder: it is excellent to lay among Linnen, or to strew in the hair.

XII. *An excellent perfuming Powder for the Hair.*

Take Iris roots in fine powder one ounce and a half, *Benjamin*, *Storax*, *Cloves*, *Musk* of each two drachms: being all in fine powder, mix them for a Perfume for hair Powder. Take of this Perfume one drachm, *Rice-flower* impalpable one pound, mix them for a powder for the hair. Note, some use white starch, flower of French Beans and the like.

XIII. *A sweet Powder for a Silk Bag.*

Take *Benjamin*, *Storax Calamita*, *Cloves*, *Lignum Aloes*, of each two ounces, yellow Sanders three ounces, Florentine Orrice six ounces, *Musk* half a drachm, mingle them.

XIV. *Another for the same.*

Take Florentine Orrice, *Spicknard*, sweet *Marjoram* dryed, *Geranium Moschatum* of each four ounces,
Damask

Damask Roses, Cyprefs, Lavender flowers, of each three ounces; *Benjamin*, *Lignum Rhodium*, of each an ounce mix them.

XV. *Another for the like intention.*

Take Damask Roses, yellow Sanders, *Lignum Aloes*, of each four ounces, *Benjamin*, Spicknard, Cyprefs, of each two ounces, mingle them together.

XVI. *Another for the same purpose.*

Take Damask Rose leaves a handful, cut off the whites, put them in a Glas, and put to them Musk half a scruple, Ambergrise six grains, Civet four grains, stop the Glas close, and set it in the Sun till the leaves be thorough dry.

XVII. *A Powder for a sweet Bag.*

Take Orrice, Cyprefs, white Sanders, Lavender, Damask Roses, of each four ounces; *Calamus*, *Storax Calamita*, *Benjamin*, sweet Basil, sweet Marjoram, *Geranium Moschatum*, of each two ounces; Cloves, Rosemary flowers, of each one ounce, mix them.

XVIII. *Another sweet Bag.*

Take Damask Roses four ounces and a half; Marjoram, Orrice, of each four ounces; *Geranium Moschatum* three ounces; *Labdanum* two ounces and a half, *Lignum Aloes*, white Sanders, Cloves, Cyprefs, *Benjamin*, *Calamus*, of each two ounces; Musk, Ambergrise, of each one drachm, mingle them.

XIX. *White Damask Powder.*

Take Orrice in powder, white starch, of each eight ounces; fine Musk a scruple, mix it first with a little, then with more, and lastly with the whole by degrees, the longer it is kept the better.

XX. *Another Damask Powder.*

Take damask Roses in powder two ounces and a half; *Calamus*, Orrice, Cyprefs, *Geranium Moschatum*,

tum, Lavender flowers, sweet Marjoram, *Labdanum*, of each two ounces; *Benjamin*, *Storax Calamita*, of each an ounce and half; *Nigella Romana* one ounce; Musk, Ambergrise, of each a drachm, mingle them.

XXI. *Another Damask Powder.*

Take Orrice four ounces; Cloves two ounces; *Labdanum*, Cypress, *Benjamin*, of each one ounce; *Calamus*, *Storax Calamita*, of each half an ounce; Civet, Musk, of each ten grains, mix them.

XXII. *Another sweet Powder.*

Take Orrice six ounces; Cloves four ounces; yellow Sanders, *Storax Calamita*, ana, two ounces, *Labdanum* one ounce, Musk a scruple, make a Powder.

C H A P. XIV.

Of Perfuming Balsams.

I. *Natural Balsams perfumed.*

Take *Balsamum verum* one ounce, Musk, Ambergrise, Civet of each two scruples, mix them, for a Perfume: it is the most fragrant and durable of all Perfumes.

II. *An odoriferous compound Balsam.*

Take of the aforesaid Balsam perfumed one ounce, oils of *Rhodium* and Cinnamon of each two drachms, mix them: this is an incomparable Perfume, and better than the other for such as are not affected so much with Musk.

III. *Balsamum Moschatum.*

Take oil of Musk one drachm, oil of Cinnamon half a scruple, Virgin wax one drachm and a half, melt the wax, and mix them according to Art.

IV. *Another*

IV. *Another very good.*

Take Cloves, Cinnamon, Lavender, Nutmegs of each two drachms, oils of Cloves and *Rhodium* of each half a drachm, Wax three drachms, Musk and Ambergrise of each ten grains, mix them into a Balsam.

V. *Another very excellent for those that love not the scent of Musk and the like.*

Take oil of *Geranium Moschatum* (made as *adeps Rosarum* by the fourth Section of the tenth Chapter) *adeps Rosarum*, oil of Cinnamon of each one drachm, Virgin wax six drachms, melt the wax, and mix the oils for a Perfume.

C H A P. XV.

*Of Perfuming Tablets.*I. **T**O make red Muskardines or Tablets.

Dissolve Gum *Tragacanth* in Rose-water, so that it may be as thick as Gelly: which make into paste with the following composition. Take *Amylum* one pound, fine Sugar half a pound, *Cochenele* two ounces, Musk three drachms, all being in fine powder, mix them, and make Tablets with the aforesaid Mucilage of *Tragacanth*, square, long, round, or of what form you please, which dry in an Oven, out of which bread hath been lately drawn: but be sure you dry them till they be as hard as horns.

II. *Another sort of red Tablets.*

Take of the aforesaid composition one pound, Cloves, Cinnamon, Nutmegs, Ginger of each two ounces, *Cochenele* one ounce, all being in fine powder, make into Tablets, with the aforesaid Mucilage, and dry as aforesaid.

III. To

III. To make yellow Tablets.

Take *Amylum* one pound, fine Sugar half a pound, yellow Sanders four ounces, Saffron two ounces, (or you may dip the *Amylum* in strong tincture of Saffron, and then dry it again) Musk four drachms, all being in fine powder, make the mass into Tablets, with the aforesaid Mucilage, adding oil of Cinnamon in drops two drachms, dry them carefully in the shade.

IV. Another sort of yellow Tablets.

Take *Amylum* dyed with tincture of Saffron one pound, Sugar half a pound, Saffron two ounces, Nutmegs Cinnamon, Ginger of each one ounce, Carraways half an ounce, Musk three drachms, Ambergrise one drachm, all in fine powder make into Tablets, as aforesaid, adding oil of Cinnamon two drachms; which dry in the shade, till they be as hard as Horn.

V. To make Muscardines or Tablets of any other colour.

You must make them after the same manner, only adding the colour you do intend; and in this case we think that it is better that the *Amylum* be dipt in the tincture, and dryed first before you use it. Where note, that these Tablets, when used, are to be held in the mouth, in which they will dissolve, thereby cheering the heart, reviving the senses, comforting the spirits, strengthening nature, restoring the body, and indeed nobly perfuming the breath. For them that do not love Musk, you may make them without, using instead thereof, so much the more oil of Roses or Cinnamon.

C H A P. XVI.

Of making Pomanders for Bracelets.

I. **T** *He first sort.* Take Orrice powder, Cloves, Mace, Cinnamon, of each half an ounce, yellow Sanders, Styrax, sweet *Assa* of each two drachms, Ambergrise, Musk of each one drachm, Balsam of *Peru*, oil of *Rhodium* of each one scruple, Civet two drachms, all being in fine powder (except the Balsam and oil) mix together, and make into paste with Mucilage aforesaid, of which form Beads, drying them in the shade for use.

II. *The second sort.* Take Storax, Labdanum, of each one drachm and a half, Benjamin one drachm, Cloves, Mace, Spicknard, *Geranium Moschatum* of each ten grains, Musk, Ambergrise of each six grains; with Mucilage make a Pomander for Bracelets.

III. *The third sort.* Take Damask-Rose leaves exungulated two ounces, beat them impalpable: Musk, Ambergrise of each two scruples, Civet one scruple, Labdanum one drachm with Mucilage of gum *Tragacanth*, in Rose-water aforesaid, make a Pomander for Bracelets.

IV. *The fourth sort.* Take Storax, Benjamin of each an ounce and half, Musk two drachms, oil of Cinnamon one drachm, with Mucilage aforesaid make a paste of Pomander, very excellent.

V. *The fifth sort.* Take Spicknard an ounce, sweet Marjoram, *Geranium Moschatum*, of each half an ounce, Orrice, Cloves, of each two drachms, *Calamus*, *Lignum Rhodium*, *Lignum Aloes*, of each a drachm, Cyperus, Benjamin, Cinnamon, white Sanders, of each

each a scruple, *Labdanum*, *Styrax Calamita*, and *Liquida*, of each half a scruple, with Mucilage of Gum *Tragacanth* in Rose-water, make a paste for *Pomanders*.

VI. *The sixth sort.* Take *Storax Calamita* two ounces, *Basil* three ounces, *Cloves* an ounce and half, *Benjamin*, *Marjoram*, *Storax Liquid*, of each one ounce, *Calamus*, *Cypress*, *Labdanum*, of each half an ounce, *Musk* a scruple, *Ambergrise* twelve grains, *Civet* six grains, with Mucilage of Gum *Tragacanth* in Rose-water make *Pomanders*.

VII. *The seventh sort.* Take *Labdanum* an ounce, *Storax*, *Cloves*, *Mace*, *Cinnamon*, of each three drachms, *Ambergrise*, *Musk*, of each a drachm and a half, *Virgin Wax* an ounce, mixt with sweet or Chymical oyl of *Bays* half an ounce, dissolve, mix and work them well together.

VIII. *The eighth way.* Take *Labdanum* six ounces, *Wax* two ounces, *Camphir*, *Calamus*, *Myrrh*, *yellow Sanders*, *wood of Aloes*, *Olibanum*, *Mastich*, of each two drachms, *Cinnamon*, *Cloves*, *Zedoary*, *Storax*, *Calamint*, of each a drachm and half, *Musk*, *Ambergrise*, of each a scruple, put them into a *Mortar*, and with a little *Malmsey*, make a mass for *Pomanders*.

IX. *The ninth sort.* Make Gum *Tragacanth* half a pound into a Mucilage with *Damask Rose water* *Muskifield*, to which add *Storax Calamita* nine ounces, *Nutmegs* four ounces, *Labdanum* three ounces, *Cinnamon*, *Cloves*, *Camphir*, *liquid Storax*, *natural Balsam*, of each one ounce: put the *Labdanum* into the *Mortar*, with a little *Oil of Spike*, and then the other things, which beat into a paste, with powder of black fallow *Charcoal*.

X. *The tenth sort.* Take strong Mucilage of Gum Tragacanth in Rose-water, which make into paste with Musk and Ambergrise in fine powder, of each a like quantity, then anointing your palm and fingers with oil of Musk, or some other sweet Oil, as of Lavender or the like, form them into round little Balls or Beads, which put upon a string, and dry them between two papers, being dried, keep them close from the Air, till you have occasion to use them.

C H A P. XVII.

Of Perfuming Wash-balls.

I. *To make Barbers Wash-balls.*

Take purified Venetian Soap six ounces, Macaleb four ounces, Ireos, Amylum of each seven ounces, Cloves two ounces, Labdanum, Anniseeds, of each one ounce, Nutmegs, Marjoram, Cypress powder, Geranium Moschatum, Camphire, of each half an ounce, Storax liquida half a drachm, Musk ten grains, all being in fine powder, with a little fine Sugar, beat all in a Mortar, and make them up into Wash-balls.

II. *To do the same another way.*

Take of the said Soap two pound, juice of Macaleb two ounces, Cloves, Orrice, of each three ounces, Labdanum two ounces, Storax one ounce, all being in fine powder, mix with the Soap, of which make balls, drying them in the shadow.

III. *To make Balls of white Soap.*

Take of white Soap five pound, Iris four ounces, Amylum, white Sanders, of each three ounces, Storax
one

one ounce, all in powder, steep in Musk-water, of which make paste for Wash-balls.

IV. *Another sort very good.*

Take of white Soap four pound, Orrice six ounces, Macaleb three ounces, Cloves two ounces, all in powder mix with the Soap, with a little oil of Spike, Rhodium or the like, of which make Balls.

V. *Another way to make them of Goats Fat.*

Make a strong *Lixivium* of Pot-ashes, as that a new laid Egg will swim thereupon, which boil with Citron peels: take of this Lye twenty pound, Goats Fat two pound, boil it for an hour, then strain it through a linnen cloth into broad platters of fair water, exposing it to the Sun, mix it often every day till it begins to grow hard, of which you may form Balls, which you may perfume with Musk half a drachm, Civet one scruple, oil of Cinnamon ten grains.

VI. *To make common Wash balls, the best of that kind.*

Take Venice or Castile Soap sliced very thin, four pounds, Spirit of Wine half a pint, beat all together; then add Chymical oil of Sassafras or Limons an ounce or more; and beat again very well: Lastly, add white Starch made into a paste with water by boiling a sufficient quantity to make all into an even and smooth Mass, which form into Balls of four ounces a piece, with powder of white Starch, dry them and keep them for use.

C H A P. XVIII.

Of perfuming Soaps.

T*O purifie Venetian Soap.*

Cut it small, to which put some Rose-water, or other perfuming water, boil them a while, then strain it and it will be sweet and good, then take off the Soap which swims a top with a spoon, and lay it upon a Tyle, and it will presently be dry, being white, free from filth and unctuosity.

II. *Another way to do the same.*

Grate the Soap, and dry it in the Sun, or an Oven, powder and sieve it, then moisten it with some sweet water or oil of Spike, which dry again (in the shadow) and keep it for use.

III. *To make white musked Soap.*

Take white Soap purified as aforesaid three pound, Milk of *Macaleb* one ounce, Musk, Civet of each ten grains, mix them and make all into thick cakes or rouls.

IV. *Another kind of sweet Soap.*

Take of the oldest Venice Soap, which scrape and dry three days in the Sun (purifying it as aforesaid) two pound, Ireos, Amylum, of each six ounces, Storax liquida two ounces, mix them well whilst hot; which put into pans to form Cakes.

V. *To make soft Soap of Naples.*

Take of *Lixivium* of Pot-ashes (so strong as to bear an Egg) sixteen pound, Deers Suet two pound, set them upon the fire to simmer; put all into a glazed Vessel with a large bottom, set it in the Sun for a while, stirring it
five

five or six times a day with a stick, till it wax hard like paste. Then take of this paste, to which put musked Rose-water; keep it eight days in the Sun, stirring it as aforesaid, so long as it may be neither too hard nor too soft; then put it up in boxes or pots.

VI. *To make the same Soap musked.*

Put to the said Soap, Rose-water two pound, fine musk in powder half a drachm, then mix the said water as before.

VII. *Another exquisite Soap.*

Take of the aforesaid *Lixivium* or oil of Tartar *per deliquium* twelve pound, oil Olive three pound, mix them, Amylum two pound, Roman Vitriol one ounce in powder, Glair of Eggs two ounces, put all together, and stir continually for four hours time, then let it stand the space of a day and it is done. You may perfume it as before; this makes the hair fair.

VIII. *Another exceeding the former.*

Take Crown soap, Vine-ashes, of each one pound, make it into Cakes with powder of Roch Alom and Tartar of each alike, which you may perfume at pleasure.

IX. *To get the juice or milk of Macaleb.*

Take the sweet and odoriferous grains of *Macaleb*, which beat in a mortar (with Rose-water, or some perfuming water) till it becomes like pap, then press out the juice or milk; which use within two or three days lest it spoil.

C H A P. XIX.

Of burning and boiling Perfumes.

I. **T**O make perfumed lights.

Take Olibanum two ounces, Camphire one ounce, beat them into powder, of which make, with wax, balls or rowls, which put into a glass Lamp with Rose-water and lighted with a candle, will give a fair light, and a very good scent.

II. *Another for a Lamp.*

Take sweet oil Olive one pound, Benjamin, Storax in powder one ounce, Musk, Ambergrise, of each one scruple, mix all with the oil, which put into a Lamp to burn: and the oil will yield a fragrant odour.

III. *To make perfumed Candles.*

Take Labdanum, Myrrh, Xylo-aloes, Styrax calamita, of each one ounce and a half, Willow Charcoal one ounce, Ambergrise, Musk, of each ten grains, make them into paste with Mucilage of Gum Tragacanth in Rose-water, which make into rouls like Candles, and dry for use.

IV. *A Perfume to smok and burn.*

Take Labdanum two ounces, Storax one ounce, Benjamin, Cloves, Mace, of each half an ounce, Musk, Civet of each ten grains, all in fine powder, make up into cakes with Mucilage of Gum Tragacanth in Rose-water, which dry; and keep among your cloaths, which when occasion requires, you may burn in a chafing-dish of coals.

V. *Another smoaking Perfume to burn.*

Take Labdanum two drachms, Storax one drachm, Benjamin, Frankincense, white Amber, Xylo-aloes, of each

ounces : all being in powder, mix, and make Cakes.

XI. *Another for the like intention.*

Take Benjamin, Styrax Calamita, Amber, all in powder, of each half an ounce; Lignum Aloes, yellow Sanders, of each six drams in powder: make them into paste with Gum Tragacanth dissolved in Rose water, which form into Cakes, and dry them for use.

XII. *A Perfume called Amber Paste.*

Take Styrax Calamita two ounces: Florentine Orrice, Amber *ana* an ounce and half: Nutmegs an ounce: Musk a scruple: being in powder make a paste with Gum Tragacanth dissolved in Rose-water.

XIII. *A boiling perfume.*

Fill a Silver or Earthen pan with Damask Rose-water, adding Cloves well bruised half an ounce, Bay-leaves two drams: put them over the fire, and as it wastes, fill up with fresh Rose-water.

XIV. *King Henry his perfume.*

Take Damask Rose-water a pint; Cloves bruised, yellow of Limons of each half an ounce: Musk ten grains: boyl all in a perfuming pan, with two drachms of white Sugar.

XV. *King Edward his perfume.*

Take Damask Rose-water a pint: Ambergrise a Scruple, Civet ten grains: mix in a perfuming pan, setting it over soft Embers.

XVI. *The French Queens perfume.*

First burn Chips of Cypress in the Chamber a pretty while, the doors and windows being shut. Then take Damask Rose-water a pint: white Sugar Candy an ounce: put them into a perfuming pan, and let them boyl softly on Embers.

C H A P. XX.

*Of Animal and Mineral Perfumes.*I. **T**He Animal Perfume of Paracelsus.

Take Cow-dung in the month of *May* or *June*, and distil it in *Balneo*; and the water thereof will be an excellent perfume, and have the scent of Amber-grise.

II. *Lard muskified a great perfume.*

Take Hogs lard very pure one drachm, Musk, Civet, of each half a drachm, mix them well for boxes.

III. *The Mineral Perfume of Antimony.*

Dissolve Antimony in oil of Flints, Crystal, or Sand, coagulate the solution into a red mass, put thereon Spirit of Urine, and digest till the Spirit is tinged; pour it off, and put on more, till all the Tincture is extracted; put all the Tinctures together, and evaporate the Spirit of Urine in *Balneo*; and there will remain a blood-red liquor at bottom; upon which put Spirit of Wine, and you shall extract a very pure Tincture smelling like Garlick: digest it a month, and it will smell like Balm; digest it a while longer, and it will smell like Musk or Ambergrise.

Besides being a perfume, it is an excellent sudorifick, and cures the Plague, Fevers, *Lues Venerca*, &c.

IV. *After the same manner you may make as substantial a perfume of Sulphur or Brimstone. The making of the oil of Flints, we have taught at the seven and fiftieth Section of the nine and twentieth Chapter of the third Book.*

C H A P. XXI.

Of the Adulteration of Musk, Civet and Ambergrise.

B*Y reason that these choice Perfumes are often adulterated or counterfeited, we shall do our endeavour to discover the cheat, lest any being deceived thereby should suffer loss.*

I. *Musk is often adulterated by mixing Nutmegs, Mace, Cinnamon, Cloves, Spicknard of each alike in a fine or impalpable powder with warm blood of Pidgeons, and then dryed in the Sun, then beaten again, and moistened with Musk-water, drying and repeating the same work eight or ten times; adding at last a quarter part of pure Musk by moistning and mixing with Musk-water; then dividing the mass into several parts, and rouling them in the hair of a Goat, which grows under his tail.*

II. *Others adulterate it thus: By filling the Musk-cods with Goats blood, and a little toasted bread, mixed with a quarter part of Musk, well beaten together. The cheat is discerned by the brightness of the Goats blood.*

III. *Or thus, Take Storax, Labdanum, powder of Xylo-aloes, of each four ounces, Musk and Civet of each half an ounce, mix all together with Rose-water. The cheat is discerned, by its easie dissolving in water and its different colour and scent.*

IV. *Or thus, Take Goats blood, powder of Angelica roots, Musk, of each alike, make a mixture.*

V. *To adulterate Civet: Mix with it the Gall of an Ox, and Storax liquefied and washed: or you may adulterate it by the addition of Honey of Crete.*

VI. *To*

VI. *To restore the lost scent to Musk, or Ambergrise.*

This is done, by hanging it some time in a Jakes or house of Office: for by these ill scents its innate vertue and odour is excited and revived.

C H A P. XXII.

Of the way of Perfuming Cloth, Skins, Gloves and the like.

I. *To Perfume Skins or Gloves.*

T Put a little Civet thereon here and there, (if Gloves, along the seams) then wash in Rose or musked water four or five times, or so long as that they savour no more of the leather, pressing them hard every time; then lay them in a platter, covered with the said water, mixed with powder of Cypress, a day or two; take them out, press them and dry them in the shadow: being half dry, besmear them a little with Civet mix'd with oyl of Jasemin or Ben, on the inward side chafing them with your hands before a fire, till you think that the Civet hath pierced or gone through the leather; leaving them so a day or more; then rub with a Cloth that the Gloves or Leather may grow soft; leaving them so till they are almost dry, being drawn and stretched out; then hold them over some burning Perfume to dry, and wetting them again with Musk-water, do thus twenty times; lastly, take Musk and Ambergrise a sufficient quantity, which mix with oyl of Jasemin, Benjamin or Ben, dissolve at the fire with a little perfumed water, with which (with a pencil) strike the Gloves or Leather over on the outside; besmearing the seams with Civet; lastly lay them for six or eight days between

tween two mattresses, so will the Skins or Gloves be excellently perfumed.

II. *Another way very excellent.*

Take three pints of Wine, Sheeps suet or fat one pound, boil them together in a vessel close covered, this done, wash the Grease six or seven times well with fair water, then boil it again in White-wine and Rose-water of each one pound and a half, with a small fire, till the half be consumed: then take the said grease, to which put pulp of sweet Navews roasted half a pound, boil all in Rose-water half an hour, then strain it, and beat it in a mortar, with a little oil of Jasemin and Musk, with which besmear your Gloves (after due washing as aforesaid) rubbing it well in by the fire.

III. *Another way for Gloves.*

Wash new Corduban Gloves, wash them well three or four days (once a day) in good muskified White-wine, pressing and smoothing them well; lastly, wash them in musked water, letting them lye therein for a day, then dry them with care. This done, steep Musk, Amber, Basil of each one drachm in a quart of sweet water, in which dissolve Gum Tragacanth three drachms, boil all gently together, and in the boiling add Zibet one scruple, with which besmear the Gloves, rubbing and chafing it in, then drying them according to Art.

IV. *Or thus,* First wash the Gloves or Skins in white-Wine, then dry them in the shade; then wash them in sweet water, mixed with oil of Cloves, and Labdanum, of each alike: lastly, take Musk, Civet, Ambergrise of each the quantity of six grains, oil of Musk half a drachm, mucilage of Gum Tragacanth fifteen grains, mix them well together in a mortar, which chafe into the wash'd Gloves before the fire.

V. *Or*

V. *Or thus.* Take Damask Rose-water muskified, *q. s.* put it into a pewter or Earthen dish, and lay the Gloves in it one night and day, with a little turning now and then, and that they may be thoroughly wet; then take them out; and dry them carefully. Take Cloves an ounce and half, in fine powder; mix it with the same water, and lay it upon the Gloves, wetting them thoroughly, and dry them as before: Take oyl of Ben or of Almonds an ounce; Musk half a drachm: Ambergrise a scruple, grind all well together upon a stone, with a few drops of the former water, with which anoint the seams, and chafe it into the Leather; laying many pairs one upon another, for some time, till they are thoroughly soaked, and then keep them carefully from the Air.

VI. *Or thus.* Take oyl of sweet Almonds, or of Ben, which is better, 2 ounces: Musk 2 drachms: Ambergrise half a drachm: Oyl of Cloves Chemicall a drachm and half: Grind all well together upon a Porphyry (the Musk and Amber being first in fine powder;) then digest two months, and keep it for use: Take Damask Rose-water Muskified, and wet your Gloves therewith very well upon a board, then dry them; do this three or four times, and at last anoint them with the former Oyl; Keeping them as the former, with this oyl, you may anoint your hands, it will not only perfume them, but also make them soft and smooth.

VII. *Or thus.* Take oyl of Cloves two ounces: Styrax Calamita, one ounce: Benjamin half an ounce Cinnamon three drachms: Musk half a drachm: Ambergrise a scruple: sweet marjoram, Time, of each 15 grains, mix and grind them on a Porphyry, to be used as the former Oyl, after

after washing of the Gloves in Damask Rose-water.

VIII. *Or thus.* Take Musk two drachms: Ambergrise one drachm: Civet twelve, grains; mix them together well: then add Gum Tragacanth dissolved in Damask Rose-water Muskified: grind all upon a stone till they are very fine and fully mixed; then lay it upon your Gloves with a brush, being first washt in this following water. *Take lye of wood-ashes a pint and half: the yellow of a dozen Oranges: Brasit and yellow Sanders in powder, of each an ounce; Alum a small quantity: boyl to the Consumption of a third part, strain, and with a clean cloth or brush wash over your Gloves (being first washt in rain water from their Alum and Eggs) to colour them, four times; then being dry, apply to them the former Oyl.*

IX. *Or thus.* Take Musk a drachm: Ambergrise half a drachm, Civet 6 grains, grind them on a stone with Oyl of Limons, or with equal parts of Oyl of Limons, Sassafras and Rhodium; with which your Gloves (being washt as in the former section) are to be perfumed by anointing them with a small brush.

X. *Cloths, Linnen or Woollen, Coffers, Trunks and the like, are best perfumed (with little cost) with the smoak of burning Perfumes, after which you may sprinkle them often with Damask Rose water Muskified, and anoint the Corners and closures of the boards with some of the former Oyls.*

CHAP. XXIII.

Of making various sorts of Ink.

I. **T**O make good black writing Ink.

Take ponderous galls three ounces in powder, White-wine, or in place thereof rain-water, which is better, three pound, infuse them in the Sun or in a gentle heat two days: then take Roman Vitriol well coloured and powdered, which put therein, and set all in the Sun for two days more; shake all together, to which add of good Gum Arabick in little bits two drachms with a little white Sugar, which dissolve over a gentle fire. But some put in Gum Arabick an ounce.

II. *To make red writing Ink.*

Take Raspings of Brazil one ounce, white lead, Alom, of each two drachms, grind and mingle them, infuse them in Urine one pound, with gum Arabick two scruples, or a drachm at most.

III. *Another way to make red Ink.*

Take Wine-vinegar two pound, Raspings of Brazil two ounces, Alom half an ounce, infuse all ten days; then gently boil, to which add gum Arabick five drachms, dissolve the Gum, strain, and keep it for use.

Note. 2 drachms of the Gum in some cases may be enough.

IV. *To make green Ink to write with.*

Make fine Verdigrise into paste with strong Vinegar, and infusion of green galls, in which a little Gum Arabick hath been dissolved, let it dry, and when you would write with it, temper it with infusion of green Galls aforesaid.

V. *Another way to make green Ink to write with.*

Dissolve Verdigrise in Vinegar, then strain it, and
grind

grind it with a little Honey and mucilage of Gum Tragacanth, upon a porphyry stone.

VI. *To make blew Ink to write with.*

Grind Indico with Honey mixed with glair of Eggs or glew-water, made of Ising-glass dissolved in water, and strained.

VII. *To make red writing Ink of Vermilion.*

Grind *Vermilion* well upon a porphyry stone, with common water; dry it and put it into a glass vessel, to which put Urine, shake all together, let it settle, then pour off the Urine; and putting on more Urine, repeat this work eight or ten times, so will the *Vermilion* be well cleansed; to which put glair of Eggs to swim on it above a fingers breadth, stir them together, and setting abstract the glair: then put on more glair of Eggs, repeating the same work eight or ten times also, to take away the scent of the Urine: lastly, mix it with fresh glair, and keep it in a glass-vessel close stop'd for use. When you use it, mix it with water or vinegar.

VIII. *To make Printers black.*

This is made by mingling Lamp-black with liquid Varnish, and boiling it a little, which you may make thick at pleasure. You must make it moister in Winter, than in Summer; and note that the thicker Ink makes the fairer letter.

If it be too thick, you must put in more Linseed oil, or oil of Walnuts, so may you make it thicker or thinner at pleasure.

IX. *To make red Printing Ink.*

Grind *Vermilion* very well with the aforesaid liquid Varnish or Linseed oil.

X. *To make green Printing Ink.*

Grind Spanish green with the said Varnish or Linseed oil as aforesaid: And after the same manner, may
you

you make Printers blew, by grinding Azure with the said Linseed oil.

C H A P. XXIV.

Of making Sealing Wax, and Glems.

I. **T**O make red soft Wax.

Take white Bees-wax one pound, Turpentine three ounces, Vermilion in powder well ground, oil Olive, of each one ounce, melt the wax and Turpentine; let it cool a little, then add the rest, beating them well together.

II. *To do the same otherwise.*

This is done by taking away the Vermilion, and adding instead thereof red Lead three ounces, to the former things.

III. *To make green Wax.*

Take Wax one pound, Turpentine three ounces, Verdigrise ground, Oil olive of each one ounce, complete the work by the first Section.

IV. *To make black Wax.*

Take Bees-Wax one pound, Turpentine three ounces, black earth, Oil Olive of each one ounce, mix and make Wax as aforesaid.

V. *To make Wax perfumed.*

This is done by mixing with the Oil Olive aforesaid, Musk, Ambergrise, or any other eminent Perfume, as oil of Cinamon, *adeps Rosarum*, or the like one drachm, more or less, according as you intend to have its scent extended.

VI. After the same manner you may make soft wax of all colours, having what scent you please; by mixing the scent intended, with the Oil Olive,

and putting the colour in, in place of the Vermilion.

VII. *To make hard Sealing-Wax.*

Take pure fine Gum-lack, melt it in an Earthen vessel, and put into it a sufficient quantity of the Colour you design your wax to be of, stir and mingle it well, then take it off the fire, and when it is of a fit heat, you may make it up into Rouls or sticks.

To make Red wax, you must colour it with Vermilion.

Blew wax with Blew bice, Smalt, or Ultramarine. *Green wax*, with Green Bice, Verdigrise, or some other mixture of that Colour. *Black wax*, with Ivory or Cherry stone black. *Purple wax*, or *of a dark Red*, with prepared Caput Mortuum, Indian Lake, &c.

VIII. *To make Mouth Glem.*

Dissolve Ising-glass in fair water in a Gentle Balneo, then strain it through a wide hair sieve, whilst it is hot, upon another Course and close hair sieve: when it is cold it will be thick like Gelly: cut it into long handfom pieces, which put on a string, so that they touch not one another, and hang them in the Sun till they are dry. You may give it a fine tast and smell, by mixing sweet and odoriferous things with it.

IX. *Another kind of strong Glem for Pipes and Aqueducts.*

Tobaco pipe clay, dried and reduced to powder, and mixt with good store of short flocks, and beat up with Linseed Oyl to a stiff Paste, like kneaded Dough, makes a strong and lasting Cement for Pipes, and Aqueducts: And being made into Pipes (though long a drying) is very stanch and lasting.

X. *To make a very strong Glem.*

Soak the finest Ichthyocolla (that is Ising-glass) 24 hours; in Spirit of Wine, or common Brandy: then boyl all very gently together, continually stirring

ring of it, that it burn not, so long till it becomes one liquor or body (save some strings not very dissolvable) which strain whilst hot, through a course linnen cloth, into a vessel where it may be kept close stopt: a gentle heat will melt this Glew into a transparent liquor, with which you may glew things so strongly together, that they will rather break in any other part, than in the place glewed: it much exceeds the common Glew.

C H A P. XXV.

Of the various ways of making Artificial Pearls.

I. **T** *He first way.* Dissolve mother of Pearl in spirit of Vinegar, then precipitate it with oil of Sulphur *per Campanam* (not with *Oleum Tartari*, for that takes away the splendor) which adds a lusture to it; dry the precipitate, and mix it with whites of Eggs of which mass you may make Pearls, of what largeness you please, which before they be dry, bore through with a silver Wire, so will you have pearls scarcely to be discerned from those which are truly natural.

II. *The second way.* Take Chalk, put it into the fire, letting it lye till it breaks; grind it impalpable, and mix it with whites of eggs, of which form pearls, boring them as aforesaid; dry them, then wet and cover them with leaf-silver.

III. *The third way.* Take prepared Crabs-eyes ground into impalpable powder, and with glair make Pearls; which bore, as aforesaid; dry them; and boil them in Cows milk; then in the shade (free from dust) dry them well; they will please.

IV. *The fourth way.* Take Potters earth, and make
G g 2
them

them of what form you please ; dry them in the Sun, or in the gentle heat of a furnace ; then wet them with glair of eggs, lightly coloured with Bole-Armoniack, and cover them with leaves of silver, being first wet with water : when they are dry, polish them with a tooth, and they will be Oriental. Then take bits of Parchment, and wash them in warm water, till the water grows somewhat thick, boil and strain it, and use it warm : then fasten each pearl through its hole upon a fine piece of wire, and plunge them into the water of Parchment, taking them out again ; then turn them round, that the glewy liquor may equally cover them ; thus the silver whiteness will the better shine through, so that the pearls will seem to be truly natural, and being compared, will rather exceed.

V. *The fifth way.* Calcine Muscle and snail shells in a Crucible, till they are very white, even as snow ; with glair make Pearls, which bore by the first Section, dry them in the Sun ; dip them in red wine, dry them again, and they will be fair.

VI. *The sixth way.* Take *Sublimate* two ounces, *Tinglass* one ounce, mix them, and sublime them together, and you will have a sublimate not inferiour to the best orient Pearls in the world, of which with Glair you may form what you please.

VII. *The seventh way.* Take any of the aforesaid particulars, and mix them (instead of Glair) with ground Varnish, (made of gum *Anima*, and the *Alcool* of wine) of which make pearls ; these will in all respects be like the natural ; for these will no more dissolve in water, than the truly natural ; which all those that are made of Glair of Eggs are unavoidably subject to.

VIII. *The eighth way.* After dissolution, precipitation, edulcoration, siccation and formation, put the
pearls

pearls into a loaf of bread, and bake it in the Oven with other bread, so long till the loaf is much burnt, then take them out, and wash them, first in good juice of Limons, then in clear Spring-water; and they will be as fair as the truly natural. Or after baking, give them to Pidgeons to eat, keeping them close up, and in the dung you will find the pearl exceeding fair: where note, you must give the Pidgeons nothing to eat in three days time.

IX. *The ninth way.* After dissolution of small oriental pearls in juice of Limons, make the form thereof with clarified honey, moistning your hand with *Aqua Mellis*; this done, perfect them as before.

X. *The tenth way.* Take filtrated juice of Limons, powder of pearl, of each six ounces, *Talk* one ounce, put them into a glass, and stop it close, set it fifteen days in horse-dung, and it will be a white paste; of which form pearls, bore them, and dry them in the Sun; at last in paste of barley meal (*viz.* a barley loaf) four fingers thick, stick the pearl, so that they may not touch, stop the holes, and cover them with paste; set it into an Oven & bake it with bread, & you will find them hard & clear.

XI. *The eleventh way.* Having formed them of the matter intended, bored and dryed them, put them into Quicksilver, set over a glowing heat, stirring them well about, that the Quicksilver may stick to them; then dip them into glair of Eggs, upon a glowing heat, and they are done; or being dry, boil them in Linseed oil, and wash them in warm water.

XII. *The twelfth way.* Take pearl three ounces, prepared Salt one ounce, filtrated juice of Limons, so much as will cover them four fingers breadth: let it stand so long till it be a paste; the glass being very close stopped, shake all together five or six times a day; and when it comes to paste, put it into a glass with strong

spirit of Vinegar, lute another glass over it; digest it three weeks in a cool place under the earth, so long till all be dissolved, then mix it with a little oil of eggs, or snail-water, till it be like pearl in colour; then put this paste into silver molds and close them up for eight days; after which take them out, and bore them by the first Section, and put them again into the mould for eight days; this done boil them in a silver porringer with milk; lastly, dry them upon a plate, in a warm place, where neither wind nor dust may come, and they will be much fairer than any oriental pearl.

XIII. *The thirteenth way.* After the preparation of the matter in juice of Limons, or *Aqua fortis*, with clean hands make them into paste, and wash them in distilled water, which put into edulcorate calx of silver, and digest in Horse-dung for a month, so will they be fair and very oriental.

XIV. *The fourteenth way.* Dissolve the matter in *Aqua fortis* (which let over-top it a fingers breadth) in a glass gourd, till all be incorporated into one body, which put into silver moulds, which have holes through them, and having stood one day, bore them through the holes, as they lye in the mould with a silver needle: being quite dry, take them out, put them into a glass close covered in the Sun, till they be quite dry; then put them upon a silver wire; and let them lye covered in their own fat, (that is, that fatty substance; which swims on the top of the menstruum in their dissolution) so long till they are very fair, then being strung, put them into a glass egg, and let them stand nine days in digestion, and they will be as fair as the natural.

XV. *The fifteenth way.* Take Tobaccopipe clay, of which form little beads (by *Sect. 14.*) dry them in the Sun, and burn them in a Potters furnace, then
cover

cover them with Bole-Armoniack, tempered with whites of Eggs; being dry, dip them in water, lay on leaf silver, which dry again, and polish them with a tooth: then take clean shavings of parchment, cut small and washed well with warm water; boil them in a new pot, with a slow fire till they become somewhat thick, strain it, and being warm, put in the pearl upon a needle or fine wire, that the hole may not be stopped, take them out, turn them round, that the water or glew may not settle in one place, dipping them so often (drying them every time) till they be thick enough; and they will appear full as fair as the truly natural.

XVI. *The sixteenth way.* Take the impalpable and snow-white calx of Talk, and with our best Varnish make a paste; of which form pearls, and bore them with a silver wire, on which let them dry: this done, make a mixture of the Alchool of the incomparably pure red diaphoretick, Mercury, calx of talk aforesaid, shell gold and silver (in *Lib. II. Chap. 21. Sect. 1.*) in a just and due proportion (as by many tryals you may find out) in which roul your pearls till they be all over perfectly covered, then varnish them with our aforesaid varnish, which let dry according to Art, and if need be, polish with the impalpable powder of Putty and water.

XVII. *The seventeenth way.* Take Mercury and the finest Pewter, of each one pound; make an Amalgama, which wash so well, till the blackness is gone, make it into little Cakes, and lay them on a Marble Stone: then take Mercury sublimate two pounds in very fine powder, and strew it upon the Cakes; put them on a Glass dish, and set them in a very moist Cellar to dissolve into an Oyl, which rectifie by a Glass Helm in *Balneo Marie*, and so there

will be drawn off by a gentle fire a Mercurial water. Then Take of the best small oriental pearls, one ounce; put them into the Mercurial water; and in two or three days they will be reduced to a paste, which in a silver Mould, you may form into Pearls of what bigness you please. At the same time you must hole them with a Silver Wire. Then put them when they are moulded into a new Crucible, but so that they touch not one another; the top of the Crucible being well covered and luted close; so set them in a Glass-makers annealing furnace, till they be very hard which will be in a little time. Afterwards make a Pye of flower, let it be very thick, and take the hardned Pearls, putting them on a Silver wire, and so fix them in the Pye, that they touch not any part of it, nor one another. Lastly put the Pye, made close up, into an Oven of bakers household Bread, and let the Pye stand all the time that the Bread is baking; after which you will find the Pearls to be as well coloured as the best Oriental.

C H A P. XXVI.

A brief discourse of Alchymy, and first of Metals in General.

I. **T**HE Mineral Kingdom is divided into *Metals, Semi-metals, Salts and Stones.*

II. Metals are in number seven, *viz. Saturn, Jupiter, Mars, Sol, Venus Mercury and Luna*, called by the Vulgar, Lead, Tin, Iron, Gold, Copper, Quick-silver and Silver.

III. The Semi-metals are *Antimony, Tin-glass Cinnaber and Zink,*

IV. The

IV. The Salts are chiefly Vitriol, Sulphur, Arsenick, Alum, Nitre, Borax and Salt.

V. The chief stones are *Lapis Calaminaris*, *Tutia*, *Lazuli*, and Lime stone.

VI. Now out of these the *Alchymist* designs one of three things, to wit, 1. Either the *Counterfeiting* of the fine Metals. 2. Or the *separation* of fine Metals out of the base: or, 3. The *Generation* of the fine Metals out of the base, by *transmutation*.

VII. The *counterfeiting* of the fine Metals, is done by giving the colour, and body, of a fine Metal to that which is base; as the tinging of Lead into a Gold Colour; the whitening of Copper; the reduction of Mercury or Quicksilver.

VIII. The *Separation* of fine Metals out of base, is done by attracting of the particles or atoms of the fine (contained in that baser) into one heap or mass, that they might not be carried away by the wings of the Volatile or baser Metal.

Thus it appears, there is a large quantity of Gold, in Lead, Tin, Copper and Silver: and much Silver in Tin, Copper, and Iron: the proof of this is manifest by the parting Say (as they call it) to wit the test by strong waters; by which you may find that one pound of Lead will yield near three or four penny weight of silver, and one of Gold: One pound of Tin will yield something above an ounce of Silver; and about two penny weight of Gold or more; One pound of Silver will yield about one ounce of Gold; and Copper about a quarter of the same quantity or more, &c. but this is according to the goodness of the Metals, and the skill of the undertaker; for by this way of Separation, what is gotten will never pay the cost, it remains therefore, that we search out some way more profitable, the which in the following lines, to the true sons of Art, we shall faithfully present according to the best of

our knowledge: But we are bound to be a little the more obscure, for the sakes of some ingrateful men by whom we know our just meaning will be traduced; our skill in Art abused; and our person sought to be rent and destroyed, should we but adventure to be so open, as to give them the clear knowledge thereof. Let others search as we have done, it is some satisfaction, that the matter here sought, is really in rerum natura; the which joined to the certainty of anothers attaining thereof, may give life to future hopes, which as the precursor of better things may point at the great work it self.

IX. The matter of transmutation is done by that great powder, tincture, Elixir, or stone of the Philosophers, which according to the opinion of *Paracelsus*, and others the most learned, we shall signifie in few words.

By this tincture or Elixir according to the judgement of Philosophers the whole body of any Metal (being separated from its impurity) is changed into fine Gold.

CHAP. XXVII.

Of Saturn, or Lead.

I. **S**aturn is a cold, gross, dull and heavy body, replete with much impurity, yet full of a golden feed.

Ms II. It is tinged into a pure golden colour by calcination thereof with Antimony, and imbibing the calx thereof with the spirit of *Venus*, *lapis calaminaris*, *tutia*, and *Zink*, severally prepared, and mixt *ana*, and then reduced, adjoyning to every ounce of Lead in calx a penny weight of the golden sulphur of *Venus*.

III. Its

III. Its *Lunar property* is extracted, by a simple calcination with *Arsenick* and *Niter, ana*, and imbibition of the said *calx* for about seven days in the *Oil of Salt*.

IV. Or thus, Take of our Seed or Salt of *Luna* one ounce, of the Salt of *Venus* one ounce and a half; of the crude body of *Saturn* one ounce, mix, and melt them; then separate, and you shall have the *Saturnian Luna*, with considerable advantage.

V. Take Lead beaten into thin Plates; and let them be put into a Glass Vessel, together with common Salt and Mercury: Let it be well closed together, and digested in the Earth or Horse-dung, for ten whole Months; and it will be converted into Quicksilver.

shows how to make Quick-silver

VI. Take Lead purified a pound, *Sal armoniack* two ounces in powder, *Sal Niter* in powder one ounce, *Sal Elebrot* bruised, half an ounce: Put all into a Crucible on a violent hot Fire, for two whole hours; then take it out, and it will be prepared for the Silver work.

Receipts

VII. Or thus, Get an earthen Pot, whose bottom is full of holes, put it into another Pot, and let it be covered in a small Pit: dig up the Earth thereon on every side, and tread it down with your Foot: Fill the upper void place with unslaked Lime, to the middle: then take Lead cut into thin little bits, and lay it upon the Lime; and over the Lead more Quicklime: put upon it boyl'd Urine, cover the Pot and lute it well; make a great Fire on every side, heaping it up even over the top, and continue it so for a day; so shall a purified Lead fall through the Lime and Holes into the lower Vessel, which will be prepared for transmutation.

how to purify Lead

VIII. Or Lead may be thus purified. Melt your Lead

Lead often, and cast it into the sharpest Vinegar: Melt it again, and cast it into juyce of Cellandine: then into salt-Water: then into Vinegar, in which Sal Armoniack has been dissolved: And lastly, let it be poured out into the Cupel, and so it will be very well purified.

Propertius IX. Take Spring-water, Vitriol, of each a pound; mix them together: filter through brown Paper, and distil the Water off in a Glas Alembick, which keep in a Glas for use. Take Quicksilver an ounce: put it into a Crucible over the Fire; and when it begins to be hot, add purified Leaf gold an ounce: and so remove it from the Fire: then take of your purified Lead, one pound, amalgamate it with the aforesaid mixture of Quicksilver and Gold, over a gentle Fire, stirring it with an Iron Rod: being well mixed, put thereto an ounce of the former Vitriol Water, stir, digest a Month, evaporate, and you have a Medicine in order to transmutation.

X. *The preparation of Saturn.* Set ti in a Furnace of Calcination, stirring it while in flux, as you do *Jupiter*, till it be converted into Ashes: sift this, and set it again in a Fire of Calcination, till its fugitive and inflammable substance is gone: then take this red Calx, imbibe and grind often with common Salt cleansed, Vitriol purified and sharp Vinegar: this matter often imbibe, dry and grind, till all its uncleanness be wholly removed: this done, add Glas ground to powder, mix them well together, and make them flow in a Crucible. Calcine it again with pure Sal Armoniack, and most subtly grind and dissolve it into a clear Water upon a Porphyry Stone in the open Air, in a cold and moist place; augmenting the Salt if need be. This is the Preparation of the Ferment of Lead for the Red Elixir.

CHAP.

*Mercury Column
Matter*

C H A P. XXVII.

Of Jupiter or Tin.

I. **J**upiter is much a more noble body than *Saturn*, and (as we said before) abounds much more with a *Solar* and *Lunar* seed.

II. It is reduced into the *Imitation* of silver by often melting of it, and quenching of it in the spirit of *Arsenick*; or by calcination of it with *Lime* (three ounces to a pound of *Jupiter* granulated) and then by often extinguishing of the same in the spirit of *Arsenick* aforesaid.

III. The *Luna* is extracted out of it thus: Let *Jupiter* be married to our *Luna* of the same stature by the Priest *Mercury*, after which let them drink their fill of the *Mineral spirit* of the Grape; then put them to bed in the exaltation of *Luna* and house of *Venus*, and the next morning let them drink very well of the fruitful Wine of the daughter of *Luna*; this being done, you will find *Luna* like a bride coming forth out of the marriage chamber; but with the wings of an *Eagle*, which wings you must clip by the means of *Mars*, else you will lose her: Thus, take of the Seed of *Mars*, and the eldest Son of old *Saturn ana*, make them contend with *Tellus*, for three whole days and nights, till they conjoyn and beget a Son, white as *Luna*, and fixt as *Sol*. This Son will by force take *Jupiters* wife from him, and being fruitful cause her to bring forth a plentiful and profitable Issue.

IV. Or thus, Kill *Jupiter* (in conjunction with *Luna*) by the fire of *Tellus*, then revive the dead body (after

(after it is impregnated with the *Mineral spirit* of the Grape) by the help of *Saturn*, and you have a numerous off-spring of *Luna*.

V. Or thus, Marry *Jupiter* to *Luna*; then marry him to her daughter, and join these issues together, and they will sympathetically attract and join all the seed of *Luna* into one family or lump.

VI. Or thus. Which is both the best and easiest way. Take *Jupiter* and melt him, then quench him ten times in the *spirit* of *Tellus*, till he is reduced very small and low: this done, join him with the *Daughter* of *Luna* calcined with *Tellus*, and the work is over. This is very profitable, and the most useful of all, but by reason of the unworthiness of this generation, it cannot admit of any explication.

VII. The Gold is thus extracted: marry *Jupiter* to *Venus*, and their off-spring to *Sol* by the means of Priest *Mercury*; put them to bed (in the life of *Phoebus*) for three whole days and nights, afterwards make them drunk with the spirit of the daughter of *Venus*, then make a perfect conjunction with the eldest Son of *Saturn*, and you shall have what you sought.

VIII. Or thus, Calcine *Jupiter* granulated one pound, with *Quick-lime* four ounces, mix all with the *Calx* of *Venus* and *Luna ana*; calcine again for three days, imbibe in the spirit of *Venus* (that is, the fixed oil) for seven days, then reduce to a *regulus* with *Saturn*, and afterwards separate with *Antimony*.

IX. The preparation of *Jupiter*. Melt *Jupiter*, and continually stir it with an Iron rake, till it is brought to Ashes. These Ashes sift, calcine them again, adding fire not exceeding the Fire of its fusion, and stir it often, calcining it for 24 hours, till all its superfluous humidity be wasted: then well wash it with purified common Salt and Alum; and most sharp
Vinegar,

Vinegar, and dry it; grind again, and wash and dry, doing thus so often, till by the acuity of the Salts, Alum, and Vinegar, its whole humidity blackness, and filth is done away and consumed. Add to it Glass in powder, mix, and with a sufficient fire make it flow in a Crucible, having a hole in its bottom, set within another, and the pure clean body will descend; the whole Earthly feculent substance remaining above with the Salts and Glass: for in that body reduced and descended is an equal and perfect proportion of pure Argent Vive, and white Sulphur not burning; because fire and the Corrosives, have divided the whole humidity, and fugitive Inflammable corrupt and black substance: and through that descensory the whole feculent substance is compleatly separated. Afterwards calcine this pure reduced body again, with pure and clean Sal-Armoniack, until it be in weight nearly equal: being well and perfectly calcined, grind the whole well upon a Porphyry Stone, and put it in the open Air in a cold and humid place, or in a Glass Vessel in Horse-dung until the whole be dissolved, augmenting the Salt, if need be. This water is the ferment of Jupiter, for the White Elixir.

C H A P. XXVIII.

Of Mars, or Iron.

I. **M**ars is yet a more noble body, but harder and more replete with *scoria* or filth, yet very full of a Solar and Lunar sulphur.

II. It is converted into Copper by the Oil or Spirit of *Venus*: into brass by the means of *Lapis Calaminaris*,
and

and made to imitate Silver by impregnating its *calx* in the burning spirit of *Arsenick*.

III. It has much Silver and Gold in it, but they are extracted with great difficulty; thus, first melt the body with an equal quantity of *Tin, Lead and Copper*; this done, *granulate* it and imbibe the body with *Oil of Venus* very strong, then calcine it with the butter of *Arsenick* (if you extract its Silver,) or *Antimony* (if it's Gold) imbibe this *calx* over a gentle heat in the strongest oil of Flints or Sand for ten days: then reduce it.

IV. *Mars* is whitened by the rules which we have delivered in *Lib. 3. cap. 29. Sect. 31. 75; 76. 77.* and made of a Golden Colour by *Sect. 28. of the same Chapter.*

V. *The preparation of Mars.* Let it be calcined as *Venus* with common Salt cleansed, and let it be washed with pure Vinegar; being washed, dry it in the Sun, and when dryed, Grind and Imbibe it with new Salt and Vinegar, and then put it into the same Furnace, as we shall hereafter say of *Venus*, for three days: this calcination dissolve into a clear water, which is the water of the fixed sulphur, wonderfully augmenting the Colour of the Elixir.

VI. *Another preparation of Mars.* Grind one pound of the filings thereof, with half a pound of *Arsenick* sublimed. Imbibe the mixture with the water of Salt-peter and Sal-Alkali, reiterating this Imbibition thrice: then make it flow with a violent Fire, and you will have your Iron White; Repeat this work till it flow sufficiently, with peculiar dealbation.

VII. Take of the *Calx* of *Mars* made into a Paste with Mercury 2 pounds: of *Venus* 4 pounds: of *Saturn* 4 pounds: mix these without ferment, and boyl

boyl the mixture for seven days, and you will find the whole dry. Fix it and put it (together with half its weight of Litharge beaten into powder) into a reducing furnace, and you will find a body of great profit.

C H A P. XXX.

Of Sol, or Gold.

I. **S**ol is the purest of all Metals, and the very perfection of the Mineral kingdom, at the which, all our pains, labours and endeavours aim.

II. This *Gold* of it self is dead and without force or power; but being quickned, and enlivened, it has an inward *seminating* or *germinating* property, which being raised and brought forth by its *innate life* (till now lockt up) can dilate it self (*having a fitting womb to receive it*) into an hundred times its own quantity; and thereby *transmute* or *change* the Mercurial property (which is indeed immature Gold) of all Metals into its own nature and kind.

III. This *immaturate Gold* in the bodies of all Metals would have come to perfection of its own accord, had it been ennobled with a *sufficient life and heat*, to have caused such a natural *fermentation and excretion* of the abounding filth and dross, in which the so small particles and Atoms of the Seminal golden property was latent, or buried.

IV. The quickning of the inward life of this Metal is solely done by the help of the Seed of Metals, to wit, *Mercury*, but how or after what manner we shall more plainly shew in Chap. 32.

V. *Sol is thus prepared.* Take Sol beaten into thin
 H h Plates,

Plates or rather Leaf Gold, and with them and Common Salt prepared, make Lay upon Lay in a Vessel of Calcination, which set into a furnace and calcine well for three days untill the whole be subtilly calcined; then take it out, grind it well, wash it with Vinegar, and dry it in the Sun, afterwards grind it well with half its weight of Sal-Armoniack, cleansed from its common or Sea-Salt; set it to be dissolved, until the whole (by the benefit of the Salt) be dissolved into a most clear water: this is the precious ferment for the Red Elixir, and the true body made spiritual.

VI. Take Gold, dissolve it in its own water, and decoct and prepare it, by boiling it away to a third part: then expose it to the Air, and set in Balneo or in Dung for certain days; then will it be the Oil of Gold; so will the ferment of Sol be perfect for the Red, which keep for use.

C H A P. XXXI.

Of Venus, or Copper.

- I. **V**enus is the finest of the base Metals, and contains more of a *Golden Sulphur* than them all.
- II. She is *Whitened*, and made like unto *Silver*, by calcining it with butter of the daughter of *Luna*, and *Salt of Tartar*, and then reduced by *Saturn*, and being often melted and extinguished in the said butter.
- III. Or thus, To the afore reduced *Venus*, being melted add (for an ounce of *Venus*) two penny weight of our white fixed *Mercury*.
- IV. She is made of a Golden colour by often changing

ing the *calx* (calcined with the Son of *Saturn*) in the spirit of *Antimony*, *Zink*, *Lapis Calaminaris*, and *lapis Tutia*: then reduced by being melted with a sufficient quantity of *Lapis Tutia*, and ten or twelve times melted, and quenched in the aforesaid spirit.

V. Her *Silver* is extracted as that of *Tin* by the third *Sect.* of *Chap.* 28. Or thus; Calcine her with butter of the daughter of *Luna*, to which *calx* adjoin the *calx* of *Luna ana*, and reduce with *Saturn*.

VI. Her *Gold* is extracted thus: Calcine her with the Son of *Saturn*: then calcine *Luna* with the same also: put both these calces together and calcine for three days with the *Son of Saturn* mixt with *Tellus*; to which add the *Calx* of *Sol* calcined with the same *Son of Saturn, ana*; put all together and calcine them for twenty four hours, reduce them with *Antimony*, keep them all in a melted heat for three days; then take it forth, and quench it being melted ten or twelve times in the tinging and fixing spirit of *Lapis Calaminaris*, *Antimony* and *Zink, ana*.

This is very profitable, and not difficult to perform; it may be done also (as before) without calcination.

VII. Venus is made of a silver Colour thus. Take Mercury sublimate, and a proportionable quantity of Sal-armoniack; add Vinegar, and let them boyl together: in this quench Auricalcum or Copper (being heat red hot) and it will become white like Silver.

VIII. She is made of a Gold Colour thus. Take copper, *Lapis Calaminaris*, of each half an ounce: *Lapis Tutia* 2. drachms: let the Copper be first heat red hot and extinguished 2. or 3. times in Urine: do the like with the *Lapis Calaminaris* and *Tutia*: To the Copper thus prepared add Honey half an ounce; boyl them together till the honey becomes black,

and dry : which take and beat with the Lapis Calaminaris and the Tutia, then mix all together by melting, and you have your desire.

IX. *She is whitned thus.* With purified and reduced Litharge mix sublimed Arsenick; and cast it upon Copper in fusion ; it whitens it very well.

X. *Or thus.* Mix silver and Copper together ; and upon that mixture cast the Whitning medicine. For the silver is a greater friend to Arsenick, than any other metall ; it also takes away fraction from it.

XI. *Or thus.* Upon a mixture of Venus and Luna melted cast pieces of sublimed Arsenick, and Mercury : They are better in pieces than powder, because the powder consumes and vanishes sooner, or before it can do its operation,

XII. Take Mercury precipitate, and Copper Calined, dissolve each a part in a dissolving water and mix the dissolutions together ; coagulate, and put the whitning medicine on it, and it will be exactly like Silver.

XIII. *Or thus.* Take Mercury precipitate, and Litharge, dissolve each a part : joyn these solutions in one : then take the Calx of the body you intend to whiten, dissolve it : join all these together ; coagulate, and reduce with Borax.

XIV. *Or thus.* Take Quick-silver, sublime it so often from precipitate Mercury, till it be fixed in it, and sprouts forth, put this upon melted Copper, and it will be very white.

XV. *Or thus.* Dissolve leaf silver and Litharge in a proper dissolving water : join these Solutions together ; and by these the substance of Copper will be Whitned.

XVI. *Or thus,* It is also whitned with sublimed Arsenick : Take calx of Copper, mix it with sublimed Arsenick.

Arsenick. Reiterate the sublimation, and continue it till the Arsenick stay with it: this will be the more easie and firm if a quarter part of the Calx of silver be added to the said Calx of Copper.

XVII. *Or thus*. Put the sublimed Arsenick to the silver; and then the whole upon the Copper, and it will be excellently whitened: Or mix Litharge, or Calx of Lead dissolved with silver, put this upon Arsenick; and lastly cast all this mixture on the Copper body and it will be very white.

XVIII. *To prepare Copper*. Cement very thin plates of Venus with common Salt well cleansed in a crucible, covered and well luted, for 24 hours: this cementation repeat (scraping off what is calcined) till all the plates are consumed. Grind this Calx to a most subtil powder and wash it with Vinegar, till it comes from it Colourless: imbibe it again with Salt and Vinegar, Grind, and calcine in an open Vessel for 3 days: take it out, grind, and wash well with Vinegar, dry, and add half its weight of Sal- Armoniack, grind till it is impalpable, and expose it to the Air to be dissolved, adding still fresh Sal-Armoni ck if need shall be, till the whole be made water. This is the water of the fixed sulphur of Venus.

C H A P. XXXII.

Of Mercury, or Quicksilver.

I. **M**ercury is the Seed of Metals, and pure immature Gold.

II. By this the body of *Sol* is opened thus: make an Amalgama of *Sol* and *Mercury* so long till the *Mercury* will swallow up no more: Separate and

you shall find your Gold like Earrh newly broken up: this Gold being put into the sweet oil of Salt becomes more perfectly dissolved, which being distill'd till it comes over the helm will answer your intention: but there is a more noble and excellent way of opening of the body of Gold which here we may not declare, yet in its due and convenient place shall be manifest, and that is only by the help of a perfect sweet, or rather *insipid menstruum*.

III. *To make our white Mercury*; this is only done by a simple dissolution in the aforesaid *insipid menstruum*.

By this white *Mercury*; is Copper made of a durable white, after a thousand meltings.

IV. *To make our red Mercury*; this is done by a dissolution in the spirit of *Tellus*, and then tinged by the mineral spirit of the Grape: and lastly *fixed by the green spirit of Venus*. This will perfectly unite with Gold, never more to be separated by all the Art of man.

V. Take Quicksilver 2. or 3. times purified with Sal-Armoniack and Urine; put it into a Crucible over a temperate fire; when it waxes hot, put prepared Jupiter thereon and as much and augment the fire by degrees, till the flame grows blew: make the fire then stronger, and blow a little: when you see it begins to give over smoaking, take it from the fire, and you will find your silver considerably augmented.

VI. Take Sulphur of Venus, pure, red, and fixed, but melting like wax; cast it upon purified Mercury, in a just proportion, and in a fit heat; and the Mercury will become good Gold.

VII. *To harden Quicksilver*. It is done with the fumes of either Saturn or Jupiter. Melt Jupiter, and when it begins to be cold, make holes in it, and put your Quicksilver therein, and it will be hardned; which being repeated often, will be the more firm.

VIII. Take

VIII Take Mercury and Salt-peter, ana : beat them into dust, put them into a Glass well luted, over a gentle fire for 2 hours: augment the fire, till the smoaking ceases : after the smoak comes a flame out of the neck of the Glass, and the Mercurial Sulphur remains in the bottom, as it were white and fixed. Take it out, and add to it an equall quantity of Sal-Armoniack ; beat them to a powder and mix them well : sublime, first in a moderate fire ; then in a stronger ; so continuing for 4 hours: take this sublimate, and sublime it again with its *faces* 6 times, so will the sulphur remain in the bottom of the Vessel : take it, beat it to powder, and on a Marble, let it resolve to an Oil : This is sulphur of Mercury for transmutation. M3.

IX. Take purified Quicksilver 2 ounces : leaf-silver one ounce : make an Amalgama, and let it stand 7 days, then sublime there from the silver, wash it in water clean and dry it. Take this Calx of silver and dissolve it in *Aqua fortis*, and evaporate to dryness : mix this dry Calx with Borax, and melt it into a Mass : Take of this silver and mix it with the like weight of fine Gold and you have a prepared body to be tinged of a Gold Colour : Make of this an Amalgama with ten times its weight of purified Quicksilver : abstract the silver, and you have a porous body, fit to receive the tinging medicine. M3.

X. *The ferment of ferments.* It is made for the white after this manner. Take Ferment of Luna with its Oil (at *cap.* 33. Sect. 6. and 7.) add to it twice as much Arsenick, sublimed and dissolved in its proper water : then to both these add Mercury dissolved as much as the Arsenick : mix the waters and set them over a fire for one day to be incorporated : then draw off the water by an Alembick, and Cohobate it 15. times ; so incerating, it will be fluid

fluid as fusible wax. Add as much melted Wax, commix, and project upon Mercury washed, as you desire.

XI. *The ferment of ferments for the Red.* Dissolve Sol in its own water; add to it Sulphur, dissolve it in the same water 2. parts: Mercury dissolved 3. parts: let all be truly dissolved into a most clean water, which being mixt, boyl for one day, that they may be fermented, draw off, and cohobate the water 5. times: Incerate with yellow Virgins wax, with half its weight of Oyl of blood or Oyl of Eggs: then project upon Crude Mercury, and you shall have your desire.

C H A P. XXXIII.

Of Luna, or Silver.

I. **L**una is the meanest of the fine Metals, and) as it were) *white Gold.*

But Luna differs from Gold, more than in their Colour only; *viz.* in Weight too, and that very considerably.

II. She is tinged of a *Golden Colour* by our red Mercury (calcin'd *per se* for twenty eight days in a *Pelican* or other convenient vessel, till such time as the said Mercury will endure the strongest fire) the yellow colour this Mercury gives is fixed.

III. Her Gold is exactly extracted by the method delivered in *Chap. 31. Sect. 6.*

Or thus. Take Sol, Luna, Venus, of each a like quantity; melt them together, and keep them in fusion for 7 days; then take them forth, and by the Refiners Art separate the Gold; you will find

your

your Gold (if you have been carefull in the operation) to be augmented nearly an eighth part.

IV. *Or thus.* Calcine her with the *Son of Saturn*, to which add of our *red Mercury*, ana. put all into *Oil of Salt* for ten or twelve days; heat it *red hot*, and extinguish in oil of *Flints* or *Sand* ten times; to this *calx* add of fine *Lapis Tutia* ana. reduce all and separate with *Antimony*.

V. Take *Sal-Armoniack* 2. pound; purified from its common or *Sea Salt*: pure *Vermilion* one pound: Grind them together and sublime; so will the *Vermilion* be at bottom: Grind them again together and sublime 6 or 7 times: then lay the *Vermilion* on a *Marble stone* to dissolve into water, which keep for your work. Take pieces of fresh *Vermilion* z^{ij} wet it in the former water, and afterwards in the *Glair of Eggs*: and roul it in the filings of fine silver z^{i} , so often till it has taken up all the 2 ounces of silver. Put these into a firm *Iron Pot*, which may be closed with a strong screw: put it into a furnace, give fire by degrees, and increase it *gradatim* to the highest degree, continuing it so for a philosophical month, and you will have a medicine for transmutation of *Copper* into silver, which being tryed upon the *Test* with *Lead*, will prove good at all assays.

VI. *The preparation of Luna.* Luna or silver is subtilized, or attenuated, and reduced in manner as is above said of *Sol*. Therefore in all and every part of this work, do the same in its subtilization, as you did with the *Gold*: And this water of *Luna* is the ferment for the *White Elixir*.

VII. Dissolve *Luna* in its own *Corrosive water*, which water boyl away to a third part; then expose it to the *Air*, or set it in *Balneo*, or in *Dung* for certain

certain days; so have you Oyl of Luna, and the ferment of the white perfected.

C H A P. XXXIV.

Of the secret Hermetick Mysterie, or great Philosophick Work.

WE cannot be so vain as to pretend to the world that we have attained the knowledge of this great Secret, much less so to be the Master thereof, as to be the instructor of other men: but this we can say, we have convers't with most Authors that have wrote thereof; we have with a great deal of diligence and study compared their sayings one with another; and we have by a long and continued exercise and practice in the Mineral work, found out not only the natures of Metals, and in what degrees of purity they stand in one to another; but we have also found out many excellent Secrets, of real Worth and Value, by which, although we cannot profess a knowledge of the great work it self, yet we thereby see not only a possibility, but also a probability thereof in nature (to that man whom it shall so far please God to enlighten) and therefore judge we may in some measure the better undertake to discourse the sayings of those Worthies, who having attained this Mysterie thought good in Cloudy and Mysterious terms to publish the same to the world, that none but the truly worthy Sons of Art might be partakers of the same.

In the following lines then, we shall tell you what has been told us, and what we do conceive thereof by the comparing of the sayings of the most excellent men together, such as were Paracelsus, Basil, Lullius, Ripley, Bacon, and others; and this in so concise a manner, that the opinions and judgments

ments of all those men (though far asunder in words) may center not only in truth it self, but also in the narrow compass of the following Sections; the which that we might so perform, we express our conceptions of their sense in a language consonant thereto.

I. The seed of Gold is lodged in all Metals.

This is apparent from their generation, whose origination is *Mercury*, which is indeed immature Gold; and so remains immature in the baser Metals till a ripening and meliorating spirit quickens that seminal property lodged in the womb of impurity.

II. This seed of Gold may be quickned or made to live.

This is done through the death of the first matter, and disposition of the second to a resurrection or resurrection of that innate, energetical, and seminal life, and that only by the spirit of *Tellus*.

III. This semen being quickned, dilates it self into other bodies, and transmutes them into its own property.

That is, just as the seminal life of Vegetables transmutes or changes that succus or humidity of the Earth proper to themselves into their own forms and natures; and so of a little seed there becomes a great tree; so that as the Earth is the womb out of which so small a seed becomes a great tree, by the transmuting property of the innate seminal life in the seed: so all the base Metals are the womb unto that seminal purity: in which womb if the seed be disposed rightly, there will be as certain a generation and encrease; and the purity of the base Metals will be transmuted into that seminal property to a vast augmentation.

IV. That

IV. *That this may be rightly done, the bodies of the base Metals must be opened and prepared.*

That is, they must be brought into a mortification, that that strong band which has hitherto chained the *seminal life*, may be broken, and so the *energetick vertue* may be set at liberty: this is performed by the *flying dragon* who devours all that he comes near: this being done, the *semen* must be cast into this mortified body (impregnated with the spirit of *Tellus*) that it may there generate, transmute and fix.

V. *This may be done in any of the base Metals: but they (like the Earth) yield an encrease according to their degrees in purity; so that more of the body of a pure Metal is transmuted, than of an impure.*

As barren Earth cannot yield so great an encrease as a fertile soil; so neither can a base Metal yield so great an augmentation as a more fine.

VI. *The bodies of the baser Metals being fitted, the semen must be cast into the same to generate.*

That is, there is to be a conjunction of the *semen* or true *Golden essence* with the prepared body to be transmuted: now you must be careful you use not the simple body of any Metal for this *semen*, for then you will be deceived; the matter in which the generative spirit is lodged is another thing: if you bury a whole tree or plant in the Earth, that will not generate, and bring forth another tree, but perish and rot, the seminal or generative vertue and life is clog'd and loaded, and so is ineffective; but if you bury the seed of the same tree, you may have another or more according to the quantity of seed sown; the same you must understand in the generation of Metals, and of the Golden work; it is not Gold which will generate Gold, but the seed of Gold.

VII. *This*

VII. *This semen must be Volatile.*

Otherwise it cannot *transmute*, for nothing but a *Volatile* spirit or essence can dilate and spread it self: a *fixed* matter cannot operate at all, for all *fixed* things are dead, and their life remains in a central state, not fit for *coaction*. This is evident in the *Volatile* Salts of *Vinegar* and *Quick-lime*, which surpass the Art of man to attain simple; but if you mix a *Lixivium* of *Quick-lime* with *Vinegar*, you may have a large quantity of Salt, and that *fixed*, which was before unattainable. Thus you see out of two *Volatile* things, a third absolutely fixed is produced; and this is the condition of this great work.

VIII. *It must be of an unchangeable blood-red colour.*

Otherwise it could not tinge; for were it only yellow, it would create only a faintish kind of green: but this our Philosophick tincture generates Gold of the highest and purest nature, and having the deepest yellow.

IX. *This Semen is made Volatile by the destruction of its external form.*

That is, nature must be brought to action, that the inactive body may let fall its *Semen*, out of which the Golden tree of the Philosophers is produced.

X. *This Semen is made blood-red by impregnating of it with the spirit of Tellus.*

It is necessary that there be a common band to conjoin the bodies, which are to be united: as the bodies of the base Metals which are the womb for this seed are to be mortified; so must that body be, out of which you extract the *Semen*, and as that mortified and prepared body is to be impregnated with the spirit of *Tellus*; so must this *Semen*, that there may be as well a sympathy and likeness in nature, as an unity in body.

XI. *The*

XI. *The matter out of which this Semen is to be extracted is Mercury or Gold.*

We mean simply, and without Metaphor, Quick-silver and Gold; for if there be an innate life, power and vertue, in the base Metals, why not in these? if Lead, Tin, Iron, Copper and Silver, contain the Seminal life of Gold, why should *Mercury* or Gold be excluded, which are the thing it self?

XII. *The Semen being cast into the body prepared for it, is there to be digested, till both be perfectly united, whose simple conjunction is the product of the Golden kingdom.*

This digestion is perfected only by the force of an external fire, conjoined with the inward Seminal life.

C H A P. XXXV.

A Rational Demonstration of Chiromantical signatures.

I. **T**He foundation of Chiromancy depends upon the true appropriation of the several mounts, fingers, or places in the hand to their proper Stars or Planets.

II. The Antients have assigned the root of the middle-finger to *Saturn*; of the fore-finger to *Jupiter*; of the hollow of the hand to *Mars*: the root of the Ring-finger to *Sol*: of the Thumb to *Venus*: of the little-finger to *Mercury*: and lastly the brawn of the Hand near the Wrist to *Luna*.

III. That line which comes round the ball of the thumb towards the root or mount of *Jupiter* is called *Linea Jovialis* or the life-line: that from the wrist to the root or mount of *Saturn*, *Linea Saturnialis*:

nialis: but if it points to the root or mount of *Sol*, *Linea Solaris*, if to *Mercury*, *Linea Mercurialis*: that which goes from *Linea Jovialis* to the mount of *Luna*, *Linea Lunaris*, or the natural line: the other great line above it is called *Linea Stellata*, or the line of fortune, because it limits the mounts of the Planets, and is impressed with various vertues in those places according to the nature of the Planet whose mount it runs under or sets a boundary unto: Lastly, the space between the natural line and the line of fortune is called *Mensa*, the Table.

IV. All other lines shall either proceed out of the sides of the former, or else from some proper mount.

V. Every line great or small, long or short, hath a certain beginning or root, from which it rises; and a certain end or point to which it tends.

VI. The distance between both ends, is the way of its passage; in which way, it either crosses some other line, or else is crossed: if it do neither, its signification is continual, and ought so much the more to be taken notice of.

VII. Every mount hath a proper signification, which it receives from the significations of its proper Planet, being abstractly considered: the same understand of all the principal lines aforesaid.

VIII. *Saturn* is the Author of Age, Inheritances, Melancholy, Malice, Sorrow, Misery, Calamities, Enemies, Imprisonments, Sickness, Diseases, Perplexities, Cares, Poverty, Crosses, Death, and, whatsoever evil can befall humane life: he signifies Fathers, Old Men, Labourers, Dyers, Smiths, and Jesuits.

He also signifies one Austere and Satyrical, with a head declining, eyes fixed upon the Earth, hanging lips
and

and a sullen Countenance, wasting himself with a furious silence. He gives a Complexion or Colour between black and yellow, Meager, Distorted, of an hard skin, eminent Veins, small Eyes, Eye-brows almost joyned together, a thin beard, thick lips, cast down looks, an heavy gate, and stumbling as he goes. He signifies Envy, and Envious men, a Way-layer or Padder upon the high-way. But where he is well placed he signifies one subtil, wise, or witty, intelligent, ingenious, one of profound thoughts, given up to secret contemplations, a preserver, or keeper of hidden things, and a finder out of things that are lost.

IX. *Jupiter* is the Author of Health, Strength Moderation, Sobriety, Mercy, Riches, Substance, Goodness, Liberty, Religion, Honesty, Justice, Modesty, and all other things which may make a man happy: he signifies Churches, Church-men, Lawyers, Scholars, Cloathiers, and the like.

He signifies one good natured, fortunate, sweet, pleasant, a well wisher; one honest, neat, of good Parentage, and honourable. He gives chearfullness, right judgment, truth, heavenly wisdom, understanding, and is the bestower of Riches, goodness and Vertue. He denotes one merry ingenious, fair, Honourable, hospitable, kind, and every ways good. He prefigures a man of a sanguine Complexion between white and red, of a delicate body, good stature, high fore-head, and a head lifted up; Eyes somewhat big, short nostrils, large teeth, a light coloured beard, a tall compleat body, honest, just and fair condition'd.

X. *Mars* is the Author of strife, Contention, Pride, Presumption, Tyranny, Thefts, Murders, Victory, Conquest, Infortunacy, Boldness and Dangers: he signifies Physicians, Chirurgions, Apothecaries, the Camp, all Military men and Preferments, Edge-tools, Butchers, Carpenters, Gunners, Bailiffs, and the like.

He is the author of War, fighting, blood, and strife, and signifies one strong, bold, quarrelsome, insolent, a Traitor or a subverter and over-turner of States and Kingdoms. He gives power and might, heat and burning, and signifies Violence, contention, Impudence, and all disordered, inconsiderate, and heady actions. His countenance is terrible, cruel, fierce, angry, proud, hasty and imperious. He gives a red complexion, deep yellow or black hair, round Visage, fiery Eyes, and a savage revengeful look well placed, he signifies Chirurgeons, Captains, Commanders, and great men under military discipline.

XI. Sol is the Author of Honour, Glory, Renown, Preferment, Life, Generosity, Magnanimity, Sovereignty, Dominion, Power, Treasures, Gold, Silver, and whatsoever may make the life of man splendid; he signifies Kings, Princes, Rulers, and all men in Power, Minters, Gold-smiths, long Life and Wisdom.

He signifies one of a noble and Generous nature, fortunate, honest, neat, prudent, Intelligent, wise, the governor and bestower of life and beauty, and the dispeller of Evil, whence the Greeks sometimes called him Ἠελίον and Phœbus. The Hebrews call him שמש Shemesh, from Ministering or Serving; he being the chief Minister and Servant of the whole World; and the Arabians شمس Shames. He gives courage, Honour and Majesty, a man considerate, wise and prudent, one of a middle stature, comely personage, curled hair and brownish, of a red or sanguine Complexion, trusty and magnanimous; but being ill placed vain-glorious and a Tyrant.

XII. Venus is the Author of Joy, Pleasure, Mirth, Solace, Lust, Uncleaness and Idleness: she signifies Woman-kind, Sisters, Ladies, Whores, Curiosities, Lapidaries, Silkmen, Taylors, Mercers, Upholsterers, Pictures, Picture-drawers, the Pox, and Diseases proceeding from uncleaness.

She signifies one mild of disposition; fair, beautifull, pleasant and merry, given to mirth and jollity; and the Author of fruitfulness. She foreshews joy, friendship, mercy, bounty, Love, sports, dalliance, dancing, embracing, Kissing and such like. Being hot and moist, she is the mistress of Generation, makes an amiable, pleasant and chearfull countenance, prettily mixed with Red: she gives a compleat body enclining to tallness, fair and round visaged, with beautifull rowling Eyes, brown or flaxen coloured hair of a lovely disposition, gentle, bountifull, courteous, affable and merciful. Being ill placed or disposed, she signifies Whores, Strumpets, Bawds, Pimps, Panders, Thieves, and such like.

XII. Mercury is the Author of Craft, Subtilty, Policy, Deceit, Perjury, Study, Hearing, and Merchandizing: he signifies Merchants Clerks, Scholars, Secretaries, Ambassadors, Pages, Messengers, Poets, Orators, Stationers, Cheaters, Thieves, Petty Lawyers, Philosophers, Mathematicians, Astrologers.

He signifies one swift, nimble, eloquent, industrious wise, Rational, a diver into abstruse mysteries, good with the good, bad with the bad, male with the male, and female with the female, an interpreter or expounder of the mysteries of nature; one mutable, changeable or inconstant, lively, prompt, and of a ready wit. He gives a complexion neither very white, nor very black, a long Visage, an high forehead, small Eyes, brown or almost black, an even nose and something long, thin beard, long and slender fingers, one bushie, subtil, witty, sharp, and wary. Being ill placed or disposed, he signifies, Thieves, cheating Solicitors, Knavish Lawyers, Knights of the Post, Witches, Wizards, Diviners, &c.

XIV. Luna is the Author of popular Fame both good and evil, Joy and Sorrow, Mutability and Inconstancy, Affection, and Disaffection, Moisture and every

every effect which may be said to be common: she signifies Waters, Ships, Seamen of all sorts, Queens, Ladies, a Governess, the Common people in general, Neighbours, Mothers, Kindred, Fishmongers, Vintners, Tapsters, Midwives, Nurses and Travellers.

She is the translator of light from one planet to another, imparting her light to all the other Stars, and comprehending or receiving their Virtues and powers. She gives cold and moisture; feminine honour and Glory, Chastity, pity, mercy and the subduer of carnal Affections, taking care of all states and conditions of men both by Sea and Land: her influence it over tempests and storms at Sea, over the birds of the Air, and the beasts of the field; over Serpents at Land, and fishes in the Water, making things to ebb and flow, according to her decrease or increase. She shews one moveable, benigne, innocent, simple, chaste, and curious: gives a pale countenance, middle stature, round visage, and either black, brown or gray Eyes, according as she is aspected, and the sign she is in; tender body, fleshy, and of a soft and smooth skin; one that is facil or easie to be entreated, an affecter of news and new things, inconstant, &c. being ill placed or disposed, she signifies one beetle browed, ill natur'd and a Scold.

This being known, understand,

XV. *First*, That the lines take their signification from the mount of that Planet from whence they rise.

XVI. *Secondly*, That the place from whence any line rises shews the ground, cause, or original of the things signified by that line; the line or mount to which it points, shews the issue, to what the thing tends, and what may be the end of the matter signified.

XVII. *Thirdly*, That whether the line signifies good,

evil, if it be cut or crossed by any other line, that line so cutting it, will at a certain time not only abate the good, but also take away the evil, if it so signified.

XVIII. *Fourthly*, That the nature and quality of that line thus destroying the signification of the former, is known by considering from what place it rises, and to what place it tends.

XIX. *Fifthly*, That a double judgment arises from every line, by accounting it, first, from the one end; secondly, from the other.

XX. *Sixthly*, That little lines rising out of the sides of any other line, both augment the things signified by that line; and also signifie new matter arising by things signified by the line from whence they rise; and the place to which they point, shew to what they tend.

XXI. *Seventhly*, That the mounts or lines adorned with Stars, or small lines not crossed, or pointing to evil places, shew great good and happiness to the person, by things signified by the same mount or line: and on the contrary, vitiated with crosses, spots, or knots shew much evil and perplexity.

XXII. *Lastly*, The beginning of the lines, shew in the beginning or forepart of Life; the middle, in the middle part of Life; and the ends of them, the latter part, or end of Life; so that if any evil or good be signified by any line, you must hint the time according to the aforesaid reason.

XXIII. From these rules (being observed) you may attain to the knowledge of the natures, qualities and dispositions of all sorts of people, their Affections and Passions, answerable to the Vertues and Influences of the Stars and Planets which the antient Mathematicians and Astrologers have by long experience taken

taken notice of and observed, as does sufficiently appear by their works.

'Tis true, here we ought to enquire into the denominated times when the things signified should come to pass; but because that matter is something long and abstruse (being more fit to be handled in a particular tract, wherein all its curiosities may be examined) this our present work being a subject of another nature, and these things not essential to our purpose, we shall at this time forbear. Notwithstanding, although we have not here delineated every thing in particular, yet we have laid (as it were) the ground and foundation of the Art, out of which, as out of a fountain, the industrious Student may at his own leisure and pleasure, rear a stately fabrick. Be pleased to view the second figure of the hand, in which the numbers signify years: therein you may partly see the Geometrical reason of that measure of time.

C H A P. XXXVI.

Of the Line of Life.

- I. **K** *Αἰσανὴ* [*Linea Vitalis*] The Line of Life is that which includeth the Mount of the Thumb.
- II. This Line broad and of a lively colour well or largely drawn {without interfections and points, shews long life and one subject to few diseases; but slender, short and broken or cut with little cross lines, of a pale or black colour, shews short Life with many infirmities.
- III. If it makes a good Angle with the *Hepatica*, and the Angle be adorned with parallels or little Crosses, it shews a good wit and a pleasant disposition.
- IV. This *Linea Vitalis* abounding with branches to-

wards the upper end, and those branches extending themselves towards *Linea Hepatica* foreshew riches and honour, but if those branches descend towards the *Restricta*, they threaten poverty, contempt and deceitful servants.

V. If this line be cut with little lines like hairs, it signifies diseases, which if they fall towards the *Hepatica*, shews in the younger years, in the middle of the line in the middle of the Age, if towards the *Restricta*, in the latter years.

VI. If this line be any where broken, it threatens great danger of life in that Age which the place of the said breach betokeneth, which you may find out with a great deal of exactness, if you divide the line into ninety equal parts, beginning to number them from A towards B.

VII. If the Character of *Sol*, (*viz.* ☉) be found in this line, it shews the loss of an Eye, if two such figures, the loss of both Eyes.

VIII. A line passing through this *Vital* to the *Triangle* of *Mars* shews wounds and fevers, and many misfortunes in journeying.

IX. A line proceeding from the *Vital* beneath the Angle it makes with the *Hepatica* to the Mount of *Saturn*, shews an envious man, as also some dangerous *Saturnian* disease, as a *Consumption*, &c. which shall fall in those years signified by that part of the *Vital Line* which the said Line toucheth.

X. But such a line passing from the *Vital* to the ring finger, shews honour and wealth, and that by means of some noble woman.

C H A P. XXXVII.

Of the Epatick, or Natural Line.

I. **T**HE *Natural or Liver Line* is that which runs from the *Life line* or *Mount of Jupiter* through the middle of the *Palm*, terminating generally upon the *Mount of Luna*.

II. This line straight continued and not cut by other oblique lines, shews a healthy constitution and long life, but short or broken, not reaching beyond the middle of the *Palm*, signifies a short life replete with many diseases.

III. The longer this line is, so much the longer life it signifies, if it be cut at the end thereof, it threatens the end of *Life* with some dangerous disease.

IV. If any breach appears, (yet such an one as seems almost continued) it shews a change of life, if under the middle finger, in strength of years, if under the ring-finger, in declining Age.

V. If the upper part of it be far distant from the *Vital*, it shews manifold diseases of the heart, and also a prodigal person.

VI. If it be crooked, unequal, of various colours, and cut by other lines, it shews an evil habit of the *Liver* and diseases thence proceeding, one ill natured and foolish.

VII. If straight drawn and well coloured, shews wit, honour and health.

VIII. If it has a parallel or sister, it gives inheritances.

IX. If continued with little hard knots, it shews Murder according to the number of those knots.

X. If it terminates with a Fork or Angle towards the *Mount of Luna*, it shews a foolish, hypocritical, ill-natured person; if it tends to the *Mensal*, it shews a slanderous and envious person.

XI. When it cuts the Vital eminently to the *Mount of Venus* or *soror Martis*, especially if the same be of a ruddy colour, shews danger of thieves and many ill diseases, threatning life.

C H A P. XXXVIII.

Of the Cephalica or head-line.

I. **T**HE *Cephalica* ariseth below from the *Cardiaca*, and is drawn thence to the *Epatica*, thereby making a *Triangular Figure*.

II. Making such a perfect figure, and it having a lively colour, without interfection, declares one of great *prudence*, and a person of no *Vulgar Wit* or *Fortune*.

III. So much the more perfect the *Triangle*, so much the more *Fortunate*, and it shews a man very wise, temperate and couragious.

IV. If the *Triangle* be obtuse, it shews an evil nature, *clownish and rude*, if there be no *Triangle*, it is still worse, and shews the person to be *foolish, a liar and prodigal*, and generally one of a short life.

V. The *higher Angle* being *Right*, or not very *Acute*, shews a generous man; but if it be *very acute*, or if it touch the *Line of Life* under the mount of the *middle finger*, it declares a miserable, hard and covetous wretch, it also foreshews a *consumption*.

VI. The *left Angle* made upon the *Epatica* in the *serient* (being a right Angle) shews a profound understanding.

VII. The

VII. The *Cephalica* casting *unequal* and irregular clefts to *Mons. Luna*, thereby constituting strange Characters; shews a *dull head*, and *danger by the Sea*, in Men: but in Women, *discontents*, *miscarriages* and the like.

VIII. But casting *equal lines*, it presages the contrary in both Sexes: to wit, in men *wisdom*, and *success at Sea*, and in Women, *contentment* and *happy child-bearing*.

IX. If the *Cephalica* make a cleft or apparent Star, *upward* to the *Cavea Martis*, it shews *boldness*, and *magnanimity* of mind: but if it let the same fall *downward*, it manifests *deceit* and *cowardise*.

X. The *Cephalica* joined to the *Restricta*, by a remarkable concourse, shews a *happy* and *joyful old Age*.

XI. But if it be drawn *upwards*, (*in form like a Fork*) towards the place of *Fortune*, it shews much *subtilty* and *craft* in the management of affairs.

XII. If in this *Fork* the Character of \oplus *Sors* be found, it shews *Riches* and *Honour*, by the mans own *industry*.

C H A P. XXXIX.

Of the Mensal Line, or Line of Fortune.

I. **T**HE *Mensal* or *Line of Fortune* (called also *Linea thoralis*) takes its original from under the *Mount of Mercury*, and extends it self towards the *Mount of Jupiter*.

II. This line if it be *long enough* and without *incisures*, shews *strength of body*, and *constancy of mind*; the contrary if it be *short*, *crooked*, or *cut*.

III. If

III. If it terminates under the *Mount of Saturn*, it shews a *foolish, idle and deceitful person*.

IV. If in this line be found certain pricks or points, it shews a *lecherous person*.

V. If the *Epatica* be wanting; and the *mensal* be annexed to the *Vital*, it foreshews either *beheading, hanging* or other *untimely death*.

VI. If from the *Mensal*, a line ascends to the space between the *Mounts of Jupiter* and *Saturn*, another to the space between the *Mounts of Saturn* and *Sol*; and a third to the space between the *Mounts of Sol* and *Mercury*, it signifies an *envious, turbulent and contentious person*.

VII. A little line only thus drawn to the space between the *Mons Saturni & Solis*, shews *labour and sorrow*.

VIII. If annexed to the *Epatica*, making therewith an *acute Angle*, *the same*.

IX. The *Mensal* projecting small branches to the *Mons Jovis*, shews *honour and glory*.

X. But if it be *naked or single*, it shews *poverty and distress*.

XI. If it cuts the *Mount of Jupiter*, it shews a *covetous mind, and great pride*.

XII. If it send a branch between the *Mons Jovis & Saturni*, it shews *in a Man*, a wound in his head; but *in a Woman*, *miscarriage or danger in Child-bearing*.

XIII. Confused little lines in the *Mensal*, shew *sickness and diseases*: if under the *Mons Saturni*, in *youth*; under the *Mons Solis*, in the *middle Age*: under the *Mons Mercurii*, in *old Age*.

XIV. Lastly, If there be no *Mensal* at all, it shews one *faithless, base, inconstant and malicious*.

C H A P. XL.

Of the Restricta, or Cauda Draconis.

I. **T**He *Restricta* is that Line which divides the Hand from the Arm, either by a single, duple, or triple *transcurſion*; thereby determining the τὸ ὑποκει-
μενον or *ſubject of Art*; which by ſome is called the *Discriminal line*.

II. If the *Restricta* be double or treble, and extended in a right and continued tract, it ſhews a *healthful conſtitution of body, and long life*.

III. That line which is neareſt the hand continued without *incifure*, and of a good colour, ſhews riches.

IV. But if it be *pale* or *crooked* or *cut in the middle*, it ſhews weakneſs of body and poverty.

V. A line drawn from the *Restricta* to *Mons Luna*, ſhews poverty, imprifonment and private enemies.

VI. If that line be *crooked*, it doubles all the evil, and ſhews a perpetual ſlavery or miſery.

VII. But ſuch a line being clear and ſtraight, and extended to the *Mons Luna*, ſhews many journeys and *peregrinations* both by Sea and Land.

VIII. If it extend to the *Mons Jovis*, it foreſhews *eſtimation* and *Eccleſiaſtick dignity*, but that the man ſhall live in a ſtrange countrey.

IX. If to the *Eparica*, it ſhew honeſty, truth and ſincerity, and one of a healthful and long life.

X. If to the *Mons Solis*, a great and certain good, and gives honour and command in the Commonwealth.

XI. And ſo from the *ſame reaſon*, paſſing to the
Mons

Mons Mercurii, it shews a learned and ingenious soul: but if it reach not that Mount, but is broken about the middle, it shews a lying, prating, idle person.

XII. If it ascends directly to the *Mons Saturni*, it shews an inheritance in Land: but if it be crooked, it shews a covetous person, and one of a very ill nature.

XIII. A line running from the *Restricta* through the *Mons Veneris*, shews poverty, adversity and want, and that by means of some women or woman-kind.

XIV. A Cross or Star upon the *Restricta*, shews a happy and long life.

XV. One or more Stars upon the *Restricta* by the *Mons Veneris* in Women, shews lewdness, dishonour and infamy.

C H A P. XLI.

Of the Saturnia, or Line of Saturn.

I. **T**His Line is that which ascends from the *Restricta* through the middle of the *Vola*, to the *Mons Saturni*, which line if it be cut or parted, is called *Via combusta*.

II. This being full, and extended to the *Mons Saturni*, shews a man of profound cogitations, of great wisdom, and an admirable Counsellor in all great actions.

III. If it be combust, it is an evil sign, foreshewing many misfortunes, and poverty in one part of life.

IV. A line drawn from the *Vital* through the *Epatica*,

to the *Mons Saturni*, making an angle with the *Linea Saturnia*, foreshews imprisonment, and captivity, and many misfortunes.

V. The *Saturnia* bending backwards in *Cavea Martis* towards the *ferient*, the same.

VI. This line filled with *unusual* and *inauspicious* characters shews unhappiness and disasters.

VII. A *gross* line running from the *interval* of the *Mons Jovis* to the *Mensal*, and *breaking* or *cutting* of it, shews diseases or wounds in the belly or parts adjacent.

C H A P. XLII.

Of the Mount of Jupiter.

I. **T**HE *Mount of Jupiter* is the *tuberculum* under the fore-finger.

II. If upon the *Mount of Jupiter* there be a *Star* or a *double* cross it foreshews riches, prosperity, and happiness, one born to noble and glorious actions, one honest, affable, courteous, and renowned, a generous soul indeed, and faithful in all their undertakings.

III. *The same*, If this *Mount* is adorned with a *parallel* line, or a line sweetly drawn, between it and the *Vital*; it shews great dignities, and estimation with great Men.

IV. But if this *Mount* be vitiated, with a *Character* like a half *Gridiron*, it shews unhappiness, calamities, poverty, disgrace and deposition from honours and dignities; losses by women-kind, and diseases in the heart and lungs.

V. *The same*, If a line cutting this *Mount*, tends to
the

to the *Mount* or *line* of *Saturn*; this also threatens an *Apoplexy*.

VI. *Lastly*, A *Cross*, but especially a *clear red Star* on this *Mount*, is a signal and sure demonstration of a *splendid life*, repleat with *honour and glory*, riches and an *Eternal name*.

C H A P. XLIII.

Of the Cavea of Mars, and the Via Martis.

I. **T**HE *Cavea Martis* is the hollow in the middle of the *Palm*, commonly called the *Triangle* of *Mars*, made of the three principal lines, to wit, the *Cardiaca*, *Cephalica*, & *Epatica*.

II. The *Via* or *linea Martis* (called also the *Vital sister* and *soror Martis*) is a parallel to the line of *Life* on the *Mons Veneris*.

III. *Mars* is *Fortunate* so often as the *soror Martis* appears red, clear and sweetly drawn, and when either *Stars* or *Crosses* are found in his *Cavea* or *Triangle*: and thereby is signified courage, boldness, magnanimity, fortitude and strength: the man is imperious, strong and a great eater.

IV. But if the *Triangle* be infortunated by evil lines from the *Mons Veneris* or *Luna*, the person is litigious, scornful, proud, disdainful, deceitful and wicked; a Thief, Lecher, Robber, Murtherer, and shall have a life wholly filled with unhappiness.

V. The Character of *h Saturn* in the *Triangle*, shews a danger of falling from some high place.

VI. A *crooked line* ascending from the *Triangle* to the *Mons Saturni*, shews imprisonment.

VII. A line from the said *Triangle* towards the *Restricta*,

stricta, terminating under the *Mons Luna*, shews many peregrinations, journeys and travels.

VIII. The *foror Martis* augments all the good signified by the *Cardiaca* or line of life, but particularly it promises success in War, and the love of Women.

C H A P. XLIV.

Of the Mount of the Sun, and Via Solis.

I. **T**He *Mount of the Sun* is the *tuberculum* under the ring-finger.

II. The *Via Solis*, is a right line running down from the *Mount of Sol*, to the *Triangle of Mars*.

III. A *Star* or *Stars* upon the *Mons Solis*, shews one faithful and ingenious, and that he shall attain to great honour, glory and dignity, be honoured of Kings, Princes and great men; one of a *great and magnanimous spirit*, wise, just and religious.

IV. But a *perpendicular* thereon cut or cross with a line from the *Mons Saturni*, shews pride, and arrogance, a boaster, a poor base spirit, and one that shall fall into *irrecoverable miseries*.

V. The *Via Solis* clear, and not broken, or cut by any ill line, shews honour in the *Common-wealth*, and the favours of *Kings and great Princes*.

VI. But it being cut or confused, or hurt by any line from either the *Mount* or line of *Saturn*, it shews the contrary, *Poverty* and the hatred of great men.

C H A P. XLV.

Of the Mount of Venus, and the Cingulum Veneris.

I. **T**HE Mount of Venus is the *tuberculum* of the Thumb.

II. The *Cingulum Veneris* or girdle of Venus, is a piece or segment of a Circle drawn from the interval or space between the *Mons Jovis & Saturni*, to the interval or space between the *Mons Solis* and *Mercurii*.

III. A clear Star, or furrows that be red and *transversly parallel* upon the *Mons Veneris*, and is much elevated, shews one merry, cheerful and amorous; it shews also one faithful, just and intire, *one with whom an incorrupted tye of friendship (being once made) is durable for ever*: it also signifies great fortune or estate and substance by a Sweet-heart or Lover.

IV. But this *Mount* infortunated by evil lines, or lines from evil places, and irregular figures shews a *lecherous person, an adulterer, a poor, base, fordid wretch, who shall spend his substance on Whores.*

V. The Character of the Δ *Trine Aspect* on this *Mount*, shews a great fortune by Marriage.

VI. The *Mount of Venus* void of lines and incisures, shews a rude, effeminate and foolish person, and one ridiculous, and unfortunate in wedlock.

VII. The *Cingulum Veneris*, or girdle of Venus, shews intemperance and lust in both Sexes, a base and bestial life; a filthy *Sodomite*, who abuses himself with beasts.

VIII. If it be *broken or dissected*, it shews infamy and disgrace by *lust and lechery.*

CHAP.

CHAP. XLVI.

Of the Mount of Mercury.

I. **T**HE *Mount of Mercury* is the *tuberculum* under the little finger.

II. This *Mount* happy and fortunate with a Star, or *parallel crosses*; or the Character of the Δ *Trine Aspect*; shews wit and ingenuity, and makes the person a great Orator, gives him substance by Arts and Sciences, and the understanding of secret mysteries in *Alchemy, Musick, Painting, Astrology and Philology*, and raises the person to dignity by means of his own wit, prudence and industry.

III. But this *Mount afflicted*, or without lines; or hurt by a line from the *Mount of Saturn*, (cutting the *Mount of Sol*) or from the *Triangle of Mars*, shews a poor, low and dull wit, a person of no audacity or courage, a meer coward, a lyer, pratler, thief, cheat, traitor, and one faithless, and sometimes melancholy, mad or frantick.

IV. These judgements are the more firm where the lines and signatures are fair, firm and clear: but if they be dull or obscure, these judgements are more dubious and intricate.

V. A line from the *Mons Luna* to the *Mons Mercurii* not cut or broken, shews a man eminent and famous in his trade or profession (among the common people) let it be what it will.

C H A P. XLVII.

Of the Mons Lunæ, and the Via Lactea.

I. **T**He *Mons Luna* (called also *feriens à feriendo* the smiting part) is the mount comprehend- ed under the *tuberculum* of Mercury, between the *Mensal* and *Restricta*.

II. The *Vialactea*, or Milky way, is the line run- ning upwards from the *Restricta* through the *feriens* or *Mons Luna*.

III. The *Mons Luna* filled with happy Characters (as we have before hinted) shews one honest, just and honourable, and makes a man famous through a Kingdom, gives him the praise of the common peo- ple, and the acquaintance of great and noble Ladies; and makes him happy in Navigation.

IV. But being infortunated by evil Characters, or a *trapezia*, or evil lines from the Triangle of Mars or lines broken, or cut with oblique Angles, it shews one of a various, poor and inconstant life, a beggar, a person envied by almost all people, one wicked, treacherous and deceitful, a person subject to travel, captivity or banishment.

V. If the good lines on the *ferient* be fair and come- ly, they premonstrate so much the more happiness, and in women fruitfulness: but the evil lines pale, so much the more evil.

VI. The *Via lactea* or milky way, well proportion- ed and continued, shews fortunate journeys; both by Sea and Land, great wit, and the love and fa- vour of Women-kind, chiefly of Ladies and great Women.

VII. But

VII. But if this line be cut or crooked, it shews unhappines, and a poor and low estate.

VIII. If it be whole and extended to the little finger, it shews a great good beyond expectation.

C H A P. XLVIII.

Of the Mensa, or Table.

I. **T**He *Mensa* is the interval or space betwixt the *Mensal* and *Epatica*, the which is given or attributed to *Fortune*, from whence the Table is called the place of *Fortune*.

II. The *Mensa* being large and broad, and repleat with good figures, shews riches and treasure, one of a liberal *magnanimous spirit*, and of long life.

III. But *small and narrow*, shews poverty or a slender and mean fortune, a niggard, a coward, a *pitiful poor*, *fearful and mean soul*.

IV. A little circle in the *Mensa* shews a great wit, and a profound person in *Arts and sciences*.

V. The *Mensa* terminating in an *Angle* under *Mons Jovis* by the concurrence of the *Mensal* and *Cardiac* or *Vital* line, shews falshood and treachery, and one of short life.

VI. A *Cross* or *Star*, within it, clear and of good proportion, especially under the *Mount of Sol*, shews honour and dignity, by means of great and Noble men, and encrease of Noble men: if it be the Character of \uparrow *Jupiter*, it shews *Ecclesiastical preferment*.

VII. The same *Cross* or *Star*, being doubled or tripled wonderfully encreaseth the aforesaid good fortune; but cut or confused by other little lines, the said good is much diverted, and *Anxieties* and troubles threatned.

VIII. Good and equal lines in the *Mensa*, shew good fortune; evil and distorted or crooked, the contrary.

IX. A *Cross* or *Star* in the *Mensa* over *Mons Luna*, shews fortunacy in travelling.

X. If there be no *Mensa*, it shews a cloudy and obscure life and fortune.

C H A P. XLIX.

Of the Thumb and Fingers.

I. **A** Line surrounding the *Pollex* or Thumb in the *middle joint*, shews the person shall be hanged.

II. A line passing from the *upper joint* of the *Pollex* to the *Cardiaca*, shews a violent death, or danger by means of some married woman.

III. *Overthwart lines*, clear and long underneath the nail and joint of the Thumb, shew Riches and Honour.

IV. *Equal furrows* drawn under the lower joint thereof, shew Riches and Inheritances.

V. The *first and second joint* free from incisures, shew a slothful and idle person.

VI. *Overthwart lines* in the uppermost joint of the *Index* or fore-finger, shew inheritances; but such in the middle joint, shew a subtil person.

VII. *Right lines* running between those joints in the *Index*, shew (*in Women*) a plentiful issue; (*in Men*) a nimble tongue.

VIII. If they be in the *first joint* near *Mons Jovis*, they shew a pleasant and courteous disposition; and a man of a *generous soul*.

IX. But

IX. But a Woman who hath a *Star* in the same place, is *lascivious and whorish*.

X. Little *gridirons* in the joints of the *Medius* or middle-finger, an unfortunate and melancholy person: but equal and parallel lines shew fortune by dealing in Metals.

XI. A *Star* there, shews a violent death by drowning or Witchcraft, or the like.

XII. A *Gross line* rising from the *Mons Saturni*, through the whole finger to the end thereof, shews a meer fool or mad person.

XIII. In the *Annular* or Ring-finger, a line rising from the *Mons Solis*, straight through the joints thereof, shews honour and glory.

XIV. In the *first joint* of the *Annular*, equal lines shew treasure and honour: *overthwart* lines, the hatred of Kings and great men; but if intersected, their envy shall be abated.

XV. In the *Auricularis* or little finger, a *Star* in its *first joint* near the mount thereof, shews one of ingenuity, and a good Orator.

XVI. *Evil Characters* and *obtuse Angles* the contrary: those unfortunate signs in the *first and second joints*, shew a Thief: in the *last joint*, one perpetually inconstant.

XVII. Some Authors predict the *number of Wives or Husbands*, by the number of little lines in the outmost part of the *Mons Mercurii*; but in my opinion those things ought rather to be sought out in the Mount of *Venus*.

XVIII. And as in the Mounts good or evil Characters, are omens of good or evil Fortunes; so also on the fingers they signifie the same.

XXIX. The *first joint* near the Mount shews the *first Age*: the *second joint*, *middle Age*: and the *last*

joint, old Age: but it is *our opinion*, that the directions of the principal significators in every Geniture, more properly demonstrate the times in which the good or evil signified by those marks or lines, may probably happen.

C H A P. L.

The Good and Evil Lines, Marks or Characters.

I. **T**He good lines, marks or Characters are parallels, as = or || double or treble, and the like, Crosses as + or x: double Crosses and the like: Stars as the Sextile Aspect * or the like: Ladders-steps and Quadrangles as □ or ▭: the trine Aspect as Δ: Angles as the right or acute, or a mult-angle, &c. the Characters of Jupiter and Venus, as ♃ ♀, and other the like a-kin to these.

II. The Unfortunate and evil Characters are deformed, irregular and uncouth figures, broken lines, crooked lines, gridirons, the Characters of ♄ Saturn and ♂ Mars: the opposition ♂: irregular Circles, obtuse Angles and such like.

III. Lastly, as the quantity of lines considered in their length and depth; their quality, in their shape and complexion; their Action, in touching or cutting other lines; their passion, in being touched or cut of others; and their place in which they are posited or located, ought to be observed; so also their time of appearing or disappearing, ought not to pass our cognizance.

IV. For

IV. For it is most certain, that some lines are prolonged to certain years of our Age, other some shortned; sometimes they wax pale, sometimes grow red; some of one shape quite vanish, while others of another shape rise: Now the cause without doubt is the various Progressions of the Aphectical places in the geniture, to their various and contingent promissors, to the influence of which, the whole man it self is subjugated; and therefore it behoves the industrious and studious Artist, not to determine all things at first sight, for no man can attain the knowledge of all particulars at one inspection; But yearly to make new Observations, as the Person encreases in Age.

V. Moreover it is to be observed, that these judgments be not delivered simply alone, but by being compared with the rules delivered in Chap. 35. aforegoing, from whence many other Prognosticks more than what we have here mentioned will arise, to the infinite pleasure of the Artist, and satisfaction of the curious Inquisitor.

C H A P. LI.

Containing certain Chiromantical Aphorisms.

I. **I**ncisures and Crosses upon the Mount of Saturn shew some light Adversities and Diseases.

II. Two, three, or more little lines on the first joynt of the little Finger, shews the dominion of Mercury, and an acute wit.

III. The *Mons Veneris* notably furrowed, shews wantonness, and one that shall obtain many Loves.

IV. A large and broad *Mensa*, shews a free and liberal Soul: and if it be adorned with good Figures, an accumulation of much Treasures and Riches.

V. The *Saturnia* only touching the *Epatica*, shews one ingenious, and of long Life.

VI. *Mons Jovis* well adorned with good Figures, demonstrates the height of Honour.

VII. A *Cross* near or upon the *Ferient*, shews auspicious and profitable Journies, and honourable.

VIII. A *Cross* in the *Mensa* under the *Annular*, shews Honour, Glory, and Treasure: but if any of its lines be cut by the *Epatica*, it shews loss of substance in old Age.

IX. Two, three, or more *parallel lines* upon the *Ferient*, shews many profitable and pleasant Journies.

X. Two or three *parallel lines* upon the *Mons Mercurii*, enclines to all manner of Arts and Sciences, and gives a profound wit.

XI. The *Via Solis*, not hurt, shews Honours, but if it be cut or touch'd by other lines, some impediment therein: If the *obstructive line* arises from the *Mons Mercurii*, by some Mercurial Man or thing or the like: If from the *Mons Luna*, from some Woman-kind, the common People, or some vulgar business: If from the *Mons Saturni*, from some old man or men, some worn out Priest or Prophet, or Informer, or other Saturnian matter: the like judge, if it arises from other parts.

XII. *Parallel lines* upon the *Mons Saturni* falling upon, and cutting the *Mensal line*, shews Sicknes, Poverty, and want in old Age.

XIII. The cutting of the *Vital*, shews Diseases about those years, which the parts of the line cut signifie.

XIV. If the line cutting the *Vital*, comes from the *Triangle of Mars*, it shews wounds, or a burning Feaver, or the French Pox: If it comes from the *Saturnia*, it shews Melancholy, a Consumption, or a fall, &c.

XV. The

XV. The *Soror Martis* very conspicuous and eminent, shews boldness and courage, and one that will be fortunate and formidable in War.

XVI. An excellent good *Cephalica*, shews an incomparable Ingenuity.

XVII. A *Cross* upon *Mons Luna* declares fruitfulness, and many Children; as also safe delivery in Child bearing.

XVIII. The *Saturnia* rising Obliquely from the *Restricta*, to the *Mons Saturni*, shews labour and sorrow; and one of a covetous disposition.

XIX. A line arising from the Middle of the hand, cutting the *Epatica*, and ascending to the Extremity of the *Mensal*, under the *Mons Mercurii*, shews in the declining Age an unfaithfull friend or friends, from whom shall come loss and detriment.

XX. A *Cross* or *Star* near or upon the *Epatica*, shews some eminent good.

XXI. As the *Mons Saturni* afflicted, foreshews diseases; so those diseases are chiefly the Gout or a *Consumption*: if the line afflicting the *Mons Saturni*, arises from the *Triangle of Mars*, it declares either an Hectick or the Stone.

XXII. The *Cingulum Veneris*, generally shews intemperance; but if it be intersected or cut, it is a positive sign of sensuality and Lasciviousness; and that the person shall suffer in Reputation and good name, and not without cause: and oftentimes foreshews want of Issue.

XXIII. The *Triangle of Mars* being perfect; the *Saturnia* extended only to the touching of the *Epatica*; the *Cephalica* continued to the *Mons Mercurii*; and the *Via Lactea* very fair, are firm Arguments of one exceeding fortunate.

XXIV. Parallel lines drawn from the *Mounts of Saturn*

Saturn and Sol, to the *Mons Luna*, shews encrease of fortune and substance in foreign Countries, and in travelling; as also from some eminent Lady or Ladies, Womenkind, the Common people, and things Lunar.

XXV. The *Mensal* cutting the *Mons Jovis* shews one passionate, and full of Wrath: if the same be cut under the *Mons Saturni*, by a short and thick line, it shews some grievous distemper in the bowels and lower part of the belly.

XXVI. The *Via lactea*, arising from the *Restricta* and *Vital*, shews an old Age full of tranquillity; and so much the more, if the end thereof upon the *Mons Luna* be adorned with a *Cross* or *Star*, or parallel line.

XXVII. The *Epatica* enclined towards the *Restricta* (thereby making a narrow triangle) makes one not over wise, yet Covetous.

XXVIII. A line coming from the *Vital* into the *Triangulum Martis* making a *Cross* with the *Saturnia* shews wounds and danger of life by Thieves and such like: the same *Cross* shews favours also.

XXIX. The same is signified if the *Mensal* be conjoyned with the *Epatica* by any intervening line.

XXX. A *Cross* or *star* on the upper part of the *Mons Veneris* shews Unlawfull loves and a lecher: this is the more Confirm'd if the said Mount be well adorned with furrows.

XXXI. A *Sister* joyned unto the *Saturnia*, confirms its significations double.

XXXII. The *Cephalica* extended even to the *Mons Mercurii* shews eloquence, a ready wit, and much ingenuity.

XXXIII. If the *Via Solis* appears not in the Hand, the favours of Princes and great Men will not be easily attained.

XXXIV. A

XXXIV. *A line running from the Vital to the Mons Jovis* (but especially passing through the Vital) shews greatness and honour, and that sometimes to come by Womenkind, or by Marriage.

XXXV. The *Mensal* projecting *little branches* towards the *Ferient* under the *Tuberculum Mercurii* pre-
sages poverty.

XXXVI. *A line falling from the intervalls of the Mons Saturni & Jovis* threatens a dangerous wound, in the lower part of the belly.

XXXVII. The *Vital* dissected by a line from the *Mons Saturni*, shews a dangerous Saturnian disease: from the *Mons Jovis*, a disease of his nature: from the *Mons Solis*, a solar disease: from the *Mons Mercurii* one Whimsical, or afflicted with a *Mercuriall* distemper: from the *Triangulum Martis* a Martial disease, as some wound or burning feavour: from the *Mons Luna*, Madness, dropsy, or some other Lunar disaffection.

XXXVIII. The *Mensal* or *Line of Fortune*, cut by a line from the *Mons Jovis*, shews loss or damages by things or persons Jovial: by a line from the *Mons Saturni* or *Linea Saturnia* by things or persons Saturnine: by a line from the *Mons Mercurii*, by Scriveners, Pettyfoggers, and things or persons *Mercuriall*.

XXXIX. *A line running from the Mons Saturni to the Mons Luna*, parallel to the *Vital*, shews Wonderful preferment and dignities; and a person formidable; but not without great envy.

XL. The *Soror Martis*, running through the *Vital* to the *Mons Jovis*, shews the ♂ or other Aspect of ♀ and ♂ in the Geniture.

XLI. The *Restricta* not broken or cut, but continued, and of a good colour, argues Riches, and a healthfull constitution of Body.

XLII. The

XLII. The *Cephalica* having a *Sister*, confirms the significations thereof, let them be what they will: and if the said *Sister* reaches to the *Epatica*, it shews one crafty and subtil, and excellent in managing of Affairs.

XLIII. Good lines upon the *Mons Solis* being cut, shews Honours, but full of troubles.

XLIV. *Parallel incisures* on the *Mons Luna*, tending to the place of Mars, shew long Journies.

XLV. The *Epatica* extreamly produced, argues a very long Life.

XLVI. A Cross in the utmost part of the *Mensa* near the *Ferient*, and another in the *Cephalica* near the *Restricta*, denotes a plentiful Life in old Age, and many successful Journies.

XLVII. A Cross in the *Cavea Martis* shews an inclination to Arms and Martial Discipline, and sometimes wounds.

XLVIII. The *Saturnia* whole, and extended through the *Epatica* and *Mensal*, shews a happy success and event of Actions; and one of profound Cogitations.

XLIX. A line coming from the *Mons Jovis* to the *Mons Veneris* (not cut by any evil line) presages a great fortune by Marriage.

L. A Cross just above the *Restricta* between the *Mons Veneris* and the *Mons Luna*, shews tranquillity and happiness in old Age.

LI. The *Mensal* full of branches (almost like a Herring bone) and they pointing towards the *Mons Jovis*, eminently declare an increase of Riches.

LII. The Character of ν *Jupiter* in the *Mensa* under *Mons Solis*, shews preferment Ecclesiastical.

LIII. *Parallel lines* in *Triangulum Martis*, pointing towards the *Ferient*, argue felicity and much good.

LIV. A

LIV. A *Cross* or *Star*, upon the end of the *Saturnia* near the *Restricta*, shews uprightness of mind, one courteous and peaceable, and obtaining a happy and pleasant old Age.

LV. A line from the *Vital*, falling upon, and cutting the *Epatica*, shews shortness of Life, and an hot Liver.

LVI. The *Saturnia* falling from the *Mons Saturni* to the *Mons Luna*, shews adversities and secret Enemies, and if it then turns back like a hook towards the *Mons Mercurii*, it signifies Captivity or Imprisonment.

LVII. The *Cingulum Veneris* cut by lines from the *Mons Saturni* or *Mons Solis*, denotes Diseases, and hurts by Lasciviousness.

LVIII. The *Via Solis* cut by the *Cingulum Veneris*, brings a stain upon the Honour by some woman kind.

LIX. *Parallel lines* from the *Mons Veneris* to the *Mons Mercurii*, shews a *Conjunction* or other aspect of Venus and Mercury in the *Geniture*, and signifie great Eloquence.

LX. A crooked line falling from the *Mons Saturni* into the *Cavea Martis*, threatens a fall from an high place, or drowning; and this so much the more eminently as the line is more crooked.

Qui in manu omnium hominum signa posuit, ut cognoscerent opera ejus singuli. Job 37. 7.

Libri quinti Finis.

P O L Y G R A P H I C E S

L I B E R S E X T U S.

Containing the 112 Arcanums of *Peter John Faber*, a most Eminent and Learned Physician.

Translated out of Latin into English, by William Salmon Professor of Physick.

C H A P. I.

The highest Tincture of Sol, fixed, for Luna.

I. **T**Ake of Gold and Venus of each equal parts, melt them together in a strong Crucible, then beat them into thin Plates, and cement them together with a part of the following Cement.

II. Take Antimony and Cinnabar A. ζij . Lapis Hæmatitis, common Vitriol calcined red, common Salt prepared, A ζj . Bole Armoniack $\zeta \beta$. German Azure

Azure stone $\text{z} \text{ss}$. reduce all into a fine Powder, which strew upon the aforesaid Plates (in a strong Crucible)
Stratum super Stratum.

III. Cement them together with a fire of reverberation for twelve hours; then take out the Crucible, and melt the metal within it: how much of the Venus is carried away in fumes, you may know by weighing it.

IV. Repeat the work again with new Venus extracted from the Mine, by melting them, beating them into Plates, and cementing again with the aforesaid Powder for other twelve hours, with a reverberatory Fire.

V. Continue the Repetition for twelve times, always adding new Venus; so shall you have at last a most rubicund Gold, one part of which being put upon twelve parts of fixed Luna, shall transmute it into most fine Sol; and by this is Gold multiplied.

CHAP. II.

The manner of fixing Luna.

I. **T**AKE of the best Luna calcined with Mercury, as much as you please, reduce it into fine Powder, and mix it with an equal quantity of the (a) Cinnabar of Antimony.

II. Sublime, and in every Sublimation, renew the Cinnabar for three times: what remains in the bottom after the third Sublimation, dissolve in this following Aqua fortis.

III. Take Niter and Vitriol A. $\text{ss} \text{j}$. Antimony and Verdigrise A. $\text{z} \text{ij}$. mix them, and make an Aqua fortis according to Art.

IV. In

IV. In the prescribed A. F. dissolve the above prepared Luna; hastening the dissolution in warm Ashes for three days; after the third day draw off the Aqua fortis by distillation.

V. That which remains in the bottom, reduce into a body with Borax, so is it fixed and tinged, and after a wonderful manner will embrace the above prepared Tincture of Gold.

VI. And this is the way by the help of which the Tincture of Venus is drawn out of the body of Venus, and is transmitted fixed into the body of Sol, and out of Sol again into fixed Luna.

(a) *Some suppose, that for want thereof, you may use Hungarian Cinnabar.*

C H A P. III.

The White fixed Tincture for Venus.

I. R. **M**ercury sublimate ℥^β. or as much as you please; of the most pure and limpid Oil of Tartar ℥ j. Borax ℥ ij. dissolve the Borax in distilled Vinegar a sufficient quantity; filtrate the dissolution, which being clear and limpid, joyn with the former Oil of Tartar; then mix with them the Mercury sublimate in fine Powder, and let it be dissolved in warm ashes.

II. Upon that which will not be dissolved, put new Oil of Tartar conjoyned as before, with the dissolution of Borax.

III. Then distill the dissolution in ashes; and upon what remains in the bottom, put new Oil of Tartar and Borax as before, till the Mercury shall

become in the bottom of the Alembick like wax, flowing with a very gentle heat, and congealing with cold.

IV. Project one part of this Oyl of Mercury, upon ten parts of Melted Venus, and it will be all Good Silver: And so the fixed Oyl of Mercury tinges Venus both within and without, that the Tincture remains for ever.

C H A P. IV.

The Fixed Oyl of Mercury.

I. R. **M**ercury sublimate, and Sal-Armoniack Ana, as much as you please; sublime them both together four times, or till there shall remain in the bottom of the sublimatory, a great quantity of fusible Mercury, and in the neck of the Retort the Sal-Armoniack.

II. Break the Retort, reduce the Mercury into powder, which dissolve in (a) distilled Vinegar: Filtrate the solution, and distill the Vinegar: what remains in the bottom dissolve again in fresh distilled Vinegar.

III. At length dissolve it in Common distilled water, which solution do so often, till the Mercury is converted into a pure Oyl, which is able to dissolve all things; but most powerfully Gold and Silver.

IV. And Gold and Silver, dissolved in this Oyl of Mercury, and cocted or digested till they are converted into a fixed Oyl, or fixed Salt, will make a wonderfull projection upon Venus, yea upon Crude Mercury.

V. The reason is, because that this Oyl or Salt being

ing (b) fixed, converts the same Metals into fine Silver.

VI. If this Salt be made Volatile, and then fixed again, it will be a more powerful Arcanum.

(a) *There is intended Spirit of Vinegar.* (b) *The oyl or Salt is not fixed, but is so called in respect of the end or intention which is to fix; for no fixed thing can fix a volatile thing, for fixity demonstrates nothing but deadness, and no dead thing can invade anothers property: this is apparent to be intended, by the very proposition following these words.*

C H A P. V.

The Red Cinnaber of Antimony.

I. **T**AKE of the best Antimony and Mercury sublimate, Ana: distill them by a Retort: and to the matter remaining in the retort, add new Mercury sublimate, and distill again as before.

II. At length, force the matter with a strong fire, so will the Cinnaber of Antimony be sublimed in the Neck of the Retort; which for three days is to be continually sublimed in the Retort, till it is very red.

III. But the Liquor which distills from the Mercury sublimate and Antimony, highly rectify by distillations till it emits no fæces.

IV. To this put Mercury seven times sublimed, and, by various and many reiterated distillations it will be fixed; which you will the more easily obtain, if you add the former (a) described oyl conjoyned with Luna, and fix them together by reiterated Cohobations,

V. Thus have you the Oyl of Mercury and Antimony, which is admirable to transmute Jupiter into Luna, by putting one part upon ten parts of melted Jupiter.

(a) That oyl is intended at Sect. 4. Chap. 4. aforegoing.

C H A P. VI.

A fixed Tincture to project upon Venus.

I. **T**Ake fixed oyl of Tartar, (as we shall hereafter teach) Sulphur Vive, A. ʒij: mix them, and make a past, which put into a Retort, and distil, so have you a Red liquor.

II. This liquor put with crude Mercury into a Glass Retort, draw it off again by distillation, and the Mercury will be fixed at bottom of the Retort.

III. You may project with this fixed Mercury upon Venus fused in a Crucible) one part upon five parts of Venus) but it will not be able to make a transmutation, except that the fixed Tartar be conjoyned with Luna in a fixed oyl.

IV. The reason is, because there is no fixed tincture can be made to tinge, without the perfect metall's converted into an Oyl or fixed Salt, from whence is made a fixed Oyl by a constant and through boiling.

C H A P.

C H A P. VII.

The Fixing of Oyl of Tartar.

I. **T**Ake Tartar Calcined to whiteness; dissolve it in common water, filter and make it very pure.

II. Then in a Glafs Urinal, over a gentle heat in Sand, evaporate the humidity, till a skin or such like appears to cover it on the top.

III. That sign appearing put in a little fair common water; and boyl it again, till a skin appears on the superficies or top of it.

IV. Put again to it a little common fair water, and boyl it again, till you see a skin again appear to cover it.

V. Put again more water, and boyl it again, till a skin covers it again: This do so many times and so long till no more skin will appear to cover it, for then it is fixed, and will remain or indure fusion in the fire.

C H A P. VIII.

To fix the Oyl of Sal-Armoniack.

I. **T**Ake Sal-Armoniack ℥ij Quick lime ℥viii. common water ℥ss mix and incorporate them together: put them into a strong Crucible, which cover and lute very well, putting it in a cementing fire for four hours, then taking it out.

II. Dissolve the matter in common warm water,

and make it boil for an hour, then filter, and make the liquor very clear.

III. This Liquor evaporate, and congeal the Salt, which then mix together with the white of an Egg.

IV Put this into a moist place to dissolve into oyl, most gloriously fixed: to which conjoyn an Equall Quantity of Mercury seven times sublimed, by cohobating it upon the matter which will not sublime, till they are both brought into a fixed oyl.

V. One part of this Oyl put upon melted Venus p. xij, tinges it admirably white, which whiteness will remain for ever.

VI. But if you conjoyn this oyl with Oleum Lunæ, it will be much more noble and perfect.

CHAP. IX.

A wonderfull Red Tincture extracted from Vitriol.

I. **T**AKE Roman Vitriol calcined to Redness, dissolve it in distilled Vinegar with filtrate, and make very clear, evaporate, desiccate, and congealate it, and reduce it into a very subtile powder.

II. Imbue it till it grows moist with water of Sal-Armoniack, extracted by distillation, and dry it with a gentle fire.

III. Imbibe it again with water of Sal-Armoniack, drying it as before; this do so many times, till it has drunk up so much of the water of Sal-Armoniack, as the vitriol it self did weigh.

IV. Put

IV. Put the matter so imbibed in a large Glass matress well stopped, which place in a hot bath for fifteen days, or in Horse dung which keeps more the equality of the heat.

V. Then take the Vitriol out of the Matress, and put it into a well luted Retort, from which distill with a gentle fire, to dryness, or so long till no more will come forth.

VI. After Augment the force of the fire gradually, till the spirit comes forth, and continue it in the same degree, till all the spirits are come over.

VII. Let the fire be yet augmented, till the Retort grows red and is perfectly hot, so will the Vitriol be rubified.

VIII. *That* you shall join with the matter found sublimed in the neck of the Retort, by beating them together: which mix with their own water contained in the Recipient, by imbibing, beating, and drying so long till all the water is infused, and imbibed into the said Vitriol.

IX. And the sublimation is to be iterated, joyn- ing the Volatile matter with the fixed; so will there be a matter fixed, and very red as blood.

X. *This* you must reduce into powder; put it into a strong Glass Phial, which close well; bury it in a cold and moist place for fifteen days or more, till it is dissolved into a most red water which filter and make very clear.

XI. Project this upon Mercury seven times sub- limed, so will it be rubified, and converted into a red oyl.

XII. This Oyl conjoyn with an equal quantity of the Oyl of Gold, which you shall fix together in a Retort by abstracting the humidity with a gentle fire, so have you a perfect medicine.

M
XIII. One part of this medicine being put upon a Thousand parts of Crude Mercury, warmed in a Crucible; or upon a thousand parts of Luna, or of any other Imperfect metall, it will convert them into the most pure Gold.

CHAP. X.

To make the aforesaid Oyl of Gold.

I. **T**Ake of Sol as much as you please, dissolve it in Royal Aqua fortis wherein Sal-Armoniack or common Salt is dissolved.

II. Keep warm the dissolution for fifteen days, then abstract the A, F by distillation Cohobating the distilled water many times upon the matter remaining in the bottom of the Stillatory.

III. Renew the A. F. three times till the Sol remains converted in the bottom of the Vessel into a red Oyl.

IV. Dissolve a quantity of this Oyl in Aqua ardentis deflegmated, and let them be conjoynd.

V. Afterwards abstract the Aqua ardens or Spirit of Wine, and the Oyl of Sol will remain in the bottom of the Vessel.

VI. This Oyl conjoyne with the aforesaid (a) sublimated Mercury, so have you indeed a perfect medicine.

(a) At Sect. 10. and 11. of Chap. 9. aforegoing.

CHAP.

C H A P. XI.

To make an increase of Gold and Silver.

I. **T**Ake of the best foliated Sol z^i : of the best Mercury z^{iiij} ; mix them together, and make an Amalgama.

II. Then take of Common Salt decripitated, as much in weight as is all your Amalgama, which mix together by beating.

III. Put them into a Glafs Retort in Ashes, and distill with a very strong fire, so will the Mercury ascend, and be separated from the Gold, which will remain in the bottom of the Vessel.

IV. The Gold wash with common fair water so long till it has no tast of the Salt.

V. Then take it out and melt it alone, and you shall find your ounce of Gold to be increased a whole drachm (*viz.* for your z^{viii} you will have z^ix).

VI. This Gold if you cement with the Cement described in (a) our first Arcanum, and then again Amalgamate it with the former Mercury you shall multiply the Gold more and more, even till all (b) the Mercury is transmuted into Gold.

VII. And by many times cementing the Gold and Amalgamating it with Mercury, and mixing it with decripitated Salt, as is aforesaid in this Arcanum, you will have a very high and large Augmentation. *MS*

(a) See Chap. 1. Sect. 2. (b) Till a great part of it is transmuted.

C H A P. XII.

A Fixed Tincture for Venus.

I. **T**AKE filings of Venus ℥i : of the best Mercury washed ℥ij ; beat them with Vitriol in a Marble Mortar, till they are Amalgamated together.

II. This Amalgama beat, and by many Lotions make it purely white, to which add Sal-Armoniack ℥j white Arsenick ʒvi : white Tartar ʒj . common Salt decrepitated ʒj .

III. Beat all together, and imbibe the powder with distilled Vinegar, till the mass becomes of the body and thickness of Honey.

IV. Put it into a Retort, and distill to dryness, or as much as you can make come over; and what sublimes, put upon the fæces, and mix them by beating or grinding.

V. This mixture imbibe with new distilled Vinegar (a) so long till nothing will ascend, but all remains fixed in the bottom.

VI. This fixed matter beat, and mix it with the Whites of Eggs, dry it with a gentle heat, and put it into a pot (not of Glass or glazed) with a fit cover well luted to it, and calcine it in a strong fire, for one whole day.

VII. Then dissolve the matter in (b) Mineral distilled Vinegar, filtrate and make it very clear; then evaporate the Vinegar by distillation to dryness.

VIII. Dissolve it again, filter and clarify, which
four

four times repeat, till your fixed matter remains in the bottom of the Alembick, like running Oil.

IX. One part of this, conjoyned and melted with as much of the best Luna, is sufficient to be put upon thirty parts of purged Copper.

X. And if the matter be oftentimes dissolved in Mineral distilled Vinegar, and as often coagulated and dissolved again, at length one part will be enough to cast upon an hundred parts of purified Copper.

(a) *Distilling again to dryness, and imbibing and distilling.* (b) *This mineral Vinegar ought to be extracted with Niter, for then alone it makes the Solutions and Coagulations.*

C H A P. XIII.

The Purgation of Venus for the former Tincture.

I. **T**Ake an hundred whites of Eggs, beat them together with a stick, till they are converted into a water.

II. In this water put hot (a) Eggshells to the quantity of ℥j. Crude Tartar ℥j. put them into a glass Vessel, stop it close, and digest it in warm Horse-dung for eight days; then distill a water therefrom by a retort.

III. In this water quench fused and melted Copper three or four times; so will it be prepared and purged to receive the former Tincture.

(a) *The word the Author uses is Calens, but in what sense is somewhat difficult to be understood; if the thing he intends, be only dryness, doubtless they only ought to be made*

made hot or warm: but if incineration, they ought to be made red hot, or calcined.

CHAP. XIV.

To congeal or harden Mercury.

Turn into Silver

I. TAKE of Mercury thus prepared as much as you please. Let the Mercury boil in the juice of Limons for six hours; then boil it again for six hours in the juice of Bears Breech; and then for other six hours in common Oil and Vinegar mixt together in equal quantity.

II. The Mercury thus prepared, put into a strong Glass Matres well luted with this following Lute.

III. R. Calx viva well beaten, Tartar well beaten, and common Salt A. q. s. (a) make a Paste with whites of Eggs, of which make Lute; and with which let the Matres, wherein is the prepared Mercury, be luted according to art.

IV. Let the Matres have a very narrow mouth, which close very well with a glass Stopple, and the aforesaid Lute (b).

V. Then put it into a gentle Fire in ashes for three hours, afterwards increase the Fire, and continue the same degree of heat for another day.

VI. This done, break the Glass, and you shall find the Mercury transmuted into good Luna.

(a) You may see the way of making several other good Lutes fit for this purpose in our Pharmacopœia Londinensis lib. 6. c. 5. Sect. 3, 5, 10. (b) If the neck be narrow enough, you may give it the Hermetick Lute at Sect. 14. of the aforesaid place.

C H A P. XV.

With the Regulus of Antimony to make Gold.

I. **T**Ake Regulus of pure Antimony, fine Gold and Silver, of each equal parts, melt and make them run in a Crucible, so have you a friable or brittle matter like Glass.

II. Beat and powder it, and make an Amalgama with z iij. thereof with (*a*) the Mercury of Antimony z jx. which shut up in a Matress well closed.

III. Put it upon a gentle fire for a month; but in such a fire, as in a month may inspissate it, and make it grow black.

IV. In the second month increase the fire, or bury the Matress again more deeply in ashes; but so increase the fire, or bury it so much the more deeply, as that the matter may grow up into a mineral Tree.

V. Continue this degree for a month; at length for eight days augment the fire, till the matter is melted.

VI. This matter amalgamate again with new common Mercury well washed; and boil it again for three months, as before, augmenting the fire.

VII. Thus have you the matter of the projection, one part of which, being put upon ten parts of Luna, transmutes it into fine Gold.

VIII. This matter, if it be throughly and perfectly depurated by Sublimation, and then fixed so as to be a powder, fusible like Wax or Butter, you have the Powder of projection to be put upon all Metals, one part upon a thousand of any impure Metals.

IX. And

IX. And if moreover this matter be yet dissolved in Mineral distilled Vinegar, and then coagulated, it adds much more to the perfection of the work.

X. And if it be often dissolved in common water distilled, and coagulated, so that the matter be made (a) sweet, it works perfectly, and cures all Diseases, both in Mankind and Metals.

XI. These Solutions being very often iterated or repeated, with fair common water, it will be converted into a sweet red Oil.

(a) *That is meant sweet, as being freed from the Salts or corrosive Acidity of the Spirits of the mineral Vinegar.*

C H A P. XVI.

For the making of Sol.

I. **T**AKE Niter, Verdigrise, Sulphur vive, Roman Vitriol, A. ℥ss. Sal Armoniack ʒjv. Cinnabar ʒij. reduce them into a fine Powder and mix them.

II. Put them into a Luted Retort, and distil therefrom an Aqua fortis, observing the degrees of fire.

III. In this A. F. dissolve of the best Sol ʒj. Then in another Matress, dissolve a part, of the best Mercury well washed ʒjv.

IV. Conjoyn the Dissolutions, and with a gentle fire separate the Aqua fortis, cohobating (the water drawn off) thrice, upon the matter remaining in the Retort.

V. And put common water often distilled (when the aforesaid A. F. is separated) upon the fæces, which dissolve,

dissolve, filter, and clarify; this often iterate, separating the A.F. which at last will all come forth.

VI. Then put upon the matter the first water which is sweet, that at length it may sweeten the matter remaining in the bottom of the Stillatory, and convert it to a sweet and fixed Oil.

VII. One part of this Oil, put upon twenty parts of (a) *Saturn* or *Luna*, will convert it into Gold.

(a) *You must prepare your Saturn or you will do nothing.*

C H A P. XVII.

For the whitning of Copper.

I. R. **C**ommon Salt calcined 3 ℔. Quicklime 3 ℔. Arsenick calcined 3 j. Tartar calcined 3 ℔. fixed Sal Armoniack, Borax A. 3 ij. Mercury sublimed (a) seven times as much, mix, and make of all a Powder.

II. Calcine it (b) for an hour, then dissolve it in (b) distilled Vinegar, filter, and evaporate the dissolution.

III. Calcine it again a little, and dissolve again in distilled Vinegar; this work so often repeat, till you have a Salt fusible as Wax, and an incombustible Oil.

IV. One part of this put upon p. x. of (d) purged Copper aforementioned, converts it into good Silver: this is the best whitning of Copper.

(a) *I suppose there is intended 3 xij.* (b) *You must calcine it very gently, lest you lose your labour.* (c) *Where-*
soever

soever you meet with distilled Vinegar, always understand the Spirit thereof, or that from which the flegm is abstracted.
(d) The way is taught in Chap. 13. aforegoing.

C H A P. XVIII.

The Cementation of Sol.

I. **T**AKE Roman Vitriol ζ ij. Sal Armoniack ζ j. Verdigrise ζ β. Crocus Martis, Niter, A. ζ j. mix and make a Powder, which sublime till it will sublime no more.

II. Then dissolve it in putrified Urine, filter, clarify, and evaporate the Solution; that which remains at bottom, is the secret Cement.

III. Take (a) Luna and Gold of each ζ j. melt them together, and let the Mass be beaten into (b) thin leaves, which cement with its equal weight of the foregoing Powder, and the whole Mass will be transmuted into fine Gold.

Showing to make Silver in gold

(a) You must take cupellated or fine Luna. (b) I suppose very small filings, made with a very fine File, may do the work nearly as well.

*& to make the Silver into Good
Queny - how much will this gain
in profit*

CHAP.

*What effect will
Sobbees Niter have*

C H A P. XIX.

Oil of Sulphur Vive.

I. **T**Ake of Tartar calcined ℥j. *Sulphur Vive* ℥ss. beat them into Powder, and put it into a Retort, closing it well, which keep so for two days, without distillation.

II. That time being past, distill by ashes with a strong fire, so shall you have a wonderful Oil, which certainly cures the Falling-sickness, if about gut. x. be taken for some days together in a Morning fasting (a).

III. So also Mercury prepared, as we have before declared in this Chapter, cures the Falling-sickness, being given (b) in gr. x.

IV. And if it be cast upon thoroughly melted Venus; it perfectly whitens it.

(a, b) *In a convenient Vehiculum, as Essence of Peony, Wine of Black-Cherries, or some such like Liquor.*

C H A P. XX.

A Tincture for Sol.

I. **T**Ake of Sol ʒi: of Luna ʒss: of the best Mercury washed ʒij: make an Amalgama, which put into a Glass body well closed.

M m

II. Set

II. Set it in a gentle heat for 20. or 30. days, till the Amalgama is converted into a red powder.

III. Joyn this with new Mercury, and boyl (or digest) again till it is fixed, which work repeat four times, and dissolve it in the following Aqua fortis.

IV. Take Roman Vitriol, filings of Mars, Sulphur vive, Niter, common Salt, A. ℥ss. from all which prepare a water by distillation, which will be very red.

V. In this water dissolve the afore said matter, prepared from Gold, Silver, and Quick Silver.

VI. Then abstract the Aqua fortis, and cohobate oftentimes till the water comes forth white.

Dissolve again in Mercurial Vinegar distilled; filter, clarify, and abstract the Vinegar.

VIII. After that dissolve the matter again in common water distilled; then filter, clarify and abstract the Water till the matter remains in the bottom of the Vessel, converted into a running oyl, or fusible Salt.

IX. Cast p. j. of this Oyl or Salt upon Crude Mercury made pretty hot p. 100. ; and the whole will be converted into good Gold.

C H A P. XXI.

The Extraction of Mercury from Antimony.

I. **T**Ake Antimony ℥viii; powder it finely, and put it into a Capacious Matress, upon which put the best Aqua Vitæ ℥ij: Salt of Tartar ℥vi: Sal-Armoniack ℥iii: mix them well together in the same Matress:

Matres : stop it up close, and putrefy in warm horse dung for fifteen days.

II. Then take it forth, and circulate it (being yet close stopt) eight Days.

III. After, boyl it for two days, and you will find the Mercury in the bottom running and Volatile: Out of every Eight pound of Antimony, you will have running Volatile Mercury 3 $\frac{1}{2}$.

IV. This is the best Mercury for the performance of the preparation of that Arcanum at Chap. 15. aforegoing.

C H A P. XXII.

M *An Elixir for the Golden Work.*

I. **S**ublime Mercury seven times with common Salt prepared, and at last sublime the same five or seven times with Sal Armoniack, till the Mercury remain at the bottom fusible as Wax.

II. This Mercury dissolve in mineral distilled Vinegar; filter the Solution, And coagulate, by distilling from thence the Vinegar.

III. Dissolve the Mercury in the Vinegar, which repeat three or four times till the Mercury will melt as Wax.

IV. This Mercury thus prepared, dissolve in pure distilled rain Water, then coagulate, which do many times; and at length dissolve it in the humidity of the Air.

V. To this clear and limpid Solution add the Calx of Sol (prepared with Mercury and common Salt) which dissolve alone into a most rubicund Liquor.

VI This Liquor by many Solutions and Coagulations, convert into a fixed Oyl and a pure Elixir.

MB
 VII. Being cast upon a thousand parts of fine Luna, it will transmute it into the purest and best Gold.

does not mean by weights—

CHAP. XXIII.

*Of Drawing forth the Virgins Milk,
 or Lac Virgineum*

I. **T**AKE Mercury seven times sublimed ℥i. Dissolve it in this following water.

II. Take May dew six times distilled; common Aqua fortis seven times distilled A. ℥j; mix them together and distill by a Retort two or three times; so have you a very sharp Vinegar.

III. In this you must dissolve your afore said seven times sublimed Mercury; which Dissolution putrefy for a month in warm Horse-dung.

MB
 IV. Then distill, and always conjoin the water which distills over, with that part of the Mercury which remains at the bottom, till all the Mercury ascends by distillation; which will quickly be done if the Artist be a wise searcher out of Nature.

V. For the water of May dew must be augmented when the dry water ascends from the Mercury remaining in the bottom.

VI. Which Mercury is so often to be dissolved in the distilled water of May Dew, till at length it all ascends Acid.

B
 VII. This is that which is called Lac Virgineum or Virgins Milk, and the most sharp distilled Vinegar (a) fitted for the Dissolution of all Metallick bodies,

bodies, converting them into a fusible Salt, and a fixed Incombustible Oyl.

VIII. By the help hereof all Our Arcanums are most perfectly compleated, without it nothing true can be found; from whence it comes to pass that this Vinegar is used in the making and perfecting of every Secret.

(a) This is that Mercurial Vinegar mentioned Chap. 20. Sect. 7. aforegoing.

C H A P. XXIV.

For the Whitning of Copper.

I. TAKE of the best Luna as much as you please, melt it in a Crucible, and cast upon it an equal quantity of the whitest Arsenick broken into little bits.

II. Cast it into a reed, or in the form of an Ingot, and it will be brittle as Glass.

III. Then beat it to powder, and mix it with an equall quantity of Mercury seven times sublimed: sublime again till the Mercury is fixed with the Luna in the bottom of the Vessel.

IV. If this be not quickly done, conjoyn your Luna so prepared with fusible Mercury so made (a) with Sal-Armoniack as is above said, so will your matter be perfectly fixed.

V. This matter dissolve in our (b) Virgins Milk, which solutions being several times repeated, it will be converted into a fusible Salt, and a fixed Oyl.

VI. This is to be sweetned from its acrimony by distilled water iterated with many cohobations, so will it be a most perfect Oyl.

} MS
} MS

VII. One part of it put upon a thousand parts of melted Copper, it gives it an Eternal tincture; which will always remain, yea in the fire it self.

(a) According as is taught in Chap. 4. and Chap. 22. (b) The making of which you may see at large Chap. 23. foregoing.

C H A P. XXV.

A secret from Antimony and Mercury.

I. **T**AKE Mercury seven times sublimed with Vitriol and common Salt, (the Vitriol calcined to redness, being changed every time, and the common Salt diminished, being dissolved, defecated, and made pure) that thereby, viz. by the sublimation thereof, the Mercury may extract the Tincture of the Vitriol and Salt.

II. Take of this Mercury seven times sublimed ℥ij; Mineral Antimony, or Antimony as it comes from the Mine, as much; reduce all into a fine powder, and mix them together.

III. Put them into a Retort, and digest in warm Horse-dung for 25. days, or a month; which done,

IV Place the Retort in a furnace in Ashes & distill with a very gentle fire for 12. Hours, then increase the Fire, till a red Oyl comes, after which, put out the Fire, and cool the Vessels.

V. Take out the Oyl, and put it into a Retort close stopped, which place in a very good heat for 8 Days.

VI. After that distill in Balneo Mariæ six times, and a seventh time in hot Ashes, till it is very pure
and

and clear, limpid, and shining as Gold.

VII. In this Liquor dissolve Gold calcined with Mercury and Salt, or let it be converted into a fixed Oyl, and then conjoyn it with its equal weight of Gold, boyling them together till they are fixed.

VIII. Or distill the Volatile part, which cohobate so often upon the fixed remaining in the bottom of the Vessel, till the whole is fixed.

IX. One part of this fixed Oyl, tinges an hundred parts of Luna, and turns it into pure Gold.

X. Also leaves of Silver heat red hot, and extinguished in this Oyl, are transmuted into fine Gold.

XI. And it fixes Crude Mercury into Gold, if some few drops thereof be projected upon it in a hot Crucible (a).

XII. Its Vertues and power are multiplied if it be often dissolved (in the said water extracted from Antimony and Mercury seventimes sublimed) repeating the distillations and putrefactions.

(a) *In this case it will be much the better way first to fix the Mercury by the fumes of Lead, in such sort that it may endure melting the better, lest it otherwise should all fly away, before the operation is performed.*

C H A P. XXVI.

A Tincture of Silver upon Copper.

I. **T**AKE of Luna (Amalgamated with Mercury)
ʒiij. of ☿ extracted with Calx vive and Tar-
tar from Mercury sublimate, ʒiij.

II. Let the Mercury be well washed with Salt and Vinegar, to which add Salt often purged till it flow like

wax, which is done by many Solutions, Calcinations, and fusions.

III. Mix all in a fixatorie vessel, which for a Month put upon Warm Ashes, till the whole is fixed.

IV. To this add Mercury sublimate (fixed by many Sublimations with Sal-Armoniack) thrice the weight, and fix again; boyl it for a month, and it will be perfectly fixed.

V. This you must repeat four times, or till the water flows like wax with out fume.

VI. Then project of this matter p. j. upon Venus p. x. and it will be tinged perfectly into Silver.

CHAP. XXVII.

A Tincture of Gold upon Luna.

I. **T**Ake of fine Luna ʒij : of fine Sol ʒj : melt them together, and bring them into thin Leaves, which dissolve in Aqua fortis.

II. To this dissolution add Mercury seven times sublimed ʒij ; then distill to dryness.

III. To this matter add fixed Mercury and fluid or fusible, prepared with Sal-Armoniack as above said; which again dissolve, and abstract the Aqua fortis to dryness, which repeat by thrice cohobating, till the matter flows like wax without fume.

IV. Project of this p. j. upon fine Luna p. x. and it will be good Gold.

C H A P. XXVIII.

Another Tincture of Gold upon Luna.

I. **T**AKE of fine Sol calcined with Mercury, Sulphur, and common Salt prepared and well purified: wash the Calx in warm water, till it is sweet, and freed from all manner of saltiness.

II. Take of this Calx ʒij ; Mercury seven times sublimed, and reduced again into running Mercury ʒij : mix them well.

III. Then put them into a fixatory or strong Matress well stopt, which place in an Athanor for a month, that the matter may be congealed.

IV. Dissolve again with the same Mercury prepared in the same manner as aforesaid, by beating and mixing till the matter will flow as wax.

V. Then dissolve it in our Virgins Milk, or our distilled Vinegar, which we have declared above, in the three and twentieth Chapter.

VI. The dissolution filter till it is clear, which is many times to be dryed, and to be dissolved again by many cohobations; which is so often to be iterated till the matter will flow as wax, without any fume.

VII. Then edulcorate it with Spirit of May dew, that it may lose all its acritude; so have you a true Elixir, to project upon Luna.

VIII. One part hereof put upon a thousand parts of melted Luna, will transmute it into the best and finest Gold: which will be more pure, if with patience it is elaborated. It is a long preparation.

C H A P. XXIX.

A Tincture of Sulphur and Mars for Luna.

I. **T**Ake scales of Iron (plenty of which you may find in a Smiths shop) being beaten off from the red hot Iron, ℥j: yellow Sulphur as much.

II. Mix and burn them together, adding new Sulphur ʒj. or ij. for the second or third Combustion.

III. Being burnt, beat it, put it into a Retort, and distill by ashes, observing the degrees of fire, so have you an Oyl of Sulphur in a large quantity; because the Sulphur of the Iron is adjoynd to the common Sulphur, by which the humidity is augmented.

IV. The distillation being done, augment the fire, till the matter remaining in the bottom of the Retort is red hot, and well calcined to Redness.

V. This matter thus calcined Red, take, and put upon it its own water in a Glass Vessel, to which add Spirit of Life (a) four times as much as there was of the Oyl or sharp water, distilled from the Sulphur and Mars.

VI. Put these in warm Ashes that they may boyl gently, and extract a Tincture by boyling from the Calcined matter.

VII. This Tincture decant by Inclination, and add new Spirit of Life, putting them into a gentle heat to digest till it is Coloured.

VIII. This tincture decant, and conjoyn it with the former, which work so often repeat, till the Spirit of Life will be no longer tinged.

IX. Put these Tinctures of the Spirit of Life into a Stillatory,

Stillatory, and with a very gentle Fire separate the Spirit from the tincture which will remain in the bottom of the Vessel thick like honey.

X. To this Tincture add of Mercury well washed an equal quantity, mix them thoroughly, which digest in a gentle heat for one day, till the Mercury is fixed into a red powder.

XI. This red powder dissolve in our Virgins milk, and cohobate often till it is converted into a red Oyl fixed.

XII. This Oyl conjoyn with an equal quantity of the Oyl of Gold, and digest in an equal and gentle heat for a month, and it will perfectly fix the Oyl of Mars, Sulphur and Mercury.

XIII. This being put one part upon melted Luna an hundred parts, gives a wonderful Tincture.

(a) There is meant Spirit of Wine; yet some think Spirit of Mercury; others Spirit of Quicklime, but they are deceived.

C H A P. XXX.

A Tincture from Sulphur Vive, and Argent Vive, upon Luna.

I. **T**AKE of *Sulphur Vive*, or that which was never yet melted, but is as it was taken out of the Mine, (for that has the better and greater Tincture.)

II. Take of this Sulphur ℥ij. reduce it into Powder, and put it into a strong capacious Glass Urinal; upon which put Spirit of Wine perfectly deflegmated,

mated, so much as may cover it the breadth of five or six Fingers.

III. Place it in warm ashes, that it may gently boil, taking off the scum which arises, with a Spoon, and casting it away; this boiling continue for three days and nights; adding new Spirit of Wine, as the former wastes.

IV. At the end of three days the Sulphur will be fusible and incombustible, which dry with a continued gentle heat, till the Spirit of Wine is totally vanished.

V. This fixed Sulphur mix well with its equal quantity of Mercury (well washed) in a glass Mortar with a glass Vessel, till they are thoroughly mingled.

VI. Then put it into a strong glass Matress, with Spirit of Wine covering it the breadth of four Fingers, which stop very close, and place in warm Horse dung for fifteen days, and the Spirit of Wine will be defecated, the matter remaining dry.

VII. Take the Matress from out the Horse dung, and place it in warm ashes, so will the matter turn black as pitch in a few days: and continuing this gentle heat, it will pass through all colours, till it comes to a perfect redness, like that of a Ruby.

VIII. This matter fix in a fixatory in an Athanor for a month, till its odour or smell is most fragrant and sweet, which you may perceive by the aperture of the Vessel.

IX. If this matter be dissolved in our (a) Virgins Milk, and then again in Spirit of *May Dew*, till it is sweet; it will more perfectly make a transmutation into Gold.

X. One part of it being put upon a thousand parts of melted *Luna*, or upon any other Metal, it transmutes them into the finest Gold.

XI. Yea,

XI. Yea, being put upon Crude Mercury (b) in a hot Crucible, it transmutes it into a stone of the same virtue and Efficacy.

XII. One part of this Mercury being put upon an hundred parts of Quicksilver, fixes it into good Gold.

(a) The way of making it is taught in Chap. 23. foregoing. (b) You may first fix it with the fumes of Lead.

C H A P. XXXI.

A Preparation of Arsenick to whiten Venus.

I. **T**AKE *Sal Niter*, *Roch Alum*, common Salt prepared, A. ℥j. mix and make an *Aqua fortis* according to art.

II. The *Feces* beat well, and put to them *Crystalline Arsenick* in fine Powder ℥j. which sublime once.

III. Beat this sublimate small, and dissolve it in the aforesaid A. F. and clarify the Solution.

IV. Distil this dissolved *Arsenick* by a Retort, and you will have in the bottom a dry matter, which in a moist place will resolve into Oil.

V. To this Oil add the Oil of *Luna* (the preparation of which we have taught before) and fix them together for a month in a warm place.

VI. Then abstract the superfluous humidity by Distillation, till there remains in the bottom of the Stillatory, a truly fixed Oil.

VII. This Oil will penetrate Copper and tinge it white; and one part of it being put upon one hundred parts of melted Copper, will transmute it into good Silver.

C H A P. XXXII.

A fixed Tincture to convert Luna into Sol.

I. **T**Ake of the best *Luna* calcined with Mercury and Salt prepared: mix it with an equal quantity of *Cinnabar* of *Antimony*; these sublime three times.

II. In every Sublimation repeat the *Cinnabar* of *Antimony*.

III. Then dissolve this matter in a Compound Aqua fortis, made of Niter and Vitriol, A. ℥ j. Antimony, Verdigrise A. ʒ iij. make the Solution over warm ashes.

IV. Keep the dissolution warm for three days; at the end of which time, distil a water, and reduce the Fæces into a body, by melting or dissolving them with Borax.

V. Thus have you a Tincture for *Luna*, which with an equal quantity of fine *Sol*, will transmute it into good Gold.

C H A P. XXXIII.

Mercury Water.

I. **T**Ake Mercury sublimate in fine Powder ℥ j. lay it in a strong substantial plate of Tin, with a hole in its middle: place it on a glass Funnel in a cold place, that the Mercury may melt *per deliquium*.

II. This

II. This Liquor distil in Balneo, repeat the distillations, until the whole matter be turned into water, and doth all arise in the distillation.

III. Take all this distilled water, and draw it off in ashes: what remains in the bottom of the Alembick, let it melt again *per deliquium*, and distil again in Balneo and ashes as before, till no faeces remain in the bottom of the Alembick.

IV. In this Mercurial water seven times distilled in ashes is Gold (calcined with Mercury, Salt and Sulphur) to be dissolved.

V. This Solution is to be putrefied for fifteen days in horse dung, and distilled with a gentle fire in ashes, and cohobated upon the Faeces, till it be converted into a true fixt Oil, whose virtue is wonderful.

VI. One pound thereof, will go upon an hundred of melted Silver, and turn it into pure Gold, tinging and transmuted of it throughly.

VII. If its Oil be sweetned with Spirit of *May Dew*, by often dissolving, distilling, and cohobating, its virtue and efficacy so encreaseth, that it cures all Diseases both Humane and Metallick.

C H A P. XXXIV.

To tinge Luna into Sol.

I. **T**AKE of the best *Sol* calcined, *Crocus Martis*, calcined Brass, of each a like: add thereto *Sal Armoniack*, rectified upon *Crocus Martis*, by Solution of the *Sal Armoniack* in sharp Spirit of Vinegar; for the *Crocus* being so dissolved, tingeth the *Sal Armoniack* with its colour.

II. By

II. By distillation or Exsiccation, and sublimation, let this Tincture be joynd to the Sal-Armoniack.

III Dissolve of this Sal-Armoniack 4 ounces, in our Vinegar; our Virgins Milk (a), and put into this Solution the powder of the Crocus, of Gold, and of calcined Brass, in which perfectly dissolve them all.

IV. Filter and purify the Solution, and let it putrefy for a month in Horse-dung, then distill by a Retort in a Gentle Fire, or Ash or Sand heat.

V. Cohobate the Matter on the fæces, till it be converted into a fusible Salt, which sweeten with Spirit of May dew, and then it will tinge very well: one part will go upon ten parts of melted Silver, and transmute it into good Gold.

(a) See Chap. 23. *foregoing.*

CHAP. XXXV.

To make Crocus Martis more noble, for perfecting the former secret.

I. **T**AKE as many filings of Steel as you please, wash them ten or 20 times in water, in which Salt is dissolved, till the filings are very clear and pure, then dry them.

II. Put them into a Glass Matres, and affuse thereon strong Spirit of Vinegar, to which add a good quantity of dissolved Sal-Armoniack.

III. Place the Glass Matres in the Sun for 8 days, turning it every day, and shaking it: then decant the Vinegar, and put on fresh Spirit, with new Sal-Armoniack.

IV. Shake well the Matres or Vessell, and put it
into

to the Sun again, until the Vinegar is tinged, which decant also, and add it to the former.

V. This work you must repeat, till the filings are dissolved in the Spirit of Vinegar and impregnated with the Sal-Armoniack.

VI. Distill these Tinctures with a gentle heat, so will the Spirit come off, and leave the Crocus at bottom, most admirable in augmenting the Tincture in the former Chapter.

VII. This Crocus may be reduced into a true red Oyl of Mars: and if it be often dissolved in Spirit of Vinegar, and then dissolved in Spirit of May dew, it will be turned into a most red Oyl.

VIII. This Oyl if it be joyned with the Oyl of Gold and fixed, it will be a most perfect work, of which one part will go upon an hundred parts of melted Silver.

IX. Mercury seven times sublimed, will be tinged by it, and converted into a most red Oyl, nearly equal in Virtue and power, to the former Oyl of Gold.

C H A P. XXXVI.

To turn water into good Wine.

I. **T**Ake of the best wine six quarts; or what quantity you please: distill it in a Glass Alembick large and high with a gentle Fire: Or substitute good Spirit of Wine (seven times at least rectified) in its place, that it may be perfectly dephlegmated.

II. The Spirit thus rectified keep well stopt in a Glass, then prosecute your distillation, and the flegm will come over, which rectify seven times, till it

be very pure and clear, and free from all manner of fæces in the distillation.

III. The flegm thus prepared keep in a Glafs by it self; increase the fire, in the same distillation, and you will have a red and fœtid Oyl: this you must so often rectify till it be white and clear, and has lost its *empyreuma*, which keep in a Vial well stoppt.

IV. Calcine the remaining fæces in a Crucible, with a strong open fire, till they are white, to which Calcin'd fæces put the rectified flegm, in a new Glafs Alembick, with a blind head: let it boyl for an hour, then filter and purify it.

V. This purified liquor distill in an Alembick; and the fæces remaining calcine again as before, and dissolve it in the flegm: thus do 7. or 10. times, Calcining, dissolving, and filtering, till you have a pure white Salt, freed from all fæces and impurity.

VI. To this pure Salt add its own rectified Spirit, reserved after the seventh rectification, and in it dissolve the Salt in a warm Sand heat: filter and purify the Solution: and if there remains any thing undissolved, calcine it again.

VII. Being Calcined, dissolve it in the rectified flegm, then Coagulate, and dissolve it in the rectified Spirit; which Solution distill and cohobate so long upon the remaining Salt, till it be turned into an Oyl, which purify, and make volatile, by joyning it with its own Spirit.

VIII. This by continual digestion fix: being fixed add to it the former rectified Oyl, and fix both together, then volatilize and fix it again.

IX. Thus are all the Elements of the Wine joyned in this fixed mixture; and it will turn Water into good and pure Wine: One pint will turn 300 pints of water into Wine, which is wonderfull to see.

C H A P. XXXVII.

To turn the fusible Oyl of the Golden Marchasite into Gold.

I. **T**Ake of the best Marchasite of Gold ℥ij: reduce it into very fine impalpable powder, which dissolve in *Aqua Regis*, upon warm Ashes.

II. Decant off the clear part of the Solution, from the turbid faeces; distill the Solution clear, dry the faeces, and cohobate the distilled water upon the faeces; always purifying the Solution, and decanting it clear off from the troubled faeces.

III At length dry the marchasite, and add to it of good Gold (calcined with Mercury, Salt, and Sulphur) one ounce: and of the Sal-Armoniack rubified (with the Crocus Martis, as above) 2 drachms: of Mercury 7 times sublimed 3 drachms.

IV. Mix and incorporate all together in a Marble Mortar with a Glass Pestell: and put all into a Retort, and distill with a gentle Ash heat, till all the humidity is vanished.

V. Then increase the fire that the Volatile parts may sublime into the neck of the Retort; after which break the Retort; and joyn the matter beaten into powder in the bottom with what sublimed into the neck.

VI. Mix them very well together, and sublime them again: repeat this work seven times, the matter will be (as fusible as wax) in the bottom of the Retort.

VII. Joyn this fusible matter, with the fixt Oyl of the Alcaly, or fixt Salt: digest them for a month

in an Athanor in a strong Glafs : and if need require, digest it longer untill it be congealed into a fusible yet fixt matter.

VIII. you may project with this by putting one ounce thereof upon an hundred ounces of Mercury made hot in a Crucible.

C H A P. XXXVIII.

To make the Oyl of an Alkali to prepare the former secret.

I. **T**Ake Sal Alkali 10. pounds : beat it in a Marble Mortar, and incorporate it with distilled Vinegar. of which make round balls, and dry them in the Sun.

II. Put these balls into a Reverberatory, and calcine them for 24 hours : then dissolve them in a sufficient quantity of distilled Vinegar; filter the Solution, and distill to dryness.

III. Then dissolve it again in fresh distilled Vinegar, the matter is turned into a fixt oyl and Salt, fusible as wax.

C H A P. XXXIX.

To tinge Luna into Sol.

I. **T**Ake of the best Antimony well poudred one pound : crude Tartar and Salt, of each as much : poudre them all, and being well mixed, calcine them in a Strong Crucible, with a violent fire.

II. Encrease the fire till the matter is melted; and let

let it remain melted for four hours, that the Regulus may fall to the bottom of the Crucible.

III. When the matter is cold, Separate it from the Regulus, which keep : the rest of the matter dissolve in fair water by boyling it ; then filter and purify it as as much as you can.

IV. This matter thus filtered and purified, mix with the spirit of Vinegar, so will the Golden Sulphur of the Antimony precipitate.

V. This separate by filtration, so will the Golden Sulphur remain in the filtering paper, which dry by a gentle Fire.

VI. The dried Sulphur dissolve in our Virgins Milk, and digest it till it be tinged.

VII. Then distill the Solution, and the acid part of the distillation cohobate upon the fæces, that they may be dissolved again and purified.

VIII. Repeat this work so often, untill it be turned into a red fixt oyl, which is to be joynd with the oyl of Gold, and digested untill it is fixed into a fusible and tinging Salt.

IX. One ounce of this Salt will transmute an hundred ounces of melted Luna into good Sol.

C H A P. XL.

To make the Mercury of Antimony.

I. **T**Ake of the Regulus mentioned in the former chapter 4 ounces ; of Sal-Armoniack, well depurated by Solution and dried, 8 ounces.

II. Powder and mix them all together, and sublime them in a strong Glafs.

N o 3

III. Repeat

III. Repeat the Sublimation 5. or six times, till the Regulus does rise with the Sal-Armoniack.

IV. Then dissolve all in common fair water, warmed, and impregnated with the Salt of Tartar; so in the bottom of the Vessel you will find the Regulus turned into a running Mercury after Menstrual digestion. See chap. 21. aforegoing

C H A P. XLI.

To extract Mercury from Metalls reduced into a Calx.

I. **D**issolve in common *Aqua fortis* Salt calcined by degrees, untill the *Aqua fortis* will dissolve no more.

II. Into this water put Regulus of Antimony, if you desire its Mercury; or the Calx of Lead, Tin, Iron, Copper, Silver or Gold, if you desire their running Mercury.

III. Stop the Glass well wherein the Solution of the Metallick Calx is made: digest it for a month in Horse-dung, and then distill off the *Aqua fortis* and dry the matter.

VI. Repeat this work again, digest, distill, and dry; and add to it its own weight of Sal-Armoniack, and as much of Tartar, upon a good quantity of *Aqua ardens* or Spirit of Wine.

V. Digest this mixture for 15. days, then cause it to boyl; and you will find running Mercury in the bottom.

C H A P. XLII.

To transmute Antimony into Sol.

I. **T**Ake Mercury of the Regulus of Antimony 3 ounces: of the best Gold filed or made into thin leaves, one drachm: make an Amalgama thereof.

II. Then with common Mercury and pure fine Silver, make another Amalgama, beat and mix both the Amalgama's in a Glass Mortar, with a Glass Pestell.

III. Being well mixed, put them into a long bolt head well stopt, and in a gentle heat digest the matter, untill it wax black.

IV. Then increase the fire, and digest untill it grows white: digest still, and increase your Fire, till the matter wax red as Cinnaber.

V. To this add new Mercury drawn from the Regulus of Antimony or Silver, mix them well together, and digest them again, till the matter waxes white, and red as before.

VI. This do three times, and you will have a true Elixir for Sol: one ounce whereof, will go upon a thousand ounces of melted Luna.

VII. And if this matter be dissolved in the Mercurial water we have taught to prepare in the 33. Chapter aforegoing, it will be an unparallell'd secret; and being sweetned with Spirit of May-dew; it cures all diseases, both humane and Metallick.

C H A P. XLIII.

To make Mercury of Silver, and with it a great Elixir

I. **T**AKE of the best Silver 2. ounces : dissolve it in *Aqua fortis*, and digest it for a month, then distill and cohobate 3. or 4 times.

II. At length draw off the *Aqua fortis* to a fourth part, and place the rest in a cold moist place to crystallize.

III. To these Crystals well dried, add of good Oyl of Tartar made of the best and whitest Salt of Tartar six ounces : of dissolved Sal-Armoniack two ounces : digest them in Horse-dung for a month, or in Balneo, in a Glass Matres very well stopd.

IV. Then add to it sublimed Sal-Armoniack, and Salt of Tartar, of each equal in Weight.

V. Digest it with Spirit of Wine for 15. days, and then let it boyl, and in the bottom you will find a running Mercury, which dry, and wash with Salt and Vinegar, and again dry it.

VI. This Mercury amalgamate with Gold and Silver, and digest the Amalgama, that it may be turned into a red powder.

VII. Then nourish it with the like Mercury, digest it that it may be fixed, & again dissolve it: this do 7 times, and fix it till it be converted into a red powder.

VIII. One ounce of this powder, will make a projection upon an hundred ounces of melted Luna, and turn it into good Sol.

IX. And if this powder be dissolved in the water of Mercury, and digested into a fixed Oyl ; one ounce will project upon a thousand ounces of melted

Luna :

Luna: it will also project upon all other Metals, but chiefly upon Tin, and Lead.

C H A P. XLIV.

To fix and tinge Venus into good Luna.

I. **T**Ake of Mercury 7 times sublimed vj. ounces; Sal-Armoniack, as much: Calx of Luna calcined with Mercury two ounces: mix all together and sublime them.

II. What sublimes, add to the fæces, beat them together, and again sublime in a new Glafs: which work repeat till nothing sublime, but all remains at the bottom of the Glafs.

III. Then powder it, and in a moist place, let it run *per deliquium*; which liquor filter, purify, and congeal upon warm Ashes.

IV. Dissolve it again with the water which ascends, filter and congeal upon Ashes, which work repeat 7 times, and it will be a medicine; of which 1. ounce will change 50. ounces of Mercury into Luna; & tinge an hundred ounces of Venus into good Luna.

C H A P. XLV.

To fix Luna, and tinge it into good Sol.

I. **T**Ake Mercury seven times sublimed 3. ounces: Gold calcin'd (with Mercury, Salt and Sulphur) one ounce: Oyl of Crocus Martis often dissolved, washt and purified 3. ounces: rubified Sal-Armoniack 4 ounces.

II. Mix

II. Mix them together, and sublime them with a strong Fire in a Glafs Matres in Ashes: what sublimes, put again to the fæces which remain in the bottom, and repeat this so often till it will sublime no more.

III. Then what is in the bottom beat and powder very small: this powder put into a Glafs with holes in it, over a glafs Funnell, and in a moist place, let it melt *per deliquium* to water.

IV. This Water, filter, purify, and distill it: what remains in the bottom, dissolve again in the Water that distilled over: and repeat this till the matter remains in the bottom, in a moist, red, and fusible Salt.

V. One ounce of this cast upon an hundred ounces of Mercury warmed in a Crucible will transmute it into good Sol: and projected upon an hundred ounces of fine Luna, makes it all Gold of proof.

C H A P. XLVI.

To fix Mercury into fine Luna.

I. **T**AKE of calcin'd Tin 4. ounces, dissolve it in a sufficient quantity of the Virgins Milk, (in *Chap. 23.* foregoing.)

II. digest the Solution for 8. days in Warm Ashes, that the Calx may be dissolved.

III. Dissolve the Calx of Silver (*a*) in the same Virgins Milk, and digest it also for 8 days: at length joyn both these Solutions together, and distill them in Ashes.

IV. To the matter remaining in the bottom add
four

four ounces of the Oyl of *Sal Alcali* (b) and distill it, and dry it.

V. Then joyn both the distillations together, *viz.* what is distilled from the Virgins Milk, and what came from the Oyl of *Sal Alcali* or fixt Salt.

VI. In this Mixture dissolve the remaining matter in the bottom of the Glass, filter and purify it, and again distill.

VII. Repeat this Solution, filtration, and distillation, till the matter is turned into a fixt Oyl, or fusible Salt.

VIII. One ounce hereof will project upon an hundred ounces of crude Mercury made hot in a Crucible, and transmute it into fine Luna.

(a) *i. e.* Silver Leaves, but truly Calx of Silver. (b) See Chapter. 38. *aforegoing.*

C H A P. XLVII.

To fix Mercury into fine Sol.

I. **T**AKE of the best Minium *vj.* ounces : dissolve it in a good quantity of our Virgins Milk ; and digest it for 8 days.

II. Add to it of the Crocus Martis or of its Oyl 4. ounces : mix all together and putrefy it for viij days in Horse-dung or in a Balneo Mariæ.

III. Then distill to a dryness, and dissolve it again with its own water ; filter and purify it : repeating this work, till the matter is converted into a red and fusible Salt.

IV. Add to this Salt, of the Oyl of Sol 2. drams mix and digest till they are fixt : then in their own water

water dissolve the matter again: repeat this so often, till all be turned into a true and red fixt Oyl.

V. One ounce of this will fix and tinge a thousand ounces of Mercury, being made hot in a Crucible: it will also tinge Luna into fine Sol.

C H A P. XLVIII.

To fix Mercury into fine Sol.

I. **T**AKE Crocus Martis 4 ounces: of the best red Lead as much: dissolve all in a sufficient quantity of our Virgins Milk.

II. Digest the Solution in a Balneo, *i. e.* a bath for fifteen days; filter and purify it, then distill it to dryness in a Retort in Ashes: cohobate upon the faeces, dissolve, filter and purify again, and distill in a Retort to dryness; and do this till the Matter dissolve without any faeces.

III. Then dissolve and distill, till the matter be turned into a fusible Salt: to this Salt add Gold (calcined with Mercury, Salt and Sulphur) well washed, 2 drachms: Oyl of Sal-Alcaly or fixt Salt 3. ounces: mix and digest for 15. days.

IV. Then draw off the superfluous moisture, and cohobate by dissolving, filtering and distilling, so long, till your Salt is most pure, red, and fusible.

V. One ounce of this Salt will project upon, fix, and transmute a thousand ounces of Mercury into fine Sol.

C H A P. XLIX.

To fix Mercury into fine Luna.

I. **T**Ake of the best white Lead and of the Calx of Silver (calcin'd with Mercury) of each 20 ounces: dissolve them in our Virgins Milk.

II. Filter the Solution, and digest it in Balneo for 15. days; then add to the faces new Virgins Milk that all may be dissolved; for the Calx of the Silver is hard to dissolve, and will remain undissolved, if you be not careful.

III. You shall know when the Luna is dissolved; for then the faces in the bottom of the Vessel will seem spongie or light.

IV. After all is dissolved and made pure, distill to dryness: then dissolve and purify the Solution again, till all the matter be turned into a fusible fixt Salt; which will be done in 12. or 15. Solutions.

V. One ounce of this fusible Salt may be projected upon a hundred ounces of Mercury heat in a Crucible, and it will transmute it into good Luna.

C H A P. L.

To fix Mercury into true Sol.

I. **T**Ake the red mineral stone (a) heat it hot, and quench it in strong Vinegar (b), do so seven times.

II. Then beat and powder it very small, and dissolve

olve it in common *Aqua fortis* (c), putrefy the Solution 15 days in Horse-dung, or *Balneo Mariae*.

III. Filter the clear part of the Solution from the fæces, then distill it, and cohobate upon what remains in the Vessell ten times.

IV. Then dissolve in our Vinegar or Virgins Milk, filter and purify the Solution as before, and distill it.

V. Then dissolve it in Oyl or water of Mercury (d): let it be dissolved, dried (e) and distilled, untill it be turned into a fixt Oyl, or fusible Salt.

VI. To this Salt add oyl of Sol as much, then fix it, which is done by a short digestion because the said Solar Oyl is fixed (f) of it self; therefore the fixation is done in a very little time after they are mixed together.

VII. This red Tincture is multiplied, and its Vertue aud power increased and one ounce of this Tincture will project upon a thousand ounces of Mercury, and fix it into pure Sol.

(a) That is Cinnabar native or artificial, but rather native. (b) Here you are to understand Spirit of Vinegar, freed from all its flegm. (c) Understand the strongest *Aqua fortis* of the common kind, viz. that which is double. (d). See the preparation thereof in Chap. 33. aforegoing. (e) By drying here is meant coagulating. (f) Not that it is absolutely fixed in it self, for indeed it is most Volatile, but it is so called because it is of a fixing property, and fixes other things.

C H A P. LI.

To make the Oyls of Gold and Silver.

*See pages
fulcrum appo*

I. **T**Ake of the best Gold, (calcin'd with Salt, Sulphur, and Mercury, and then washed) two ounces: dissolve it in a sufficient quantity of *Aqua regia*.

II. Digest it in *Balneo* or Horse-dung for 15. days, and dissolve the Solution to the consumption of a third part: the rest take from the fire, and expose it to the cold Air, that the Gold may congeal (a) into yellow stones or Crystals.

III. Put these stones upon a Glass, and let it run to water (b), the rest of the Solution again distill to the third part, then expose it to the Air to Crystalise, as before, and run *per deliquium*, and distill as before.

IV. Repeat this work so often, untill the Crystals or little yellow stones are turned into a fixed Oyl.

V. But by cohobating upon it *Aqua fortis*, it will be sooner turned into a fusible Salt, (c). And after this manner is the fixed Oyl of Luna prepared.

VI. These Oyls are very necessary for the perfecting of severals operations and are the principal things of note in Chymistry; for we need no other secret, but these Oyls of Gold and Silver.

VII. And although there are many other things which can do it, yet these very Oyls augment and multiply, and are of that Virtue, that they are true ferments.

VIII. They turn all other fixed Oyls drawn from minerals or Metals into their own substances; and
so

so by the Oyls of Sol and Luna, the fixed Oyls of imperfect Metals are multiplied.

(a) That is, shoot into Golden Crystals. (b) viz. to dissolve into a liquor per deliquium. (c) This is according to the mind of Paracelsus, who thinks that by continual affusion of more of the dissolvent you will at length divide the matter into so small and subtile particles that it will become Oyl. See my Doron Medicum, lib. 2. cap. 1. Sect. 16. §. 1 & 5.

C H A P. LII.

To fix Luna into Sol.

I. **T**AKE of dryed Roman Vitriol twelve ounces: Antimony, and Sulphur, of each four ounces: Verdigrise, Sublimate, of each two ounces: Sal Nitre seven ounces; make of these a water according to Art.

II. Take one pound of this water, and add to it seven ounces of Crystals of Arsenick, in a large Glass matres with a long neck, which circulate till all be fixed.

III. Then dry it, and powder it: Take of this powder one pound, and cast it upon six pounds of melted silver; and it will make it somewhat brittle.

IV. Toast this metall upon a Cupell, till it be sweet, and then dissolve in *Aqua Regia*; what will not dissolve, melt with Borax in a Crucible, and you will find half the Luna turned into Sol.

C H A P. LIII.

To extract Mercury from Sol,

I. **T**AKE what quantity you please of Sol, calcined with Salt, Sulphur, and Mercury, and seven times repeated, by abstracting the Mercury in a Retort, and adding fresh Mercury to the matter remaining in the bottom of the Glass, till the Sol is reduced to a very fine powder.

II. Take of this prepared Gold two ounces: of the best white Salt of Tartar (from which the best rectified Spirit of Wine has been distilled) four ounces: common Salt decrepitated, dissolved, and congealed again two ounces: Sal-Armoniack purely sublimed one ounce: the best rectified Spirit of Wine six ounces: mix them all together.

III. Put all into a Glass Vessel, stopt well, and putrefy it in Horse-dung, or Balneo, for a month.

IV. Then distill off the Spirit of Wine, and if any Quicksilver remain at bottom, dissolve it in *Aqua fortis*; then draw off the *Aqua fortis*, and cohobate it three or four times.

V. At last put to it the best rectified Spirit of Wine, and make it to boyl, so shall you find the Mercury alone in the bottom of the Vessel, which purify very well, and keep it for perfecting of the following Arcanum.

C H A P. LIV.

To fix this Mercury into most fine Sol.

I. **T**AKE of the fore mentioned Mercury (of Sol) one ounce : of common Mercury drawn from Cinnabar, with Lime and Salt of Tartar, 20. ounces : mix all together, and put to it of the best oyl j. drachm : which mix well together in a strong Glafs.

II. Digest them for a month in Ashes, till the matter is turned into a fixed red powder.

III. Dissolve this powder in our Virgins Milk (a), the preparation of which we have formerly taught, filter and purify the Solution.

IV. Digest this in Horse-dung for a month : then draw off the Virgins Milk, and keep or reserve it for other secrets.

V. The remaining matter dissolve again in Spirit of May-dew, filter, and purify the Solution, and abstract it again by a gentle or slow distillation.

VI. This work repeat so often, till you have a Salt fusible as wax or butter : of which one ounce will transmute a thousand ounces of common Mercury (well washed or cleansed) into pure Sol.

(a) See Chapter 23. *afore-going.*

C H A P. LV.

To fix the Mercury of Luna into Luna.

I. **T**AKE of Mercury drawn from Luna two drachms : common Mercury, drawn from common sublimate two ounces and an half or twenty drachms :

drachms: Oyl of Luna two drachms: Oyl of Tin three drachms: mix all together.

II. Put them into a strong Glass mattress, and boyl in an Ash heat, till the matter is fixed into a powder, or white Salt.

III. This powder or Salt dissolve in our Virgins Milk; filter and purify the Solution: then distill off the Milk, and cohobate it several times, till all the matter be converted into a Salt, fusible as wax.

IV. Dissolve this fusible Salt in Spirit of *Mary-Dew*, and dulcifie it by cohobation: so long do this, till the Salt be turned into a true and white fixed Oyl.

V. One part of this oyl, will transmute a thousand parts of common Mercury into pure and fine Luna, and for ever fix it.

C H A P. LVI.

To cement Luna into true Sol.

I. **T**Ake of burnt brass j. drachm: Roman Vitriol made red, and of the best Crocus Martis, of each two drachms: Lapis Tutia, Sal-Armoniack, of each j. drachm: make them into a most subtil powder, and mix them together.

II. Take then of the finest Sol, and of the finest Luna, of each equal parts, melt them together, and make thin plates thereof, which cement with the former powder in a Crucible.

III. Lay them in the Crucible, *stratum super stratum* with the powder, which cover and well lute it, and cement for twenty four hours.

IV. Then wash the Plates, and melt them again,

and make plates, and cement as before with the same powder: this do seven times, and all the Luna will be turned into the most pure Sol.

C H A P. LVII.

To make Aurum Potabile to prolong life.

I. **T**AKE of the most pure and fine Sol, what you please, dissolve it in *Aqua regia* in which prepared common Salt is dissolved, and putrefy the Solution in Horse-dung for a month.

II. Then add thereto half a pound of rectified Spirit of Wine, digest in Balneo for fifteen days, and abstract the Spirit of Wine.

III. The Sol again dissolve, and cohobate seven times upon the matter remaining in the bottom.

IV. Now here is to be noted in this Solution, that the *Aqua fortis* (a) which is first put on the Gold to dissolve it, is to be seven times rectified in new Retorts, that it may be freed from the Salt.

V. The Sol being thus dissolved is then to be put into Spirit of *May Dew*, and so dissolved: abstract the Spirit, and dissolve again, and abstract to dryness.

VI. This dry matter expose to a cold and moist Air for a night, that it may be dissolved, and the acrimony of the *Aqua fortis* (b) be fully taken away.

VII. Dissolve again *de novo* with new rectified Spirit of Wine, and dry it by distillation; which work seven times repeat, till all the Sol is turned into a sweet Oyl.

VIII. This is *Aurum Potabile*, which will cure all diseases and Infirmities, and prolong life to extream old

old Age. Dose one grain or drop in a spoonful of good Spirit of Wine (c).

(a. b.) In both these places you are to understand *Aqua Regia*; (c) not rectified, for then it will be too strong to be taken: instead thereof you may use pure Canary, or, which is better, choice Cinnamon water.

C H A P. LVIII.

To make Argentum Potabile, to cure all diseases of the brain.

I. **T**Ake of fine Silver what quantity you please, dissolve it in a sufficient quantity of common (a) *Aqua fortis*.

II. Putrefie the solution in Horse-dung for a month, or in *Balneo Mariæ*; then distill the matter to dryness, and cohobate upon the fæces seven times.

III. Dissolve the matter again in Our Virgins milk; purify the solution by filtration, and putrefy again in Horse-dung for fifteen days.

IV. Abstract then the *Lac Virgineum*, and cohobate upon that which remains in the bottom.

V. Then dissolve with a sufficient quantity of the best Spirit of Wine: putrefy the solution in warm Horse-dung or *Balneo Mariæ* for eight days; abstract the Spirit and cohobate seven times; and if the solution be not clear, filter it.

VI. This done, abstract the Spirit of Wine, and dissolve in Spirit of *May Dew*; filter the solution, and abstract so many times, till the matter is converted into a fusible Salt, and sweet.

VII. And to make it sweeter, you may dissolve

it in new fresh rectified Spirit, three or four times, so will you have a pure sweet oyl of Luna or *Argentum Potabile*, for the cure of all diseases which affect the brain.

VIII. It is very certain, that if all the Oyls of Sol and Luna (before prepared) were often dissolved in the best rectified Spirit of Wine, and dulcified with Spirit of *May Dew*, and so freed from the Spirit of the *Aqua fortis*, they might with more safety and pleasantness be taken into the body for the curing of diseases.

IX. Neither is their Virtue and property of transmuting metalls into *Sol* and *Luna*, thereby weakned, but rather fortified and extended.

X. But see that you operate warily and skilfully, for there is what can be desired in Chymical preparations, if you can but obtain these Metallick Oyls, for the curing of diseases in men, and metalls, as experience can testify.

XI. Yea the bodys of Vegetables may be cured by these Oyls, perfectly dulcified; for all bodies, Animal, Vegetable, and Mineral have one and the same fountain of Life.

XII. And out of the same fountain, may be preserved, and brought to their utmost perfection, that can be, which few understand or believe.

(a) Without doubt you ought to take the best *Aqua fortis*, else you may chance to lose your labour.

C H A P. LIX.

To transmute Luna into Sol.

I. **T**AKE a pound of the best *Aqua fortis* distill it from the Sal-Armoniack, and common Salt prepared, of each three ounces: which repeat seven times.

II. Dissolve in this Royal water of the most fine Gold two ounces: and of Mercury amalgamated with such Gold four ounces.

III. Digest or boyl them in a strong Glass Matres in warm Ashes for a month, till the whole matter is converted into a red powder.

IV. This powder dissolve in the aforesaid water; and digest it in a warm *Balneo Mariae* for a month.

V. Then distill to dryness; cohobate seven times, by putting what is distilled upon that which remains dry at bottom.

VI. Add to the distilled water Spirit of *May Dew*, in which dissolve the matter, purify and filter the solution; this repeat many times, till the matter is converted into a fusible Salt.

VII. This Salt dulcify with the Spirit of *May Dew*, repeating it with fresh Spirit of *May Dew*, untill the Salt be sweet, and retains no acrimony.

VIII. One part of this will project upon a thousand parts of Melted Silver: and if you continue dissolving it in Spirit of *May Dew*, its Virtue will be thereby more and more augmented.

C H A P. LX.

To transmute Venus into Luna.

I. **T**AKE Mercury drawn from sublimate with Lime and Tartar eight drachms: of the best leaf Silver iij. drachms: mix and make an Amalgama.

II. Digest this amalgama in a Mattress well closed in warm Ashes for a month, till it is converted into a powder, or grows into a tree.

III. Let this Mercurial and Lunar tree be dissolved in common Aqua fortis made of Vitriol, Salt peter, and Alum.

IV. Digest this Solution in Balneo for a month, then abstract and distill to dryness; and cohobate seven times with the distilled water.

V. Then digest the matter with the most strong Spirit of Vinegar, filtering and purifying the Solution; which putrefy in warm Horse-dung for fifteen days.

VI. Then abstract by distillation; and dissolve what remains at the bottom with Spirit of *May Dew*, seven times rectified.

VII. This work so often repeat, till the matter is converted into a Salt fusible and fixed.

VIII. Project one part of this Salt upon a thousand parts of Venus, and it will all be converted into most pure Luna.

IX. Let this Luna, made fusible, be oftentimes dissolved in a cold and moist Air, and then congealed, that its Virtue thereby may be multiplied; so thereby you may prepare a Silver Mine, for the transmutation of Venus.

X. From

X. From this Mine, you may take every month, or every week half its weight to project on Copper.

XI. But let there be added to the remaining matter Mercury sublimed, or Crude; and so the Silver Mine or matter, will never decay; as will be manifest by the following Arcanum. The same may be done with Sol.

C H A P. LXI.

A Perpetual Silver Mine, that will never decay.

I. **T**Ake of the Silver and Mercury in the former Chapter, one pound: to which add of the Mercury drawn from Cinnabar, with Lime and Salt of Tartar by distillation, half a pound.

II. Mix, and beat all together in a Glass Mortar with a Glass Pestil: then put it into a Mattress with a long neck, which close well; and digest it in warm Ashes for a month: in which time it will be all fixed and converted into one substance with the former.

III. Then take half a pound thereof, and cast it upon an hundred pounds of purified Copper melted, and it will all be pure Luna.

IV. Now that this Mine may not decay; put half a pound of prepared Mercury or common Mercury well washt to the aforesaid Mine in a Glass Mattress: and boyl or digest it for a month (close stopt) in warm Ashes; so will the whole Medicine be of equall Virtue with the first.

V. And by this manner of feeding it with Mercury, your Mine will last for ever; so that every month
you

you may take out half a pound, for the transmutation of Venus into good Luna.

VI. In the same manner may you likewise proceed with Sol, as shall be declared in thy following Arcanum.

C H A P. LXII.

A perpetual Golden Mine, to transmute Luna into Sol.

I. **T**Ake of the Sol, prepared by some of the former secrets; or at least, Sol that is by Art converted into a fixt Oyl or Salt which is fusible: Take of this fusible Salt of Gold a pound: of Mercury, drawn from Cinnabar as is before taught, half a pound.

II. Mix, and beat all together in a Glass Mortar, with a Glass Pestil; and put it into a strong Glass Mattress, with a long neck, which stop or close well.

III. Put this Mattress to digest in warm Ashes for a month, and in that time all the Mercury will be converted into a Medicine, of equal Virtue with the former.

IV. Take of this medicine one part; and cast it upon a thousand parts of melted Luna, and it will all be turned into good Sol.

V. To the remaining matter, add half a pound of Mercury prepared (*ut supra*) and digest it for a month; so will you find, that your Golden Mine will be inexhaustible. Thus by the pure Oyls of Sol and Luna, are made the Golden and Silver Mines.

C H A P. LXIII.

A tinging Water to tinge Luna.

I. TAKE of burnt brass (prepared, and dissolved in common (a) *Aqua fortis*, and desiccated by abstraction of the *Aqua fortis*) half a pound: of the Tincture of Mars, or of *Crocus Martis*, dissolved into oyl, half a pound: Roman vitriol calcined only to whiteness, one pound: crude Antimony, Sulphur, and Mercury sublimate, of each iij. drachms: Verdigrise, Lapis Tutia of each two drachms: powder them all and mix them.

II. Put them all into a Glass Retort well luted, and from hence draw an *Aqua fortis*, and therewith oftentimes imbibe this matter.

III. Then calcine it in a Crucible with common Salt, and common Mercury; or else dissolve your Luna in a Glass Alembick, and abstract the *Aqua fortis* by distillation; what remains in the bottom will be tinged Luna.

IV. This tinged Luna may with Borax be reduced into a body, throughly tinged with the highest Golden Colour.

V. The fæces of this *Aqua fortis* are very profitable to cement Luna with equal parts of Sol, to tinge it into a Golden Colour; they being mixt in equal quantities, made into Plates, and cemented with the said powder for 24 hours, in a well luted Crucible according to Art.

(a) That is made by the common Recipe, but you ought to take the best of that kind, viz. double *Aqua fortis*.

C H A P. LXIV.

To multiply Luna.
How to Rile Mercury.

I. **T**Ake of the best Mercury, well washed, two drachms: kill it with common Salt, and

M Mans spittle, by strongly Grinding of it in a Glass Mortar with a Glass pestil.

II. Being thus mortified or kill'd, put it into a Crucible, and upon it powder of Crystalline Arsenick half a drachm: Tartar calcin'd to whiteness with Salt peter, as much.

III. You must have ready another Crucible, in the bottom of which let plates of Copper be made fast, that they may not fall down when it is joyned with the lower Crucible.

IV. Joyn both the Crucibles together, viz. that with the Mercury, Arsenick and Tartar, to that with the Copper, letting that with the Copper be upper most, and lute them well together, that nothing may perspire.

V. Then put them into a Reverberating fire for four hours: for the first hour let the fire be soft and gentle; for the second stronger; for the third approaching to the highest degree: and for the last hour, cover all over the Crucible with live or burning Coals, and make the fire very strong for that hour.

*And
 for a
 great
 Heat*

VI. Then let the fire go out, and the Crucibles cool: being cooled, take forth the matter in the upper Crucible, adhering to the Copper Plates, which keep.

VII. Take pure fine silver one drachm, melt it, and

and put to it by degrees the Mercury found in the former superiour Crucible, and upon it crude Tartar, till you see the matter clear and splendid, so will your Silver be augmented to the one half.

MB

CHAP. LXV.

To tinge Luna into Sol.

I. Take of the red oyl of Antimony, and of the red oyl of Mars, of each three drachms: distill them together till they be purely clear and red.

II. To this add the Oyl of Sol four drachms: mix them together, and boyl or digest till they are all fixt into a fusible Salt, or fixt oyl, which will be done by the help of the oyl of Gold.

III. When they are all fixed, project one part upon an hundred parts of pure Luna, and it will all be transmuted into fine Sol.

IV. These Oyls of Antimony and Mars we have already taught to make in several of the aforegoing Arcanums, as also the Oyl of Gold, so that it is not necessary here to repeat the same again.

V. But the true Oyl of Antimony we have not yet taught, but in the following Chapter you shall certainly find it.

*to seek
the
receipt
for these
oils*

*Chapter 57
Page 559*

CHAP. LXVI.

To make the true Red Oyl of Antimony.

I. TAKE male mineral Antimony (which is known by its long and sparkling beams, for the female is different, and known by its slender and small beams) three pounds : powder and dissolve it in vi. pounds of the powder of *May Dew*.

II. Mix them in a long neck't glass Mattress ; and let them putrefy in Horse-dung for two or three months ; or in the pressings of the Vintage, where the Putrefactive heat is more exact, and in which you may keep it for a month.

III. Then distill the matter by an Alembick put upon the head of the Mattress, in warm ashes ; and distill what ever you are able to bring over.

IV. That which comes over, put upon fresh male mineral Antimony, and digest as before for a month, two or three, and distill it after the same manner.

V. Then put what is distilled forth on fresh mineral Antimony, and digest it for fifteen days ; then distill it *de novo ut prius* ; and repeat this so often, till the Spirit of the *May Dew* does arise with the Spirit of the Antimony.

VI. Then take of this acid Spirit one pound : of Male mineral Antimony half a pound : digest them in warm ashes for a day, shaking the Glass often, till the acid Spirit be tinged of a red Colour.

VII. This red Tincture decant by Inclination, and affuse thereon fresh Spirit ; repeat this so often, by pouring off, and putting on fresh, till you have a great quantity of tinged Spirit.

VIII. Put

*May Dew
is an
acid
Spirit*

VIII. Put all these together, and distill them in *Balneo Maria* with a very gentle heat, till nothing more will arise.

IX. And in the bottom of the Glas Alembick, there will remain a red Tincture of Antimony: this distill *per Cineres*, and a red Oyl of Antimony will ascend.

X. This rectifie two or three times in a Glas Retort, and the Oyl will be pure Red.

XI. This Oyl distill with the Oyl of Mars; and mix it all with an equal quantity of the Oyl of Gold, and all shall be fixed as in the former secret; and it is a most wonderful thing to tinge Luna into Sol.

XII. If you putrefie male mineral Antimony in Horse-dung with water of Turpentine; the Spirit will be tinged into the Colour of blood.

XIII. This Spirit thus rubefied, being digested upon new and fresh male mineral Antimony, will cause it to yield more copiously the Oyl of Antimony.

XIV. And this Oyl will be of the same Virtue with the former, being prepared after the same method, as when dissolved in Spirit of *May Dew*.

*How
to Colour
Sol,*

M3

M3

C H A P. LXVII.

To fix Luna.

I. Dissolve Sal-Armoniack an ounce, in the water or flegm of Vitriol, and as much, viz an ounce of Sulphur Vive.

II. Distill them in a Glas Retort: and after that the flegm of the Vitriol is come over, increase the fire, and

and sublime the Sal-Armoniack with the Sulphur Vive.

III. Cast of this Sublimate a sufficient quantity, on-melted Silver in a Crucible, and it shall be fixed to receive the following Tincture.

C H A P. LXVIII.

To extract a tincture from Mars, to Colour Luna.

I. **T**AKE filings of the best steel, heat them red hot in a Crucible, and quench them in strong Vinegar: this repeat seven or ten times.

II. Then take four ounces of these filings: of Sal Armoniack two drachms: Mercury sublimate, as much: dissolve the sublimate and the Sal Armoniack in warm water, and filter it.

III. Put this upon the aforesaid filings in a Glass Retort, or an Alembick: after two or three days abstract the water: and what remains in the bottom, dissolve in our Vinegar or Virgins Milk, and it will be tinged into the Colour of blood.

IV. Decant the tincture, and affuse more Vinegar or Virgins Milk, untill the matter will yield no more tincture: then distill it, and in the bottom of the Alembick will remain a red most excellent Oyl.

V. This Oyl will be better, and more penetrating, if you cohobate upon it the Vinegar or Virgins Milk, which will not ascend, but remain in the bottom of the Alembick.

VI. One part of this Oyl cast upon fifty parts of melted Luna, will turn it all into fine Sol.

VII. And if to this Oyl, you joyn an equal quantity

quantity of the Oyl of Gold, and fix them together in Ashes by digestion for a month, your medicine will be the more perfect.

C H A P. LXIX.

To reduce Sol into Mercury with common Mercury.

I. **T**AKE of the best Sol purified with Antimony, and made into small filings or thin leaves, two ounces: amalgamate it with twenty four ounces of common Mercury, washed and purged very well.

II. Divide the Amalgama into four parts, and put it into four several Glasses, add to it twelve times as much *Aqua Regia*, distilled with Sal-Armoniack, as the Amalgama weigheth.

III. So divide this water, that in each Glas there may be the weight of the Amalgama, so that these twelve parts may dissolve the whole amalgama in a month by digestion in Ashes.

IV. When the Amalgama is dissolved, distill off the *Aqua fortis*, and dulcify the remainder with fountain water, till all the Antimony of the Salt or *Aqua fortis* is taken away, and the water comes off sweet.

V. Let the water be very pure and clear, or distilled; and have a care that no dust or filth fall upon the powder.

VI. Dry all your matter very well in an Alembick, that the Mercury may be saved.

VII. Then increase the fire, that the whole Mercury may be brought over into the Recipient, and

in the bottom you will find a calcin'd Salt, which Reverberate for fifteen days in a Reverberatory.

VIII. So will your Sol be well calcined and brought into an impalpable spongy powder.

IX. Take half this Gold thus calcined, and the Mercury that was distilled from it, being well washed from the impurities it contracted from the *Aqua fortis*: take of it as much as of the calcin'd Gold.

X. Mix or amalgamate them very well together by beating or rubbing them in a Mortar.

XI. Then put it into a Glass well stoppt, which bury in warm Ashes for five days, until it be reduced into a red powder.

XII. To this matter add a third part of fresh Mercury, beat or grind, and mix them together and boyl or digest them in a Glass Mattress, till all be converted into a red powder.

XIII. Repeat this so often, until the Sol hath imbibed fifteen times its own weight of Mercury.

XIV. Put this powder into a great quantity of common water distilled: stir it with your finger that the water may be thick or troubled; then decant it whilst it is so troubled, and put it into a Glass Vessel.

XV. Put on more of the same matter upon the remaining matter, stirring and moving the water, till it is troubled again; then decant it immediately.

XVI. Thus continue, untill the water has taken up all the powder, so will you have a very subtile powder.

XVII. And if there be any thing in the bottom which will not be taken up with the water; calcine it with Mercury, by mixing, grinding and digesting them in a Glass Mattress.

XVIII. Then pass it all through water as before: take

take this water, and let it settle, and let fall its faces: decant the water from the faces; so will you have them of a Golden colour.

XIX. Dry them with a gentle fire, and put them into a Glass Mattress, and digest it in Ashes for a day; then take out the powder, and beat or grind it in a Glass Mortar, and digest it in warm Ashes as before.

XX. Then take it out and beat it again, and repeat this eight times, digesting for a day at a time.

XXI. Beat or grind, and digest it again, then put the powder into a strong Glass Mattress well luted and stopt and bury it in a very hot sand, making under it a very strong fire, and the superfluous water of the Mercury will come forth first.

XXII. At last, the Mercury will come forth in great quantity; for all the powder will be turned into Mercury, and there will nothing remain in the Vessel but a black powder.

XXIII. This powder by a strong fire, will be turned into a black Glass. And thus is the Gold reduced into Mercury with common Mercury.

XXIV. The Mercury is amalgamated or joyned with the Spirit and Soul of the Gold, and is called animated Mercury; of which are made Golden Mines by the following method.

C H A P. LXX.

To make a Golden Mine.

I. **T**AKE of the Gold above calcined, whereof we have left a half part for this Arcanum: Take I say three drachins, or as much as you have left;

left; and put to it a third part of our animated Mercury, as before prepared.

II. Digest it in a Glass Mattress, buried in ashes; then give a strong fire, that some of the Matter in the Mattress, may be fixed.

III. Put back that which comes over in the distillation, upon that which is fixed, and beat them together, incorporating and mixing and digesting or boiling in a Mattress till the Calx of Gold has drunk up much of the Mercury.

IV. And if the animated Mercury be spent with the Spirit of the Gold; then substitute in the place thereof common Mercury well (washed) dissolved, or purified.

V. So will the red powder increase in an infinite quantity; and you may increase as much of this Mercury as you please, making all running and live-Mercury; and it shall be animated Mercury, and of the same Virtue and efficacy with the former.

VI. Which must again be digested or boyled with the Calx of Gold, and by degrees converted into a red powder.

VII. Of this powder make little pills with Gum Tragacanth dissolved in water, and project it upon melted Gold in a Crucible, and the Calx will be melted with the Gold, and the Gold multiplied.

VIII. After this manner will your Calx be turned into fine Gold; and your Mine be made to increase for ever.

IX. But then you must keep the said Calx of Sol fermented with the water of Mercury, and convert it into a red powder, and then into animated Mercury, and this animated Mercury into a Calx, and this Calx project upon melted Gold.

C H A P. LXXI.

*To make the aforesaid Mine have the Vertue of tinging
Luna into Sol.*

I. **T**AKE what quantity you please of this mineral or Mine, and put it into a strong Glass Mattrass well stopped in warm Ashes, with a gentle fire for fourteen days, till the Calx has acquired a most red Tincture.

II. This very red Tincture it acquires only by this digestion, by Vertue of the Spirit of Gold, which gives the most perfect red.

III. If it be digested longer, it will acquire a greater red, till it looks like deep Saffron or burnt blood, so deep will be the tincture.

IV. Take of this rubified Calx of Sol three drachms : of the Oyl of Sol as much ; and as much of the oyl of Mars, and the red oyl of Antimony, as above prepared.

V. Mix and incorporate all together and digest till they are all converted into a most red powder : one part of this will project upon a thousand parts of melted Luna, and transmute it into fine Sol.

VI. If this powder be dissolved in our Virgins Milk, into a fixt Oyl, be filtered, and clarified afterwards, and digested and fixed into a sweet oyl with Spirit of May Dew, as we have before taught in many of these our Arcanums, it will transmute ten thousand parts of melted Luna into fine Sol.

VII. And if this Oyl be yet subtilized and attenuated, it will transmute Luna without fire, into
P P 3 Sol,

Sol, and that by bare infusion of the Luna in the said Oyl.

C H A P. LXXII.

To transmute Mercury into Sol.

I. **T**Ake Mercury j. pound: crude Vitriol, Verdigrise, crude Tartar, common Salt of each one pound.

II. Put the Vitriol, Verdigrise, Tartar, and common Salt, into an Iron pot, upon which affuse the strongest Vinegar, that they may all be dissolved.

III. Being dissolved, put to fire, that they may boyl; and when they begin to boyl, put the Mercury into the Pot, and continue the boyling till the half part of the Vinegar is consumed, or something more.

IV. Then take it from the fire, and stir or shake the matter, and decant what is liquid into an Earthen Vessel; and in the bottom of the Iron pot, you will find your Mercury half congealed or coagulated.

V. This wash very well with common water till the water comes off clear.

VI. Then digest all this Mercury again with the liquid part of the Vinegar which you decanted out of the Iron Pot; and clarify by adding new Vinegar, and boyling again for two or three hours in that Vinegar in which the Verdigrise, common Salt, Tartar, and Vitriol were dissolved.

VII. After this decant the liquid part by Inclination, and you will find the Mercury half congealed: This Luna wash again with common fair water, till the water comes off clear.

VIII. Expose

VIII. Expose this Mercury to a cold and moist air for three nights, and it will be coagulated very hard.

IX. Reduce it into a very subtil powder; and mix it with the Yolks of Eggs and Crocus Martis, pure Earth (Chalk) *stratum super stratum* in a Crucible, giving a strong fire for two or three hours; and your Mercury will be like Copper.

X. This joyn with an equal quantity of cupellated or tested Luna; melt them together and test them, and you will find your Luna tinged.

XI. This tinged Luna melt with an equal weight of the best Sol, and all will be pure and fine Gold, of a most pure colour.

XII. And if your coagulated Mercury (made hard in the cold) be reduced into a most subtil powder, and imbibed with Oyl of Mars, and then melted with Luna, all the Luna will be tinged into Sol.

XIII. And thus Mercury may be transmuted into the finest Sol which shall stand all tryals, if fine Sol be joyned therewith.

XIV. For the Spirit of Verdigrise does convert and fix Mercury into Copper; and then the oyl of Mars does augment its Tincture, and communicate it to the Silver; and by adding fine Sol thereto, all is made into pure Gold.

C H A P. LXXII.

To transmute Mercury and Luna into Sol.

I. **T**Ake of the Mercury aforesaid coagulated and fixed in an Iron Pot with Verdigrise, Vitriol, Tartar and common Salt: Take I say of this

Mercury sixteen drachms: of silver calcined with Salt, Sulphur and Mercury, as much.

II. Mix them well, and imbibe this Calx with the Oyl of Mars three or four times, imbibing and drying it in a Crucible.

III. Add then of Mercury Sublimate seventeen drachms: and beat or grind them well together, and imbibe it three or four times, imbibing and drying it in a Crucible: then melt it, and all will be pure fine Sol.

IV. This Sol, if thou dissolvest in our Vinegar or Virgins Milk, and it be digested into a red fixed Oyl, and then conjoynd with equal weight of the Oyl of Gold, and fixed together, you will have an oyl, one part of which will project upon an hundred parts of melted Luna, and transmute it into fine Sol, at all assays.

C H A P. LXXIV.

To tinge Venus into Luna.

I. **T**Ake of Luna calcined with Salt, Sulphur and Mercury, and three times repeated with fresh Salt, Sulphur and Mercury: take I say, of Silver thus prepared eighteen drachms: which imbibe in the following water eleven times, imbibing and drying in a Crucible upon the Luna.

II. Then take of Sal-Armoniack eighteen drachms: Mercury seven times sublimed seventeen drachms: mix them together and dissolve them in warm water distilled; and filter the Solution.

III. In this water imbibe the aforesaid Calx of Silver, and then dissolve it in Spirit of Vinegar.

IV. That

IV. That which will not dissolve in warm Ashes, calcine again with fresh Salt, Sulphur and Mercury.

V. This Calx imbibe and exsiccate in the aforesaid Water of Sal-Armoniack, so often, till it is all dissolved.

VI. These Solutions of Luna a put into Glass Alembick or Retort, cohobating oftentimes upon the remaining matter in the bottom, till the Vinegar does ascend sweet and insipid.

VII. Then add fresh Vinegar, and again dissolve and coagulate, and that seven times, till the Vinegar ascends sharp, and the solution be turned into a fixed Oyl or fusible Salt.

VII. One part of this Oyl projected upon an hundred parts of melted Venus, turns or transmutes it all into good Luna.

C H A P. LXXV.

To tinge the same Venus into Luna.

I. **T**AKE of the before prepared Alkali Oyl (in Chap. 38) Mercury seven times sublimed with fixed Sal-Armoniack, of each twenty drachms.

II. Dissolve them in warm common water distilled; filter the Solution, and abstract the water by distillation.

III. Take this Salt and Mercury, with oyl of Tartar, and dissolve them in the strongest Spirit of Vinegar, and distill to dryness.

IV. Cohobate this Spirit of Vinegar now drawn off, so long till the matter is converted into a fixt oyl.

V. Project

V. Project one part of this Oyl, upon an equal weight of melted Luna; mix them well in a Crucible, and the Oyl will be reduced to a powder.

VI. Take of this powder one part, and project it upon a hundred parts of melted Venus, and it will be all, most fine Luna.

VII. If you dissolve this powder in our Vinegar, it will be converted into a fixed Oyl: one part of which will transmute a thousand parts of melted Venus into the best and most pure Luna, not to be parallell'd in purity, whiteness and sound.

C H A P. LXXVI.

To tinge Luna into Sol.

I. **T**AKE crude Antimony twenty drachms: as much *Crocus Martis*: crude Tartar twelve drachms: Salt Peter as much: powder and mix them.

II. Then put it into a strong Crucible, and with a Violent fire calcine for six hours: melt it well, that the Regulus may fall to the bottom of the Crucible.

III. The Crucible being cold break it, and take out the Regulus: the rest of the matter dissolve in pure clear fountain water; boyl the Solution and filter it.

IV. To this filtered liquor, add by degrees distilled Vinegar, *viz.* drop by drop, and a Golden Sulphur of Antimony will precipitate to the bottom.

V. To this Sulphur well dryed add an equal quantity of *Crocus Martis*, and as much of fixed Sal-Armoniack,

moniack, with sixteen drachms of Mercury sublimate.

VI. Mix them all and let them stand in a Glass Mattrass with a long neck in a strong sand heat for a month: then dissolve all in common water, distilled and warm; filter the solution, and it will be of a fine red Colour.

VII. Distill it now to dryness, dissolve again, and distill to dryness, doing thus fifteen times.

VIII. So shall you have at length, a red fixed Oyl; to which add the oyl of Sol and Oyl of Antimony, and digest them in a Mattrass for a month, till they are all united and fixed together.

IX. So will you obtain a fixed Oyl, one part of which being projected upon a thousand parts of melted Luna, will transmute it all into good Sol at all assays.

X. But it will be more strong and effectual, if the Luna on which you do project be fixed: yet the Consequence of this is not very great in this work, because here the *Oleum Solis* does fix the Luna.

XI. Thus have you a Golden oyl of the fixt Sulphur of Antimony, wonderful efficacious, in the transmutation of Metals, if you know how to work.

C H A P. LXXVII.

To tinge Luna into fine Sol.

I. **T**Ake of the water from the above prepared Regulus of Antimony (before the Sulphur is precipitated from it with Spirit of Vinegar) two pounds; *Crocus Metallorum* well rubified as much.

II. Make an Amalgama or paste of the *Crocus*, which

dry with a gentle fire, then calcine it in a Crucible for four hours, after which dissolve it in common distilled water, or May-Dew.

III. Purify and filter the Solution; and what of the *Crocus* will not dissolve, calcine in a strong Crucible with a most vehement fire for a day and a night.

IV. Then imbibe it again with the aforesaid water, and make it pure; which dry, and calcine for two or three hours: after which dissolve it in Spirit of May Dew.

V. Repeat this the third time, calcining what doth not dissolve, till all the *Crocus* is turned into a most red water.

VI. To this water add Mercury seven times sublimed, and digest till they be turned into a red Oyl: project one part of this upon thirty parts of melted Luna, and it shall be all fine Sol.

VII. But if an equal quantity of the *Oleum Solis* be added to it, and fixed together in a Glass Mattress for a month, it will be the more effectual and powerful in transmutation.

C H A P. LXXVIII.

To make a Water of Mercury.

I. **T**AKE of Cinnabar of Mercury sublimed from Vitriol and niter three or four times, always taking fresh Niter and Vitriol: the Mercury thus prepared by the Cinnabar put into a sufficient quantity of pure white Salt of Tartar.

II. Dissolve it by a Retort, and bring over the Mercury

Mercury in a live and running body: this strain through a cloth or leather, and mix with it an equal quantity of common Mercury.

III. Put them together into a Retort, and digest in *Balneo* for eight days, then distill by a Retort in Ashes, so will you have a water come over in great quantity.

IV. That which remains in the bottom, will be a white Salt, which dissolve in a moist place, and rectify it by distillation in a Retort, always dissolving what remains in the bottom.

V. That which will not ascend, joyn with your first distilled water, and rectify it seven times, and it will be the best water for performing of many great works, but chiefly the following Secrets.

C H A P. LXXIX.

Toting Venus into Luna.

I. **T**AKE Luna calcined with Salt, Sulphur, and Mercury three ounces: dissolve this Calx of Luna in a sufficient quantity of the afore prepared Mercurial water.

II. Digest this dissolution in a gentle heat, and distill off the *Aqua Mercurii*, and cohobate it on the matter, till nothing more will rise or ascend.

III. Thus at length you will have *Oleum Luna*, which will transmute Venus into good Luna, one part being projected upon fifteen parts of melted Venus.

C H A P. LXXX.

Another way to make the Aqua Mercurii.

I. **T**Ake of Sol calcined with Mercury, Salt, and Sulphur, three ounces; dissolve it in the above prepared Mercurial water.

II. Distill the solution, and cohobate so often upon the Solar Calx, till it is converted into a fixed Oyl, or fusible Salt, having passed through all colours, and becomes red, fixed, and fusible as Wax.

III. One part of this fixed Salt, will transmute an hundred parts of fine Luna, into pure and fine Sol.

IV. If this oyl be joyned with a sufficient quantity of the *Aqua Mercurii*, and distilled, and all be made volatile; and after by constant digestion be again fixed, its Power and Virtue will be multiplied *ad infinitum*.

C H A P. LXXXI.

To make the Aqua Mercurii another way.

I. **T**Ake common Mercury well washed and squeezed through Leather, and inclose it in a strong Mattress with a long neck, which seal up Hermetically.

II. The Mattress being thus sealed up, put it into a putrefying heat with Woad, *viz.* where the Woad is prepared in the shops to dye cloth with, there being a great heat, for four or five months: let the Glass

I say

Chap. 82. *To make an Elixir of white stones.* 591

I say be buried in the warm Woad, up to half the neck.

III. Leave it in that heat for three or four months, and in that time will all your Mercury be turned to water, which rectify seven times, till it be most clear, pure and limpid, and leaves no fæces in distillation.

IV. With this Mercury you may work great things in the perfect Metals by dissolving and coagulating them, and converting them into a fusible and fixed Salt.

V. Thereby you have many Secrets, and Elixirs to tinge Luna into Sol, and Venus into Luna; and the rest of the imperfect metals, as Tin and Lead into Sol and Luna.

VI. This *Aqua Mercurii* may be made in a putrefying heat of the pressing of Grapes, which being rectified, is of the same Virtue and Efficacy.

C H A P. LXXXII.

To make an Elixir of the white stones found among Lead.

I. **T**AKE the white stones which are found in Leaden Mines, and towards the North of the same Mines; for that it is most moist: Take I say a stone newly taken out of the Mine, and break it into little pieces, with little pieces also of the Mine or Ore.

II. Put them all into a Retort well luted, and distill for two days in a strong fire, till the Retort grows red hot.

III. Let the Recipient be large and to a third part full

full of the Spirit of May-dew that it may receive the Spirits that come over.

IV. When all the Spirits are drawn over, and the Retort has been kept in a red hot heat for two or three dayes; then take it from the fire, and being cold, break it.

V. If the matter be of a red colour, it is well; but if it be more of a white, then it is to be calcined in a Crucible, with a very strong fire, for six or eight hours.

VI. Now we come to the water which is to be distilled with a very gentle heat, till the Acid Spirits ascend, or are come forth, which are to be received in an open Vessel.

VII. And the Spirits of May-dew which will ascend first are to be kept: but in the Acid Spirits are to be dissolved the calcined matter, upon which a great quantity of the said Spirit is to be put; and in a Glass Vessel.

VIII. Let it be well stopt, and made to boyl for an hour, then filter and purify it.

IX. Upon the matter remaining undissolved, put more Acid Spirit, and boyl it again in a Glass Vessel close stopt for an hour, which filter and clarify as before.

X. Mix and distill all the Solutions to dryness; and dissolve the matter again by affusing thereon all that which has distilled over.

XI. This solution filter and clarify, and distill again; which work so often repeat till you have a white Salt or powder.

XII. If all the matter will not yet dissolve, but some of it does remain, it must be calcined again, and dissolved as before, till the whole or intire matter is dissolved, and converted into a fusible Salt, which
is

is so often to be dissolved in our Acid Spirit, till by repeated distillations it is brought to a volatility.

XIII. And it is then farther to be dissolved in the said Acid Spirit, till by repeated distillations it is brought to a water, which is to be rectified seven times at the least.

XIV. Then it will have acquired an exceeding penetrating Virtue in dissolving of all Metalls: and in this water thus prepared is to be dissolved the perfect Metals, as Sol and Luna; one part of the Metal in ten parts of the water.

XV. Mix, dissolve, and digest the Solution, or boyl it, in a Glass Matrass, well closed or sealed up Hermetically, which is better: digest for nine or twelve months; until the water with the Metal dissolved be converted into a fusible Salt; fixed and red, if you have dissolved Sol in it; or fixed and white, if you have dissolved Luna in it.

XVI. Thus at length is it become a wonderfull and strange Secret, the true Arabian Elixir, stupendiously converting all impure Metals into Sol or Luna.

XVII. And by dissolving this powder after congelation, in new and fresh water above prepared, it acquires far greater Virtues in transmutation,

XVIII. And from hence its Virtues and force may be augmented to an Infinity:

C H A P. LXXXIII.

To prepare an Elixir from Pearl.

I. **T**Ake Golden or Silver coloured Pearls, as many as you please, powder them, and mix
Q q the m

them with an equall quantity of Sulphur Vive.

II. Calcine them in a Crucible with a strong fire, untill the Sulphur be consumed; then add new, but not so much as before, and calcine it as formerly.

III. Increase the fire, and make the Crucible red-hot, for four or six hours; then let it cool, take out the matter, and beat it small.

IV. Put it into a Retort, lute it well all over, and distill in a strong fire, that all the Acid Sulphureous Spirits may come forth, which are to be received in a Vessel half full of May-Dew.

V. When all the Spirit is come over, break the Retort, and take out the Matter, powder it and expose it to the cold air for a night, then put it into a well luted Retort, and with a strong fire distill it into the same receiver, that the yet remaining Sulphureous Spirits may be brought over.

VI. Repeat this work seven times, exposing it to the Air, and then distilling of it, untill the water in the Recipient have an Acid taste.

VII. Distill this water in a gentle fire lest it boyl, and when the Acid Spirits come forth, change the Receiver, and put a clean Receiver to, that you may receive them a-part.

VIII. Rectify them seven times, that they may be purified: and in this Acid Spirit dissolve the matter left in the bottom of the Retort, after the first distillations.

IX. And in a Glass well stopt, with a gentle fire, digest the Solution, then filter it, and upon the remaining undissolved matter, put more Acid Spirits.

X. Dissolve by digesting and filter the Solution; this do, till the greater part of the matter prepared from the Pearls be dissolved.

XI. Distill

XI. Distill this solution to dryness, and put the remaining dry matter into the water distilled from it; purify and filter the Solution; this do, till you have a pure Salt without any fæces subsiding in the Solution.

XII. Take of this Salt what quantity you please, and dissolve it in fresh Acid Spirit well dephlegmated, and digest the solution in a gentle heat.

XIII. Then distill to dryness, keeping the Vinegar, and casting away that which comes over first, because it is insipid; or if you please you may put it to the insipid distilled water.

XIV. Repeat this work, till the Salt becomes volatile, and ascends with the Acid Spirit.

XV. And thus often dissolve it in the said Vinegar, always separating the flegm which comes first, and repeat it till your Salt be turned into an Acetum, and rises with the Acid Spirit.

XVI. This Spirit rectify seven times, by separating it from its flegm; and in this Spirit thus Rectified, dissolve the perfect Metalls; one part, in ten parts of this divine water.

XVII. Digest this solution in a Glass well stoppt, or Hermetically sealed (lest any thing ascend) until the matter is fixed into a fusible fixed Salt.

XVIII. But first it is to be dissolved four times in our Acid water, and fixed and coagulated.

XIX. Thus have you at length an Elixir most powerful for the transmutation of imperfect Metals into Sol and Luna.

XX. If there be Sol or Luna dissolved in this Acid water, and congealed by a continual digestion, you will have a stupendious Elixir for the great work.

XXI. This Metallick Spirit of a Mineral, may

be drawn from any Marchasite or Mineral, because, it is inherent in them, and does give the formal and essential being to them all.

XXII. But the way of drawing it is more facile in some than in others.

XXIII. And the true way according to the Chymical Art is here most faithfully delivered, if you understand the way of calcining, dissolving, distilling, and such other like Chymical operations.

XXIV. For these things are absolutely necessary for you to know, that you may separate from the Spirit all facultential Impurities, the dross or Lees of the Elements.

XXV. This being thus perfected, there remains nothing at last to be done, but only to digest.

C H A P. LXXXIV.

To make small Pearls into great ones.

I. **T**AKE of the least yet clearest and brightest Pearls, what quantity you please, dissolve them in our acid Spirit, or in the water of Mercury, distilled twelve times or more, till it is sweet and clear.

II. In this water I say, dissolve your Pearls in a Glass, which stop well, and put it over a gentle heat.

III. When all your Pearls are dissolved, filter the solution and purify it, and distill in a gentle Balneo.

IV. When the distillation is over, cohobate the distilled water upon the remaining matter, that it may again be dissolved and purified.

V. This

V. This work reiterate so long, that at length it may dissolve without any fæces, and remain more clear and splendid at the bottom of the Alembick like true Pearls.

VI. Then have in a readines Silver Moulds, which let be gilded with Gold, made of that bigness and figure you desire your Pearls to be of.

VII. And with a silver Spatula take your matter thus prepared, and fill your Moulds on both parts, which let be perforated with a small hole, to pass a silver Wire or thread, through that the Pearls may be bored through.

VIII. Then close your Moulds, (being full of the prepared matter) and let them stand for two or three days in a warm place, that they may harden.

IX. After which take out your Pearls from the Moulds, and put them into a warm Glass, which cover with another Glass.

X. Or rather hang them in a Vial with a thread fastned to them, and tyed about the neck of the Vial; which Vial stop, and let it stand in a moderate heat for fifteen days, that they may be well hardned.

XI. After that your Pearls are well hardned, take your Mercurial or Acid liquor wherein you dissolved your Pearls, and reduced them to their first matter; in which liquor let some of your Pearl be dissolved.

XII. Often repeat the distillation, till your Pearls are turned to a Volatile Salt, and then to a liquor.

XIII. Take this water or volatile Salt of Pearls, and put it into the Glass where your Pearls are suspended.

XIV. Let the bottom of the Glass be round, but let not the Pearls touch the water, but hang as it were

about the middle of the Glass; your water covering somewhat more than the bottom thereof.

XV. This done stop up the Glass close, and let it stand to digest in a warm place, or gentle heat for a month; or so long till your Pearls shine and are of a splendid colour so as to please you, then keep them, for they are perfect.

XVI. Almost after the same manner, you may prepare great and refulgent Rubies, from small ones; but yet it is after a more perfect way and manner.

XVII. If you project of the fixt oyl of Gold on melted Crystall, you may prepare excellent Rubies or Carbuncles according to Art.

CHAP. LXXXV.

To make malleable Glass.

I. **T**AKE Oyl of Luna twenty drachms: oyl of Mercury, or its water seven times rectified, one pound: mix them together and distill them.

II. Repeat the distillation till the *oleum Luna* rises with the water of Mercury in distillation.

III. Distill this water again till it is fixed, and converted into a fixed Oyl; and this repeat four times.

IV. In the fourth time the oyl of Luna is fixed with the oyl of Mercury, so that they render Glass malleable: for so great is the Viscosity in your Oyl, that it removes the brittleness of the Glass, and so leaves it of a malleable temper.

V. The reason is, because that the radical moisture of the Glass is multiplied by the radical moisture of the Metals, which is plentiful and turgent or swelling in the oyls of Luna and Mercury.

VI. And if in this Oyl made Volatile, Diamonds
itould

To turn Glass into Diamonds.

Chap. 86. *To make Carbuncles of Crystal.* 599

should be dissolved, and then digested into a fixt oyl, it would transmute all Glass into Diamonds, only by projecting this oyl on melted Glass.

VII. There are also other precious stones comprehended within this oyl, when it is made volatile, and digested, and fixed again by digestion continually for the space of a year.

VIII. Also this Oyl can turn Glass into precious Stones of any kind whatsoever, if therein (being made volatile) precious Stones of the same kind have been dissolved, and digested with it into a fixed Oyl.

IX. For as Metals are included in their fixed Oyls: so are precious stones in theirs, as *Raymundus Lullius* doth witness in many places; the which thing we shall teach you in the following Chapter.

MB

CHAP. LXXXVI.

To make Carbuncles of Crystal.

I. **T**ake oyl of Sol three ounces: Oyl of the vital Mercury before prepared, two pounds: dissolve the oyl of Sol in the water or Oyl of Mercury.

live Mercury

II. This distill so often by cohobating the water of Mercury upon the oyl of Sol, till it does ascend both red and clear.

III. In this clear and limpid oyl dissolve the best Rubies, purify the solution, and distill it so often till all comes over, and the oyl does shine and sparkle in the darkest of places: (for the Goodness and beauty of Carbuncles consist in their splendent Rays.)

Ruby

IV. Keep and digest this water in continual digestion for a year in a Glass Matrafs Hermetically sealed up, till it is most perfectly fixed, which will be in about a year.

V. Take this radiant or glorious red fixed oyl, and project it upon melted Glass, or rather Crystal a pound in weight.

VI. For if you use less than a pound weight of Crystal, the Crystal would be turned into a medicine: but two or three grains or drops will be sufficient for a pound of melted Crystal, and will turn it into a pure and shining Carbuncle, which you must cause the Lapidaries to polish.

VII. This oyl of Carbuncles is profitable to preserve health, and is equall in Virtues and Properties to the oyl of Gold for the conservation of the same, and the prolongation of life, even beyond the bounds of humane nature.

Might not passes upwards draw up
 the CHAP. LXXXVII.
the Saps—and so make them
 To beautify Trees with fruit three times in a year.
but out afresh—

I. TAKE of that fruit which you would have to grow three times a year: beat it; and express therefrom the juyce, which put into a wooden vessel well closed, adding to it a little Salt, and place it in a Cellar.

II. When it grows warm, distill it in a gentle heat, to obtain its Spirit; which rectify, and separate from its flegm.

III. Keep it all, and rectify it seven times, and reserve the Spirit in a Glass Vessel well stopt.

IV. The

IV. The flegm rectify seven times or more, till it emitts no faeces, but ascends pure.

V. All the faeces or body of the fruit calcine (adding new fruit in calcination) in an earthen Pot, able to endure the fire, and in an open fire calcine also a great quantity of fruit, that you may have good store of Ashes.

VI. Let the Ashes be calcined to a whiteness: dissolve the Salt in the rectified matter by boyling in a Glass Vessel well stopt.

VII. When it boyls, purify the Solution by filtration then calcine the Ashes again in a strong Crucible, which done, boyl them in new flegm seven times rectified.

VIII. Purify the solution by filtration; mix all the solutions together, and distill them to dryness.

IX. Calcine the Salt remaining in the bottom, and with a gentle fire melt it: then dissolve it again in distilled flegm, and purify it by filtration.

X. Then distill again, and repeat these operations, till you have a most white Salt.

XI. Dissolve this Salt in the above reserved Spirit, distill them together, and cohobate very often, till the above-mentioned Salt does rise with the Spirit.

XII. This Salt arising, you have in readiness the fruit of that kind, from whence this Spirit and Salt did proceed.

XIII. Now beat and bruise your fruit, and mix it with some of your flegm, and a little of your Spirit: mix them well, and put them to grow sowre in the Sun, and let the flegm be turned into Vinegar.

XIV. This vinegar distill often, and in it dissolve your fixt Salt, and by reiterated cohobations convert it into a fusible Salt.

XV. This

XV. This Salt volatilize with its Spirit; and being volatile, turn it into water, to which add half of your Salt melted, and digest it into a fixed Salt.

XVI. This fixed Salt volatilize, after the former manner, and convert it into water, to which add half of your Salt melted; convert it again into a fixed Salt by boyling it in a close Vessel.

XVII. This work you must do four or seven times, making the fixed volatile, and the volatile fixed; and so you shall attain the aforesaid Secret; whose Virtue and property is to adorn Trees three times a year with the fruit of its own kind.

XVIII. The way and manner of doing it is thus: Take of your melted or fixt Salt one ounce; and dissolve it in five quarts of common fair water, or May-dew: and with this water, water or sprinkle your Tree, and it will cause it to flourish with leaves and fruit every three or four months.

XIX. But you must observe to gather the fruit as soon as it is ripe; and then presently again to water the Tree every day, with a little of your former water, wherein is dissolved an ounce of your said fixed Salt.

XX. It is also to be watered with other common water, not forgetting also very well to dung and prune the same.

XXI. Hence we may conclude the Salt is made volatile and fixed by means of the Ferment.

XXII. If you dissolve the Salt in May-dew, and in this impregnated water moisten or steep Corn, it will be very much multiplied; the increase will be much more plentiful, and the grains and ears of Corn will also be much larger.

XXIII. After this manner you may multiply and
increase

increase any other fruit or Grain whatsoever, in very large proportions.

C H A P. LXXXVIII.

To fix Mercury with the Salt of Tin.

I. **T**Ake pure Salt of Tin purified from all its fæces, seven ounces: Mercury seven times sublimed three ounces: mix and incorporate them together, and in a strong Glass sublime them.

II. Sublime a second time upon the fæces which are left in the bottom of the Glass.

III. Then weigh it, and if it be heavier than it was it is well, and doth begin to fix a part of the Mercury with the Salt of Tin.

IV. Continue the Sublimation of the Mercury upon the fæces, by beating and mixing them together, until all be fixed, and the Mercury remain in the bottom.

V. This will be done about the fiftieth time; for the Mercury is very slowly fixed; but at length it doth fix, and give a Metallick fusion, as *Geber* witnesseth.

VI. For the proof of the truth hereof, when you have thus fixed Mercury; add a little new Mercury seven times sublimed, *viz.* about two drachms, or two ounces, which you shall mix and sublime together, and immediately about the third or fourth part will be fixed by the sublimation, and converted into a fusible and fixed Mercury.

VII. Repeat this four or seven times, by adding to your fixed Mercury new Mercury seven times sublimed, until you have a great quantity of Mercury fixed and flowing as Wax.

VIII. One part of this projected upon an hundred parts

parts of melted Copper, will transmute it into fine Luna.

IX. And being projected upon fine Luna melted in a Crucible, it will turn the Luna into a Medicine, of the same Virtue and property.

C H A P. LXXXIX.

To fix Mercury into a White oyl, which will transmute impure Metals into Sol.

I. **T**Ake pure oyl of Mars four ounces: oyl of Sol four drachms: mix them together, and add thereto Mercury seventimes sublimed three ounces: mix and sublime them in a strong Glass Mattress.

II. What sublimes put back to the Fæces, till at length it be all most perfectly fixed.

III. Add to it new Mercury seventimes sublimed two drachms, and mix them together by beating and grinding them; and sublime so long till that which remains in the bottom of the Matrass be fixed, and will melt as wax, and be congealed in the Cold.

IV. Take of this matter one part and project it upon crude Mercury one hundred parts, and the Mercury shall all of it be turned into good Sol.

V. Also if you project it upon Saturn, Jupiter, or Venus, it will turn them all into fine Sol.

IV. And if this Mercury be fixed, and tinged with the fixed tincture of Sol, it will transmute all Metals into Sol.

VII. For Mercury thus prepared is true Sol opened;

opened; fixing and tinging all the imperfect Metals into its own substance.

VIII. Which substance being perfect and communicable, it transmits its perfection to impure Metals, and perfectly digests their indigested and imperfect substance.

C H A P. X C.

To fix Mercury into a white Oyl, which will transmute impure Metals into Luna.

I. **T**AKE *Oleum Luna*, and *Oleum Jovis*, of each three drachms: to which add Mercury seven times sublimed three drachms: mix and sublime them together.

II. Put back what is sublimed to the fæces, and repeat this work so long till all the matter be fixed together in the bottom of the Glass Matrass.

III. To this fixed Mercury add fresh or new Mercury seven times sublimed, and sublime as before, till all be fixed in the bottom of the Matrass.

IV. And that it may the sooner fix, add to every sublimation fresh Mercury: and repeat this, till you have a white oyl flowing like wax, and fixed.

V. Take one part of this oyl, and project it upon an hundred parts of any imperfect Metal; and all will be converted into most fine Luna.

VI. If this oyl be dissolved or mixed with Mercury water, and made volatile, and again fixed by digestion, for a year, in a strong Glass Matrass Hermetically sealed, you will have a white Elixir, which will project upon all the imperfect Metals, one part transmuting a thousand parts.

VII. He

VII. He who understands this Art, will not contradict these secrets; yet they require an ingenious and exquisite Artificer or Operator to perform them.

C H A P. XCI.

To make a red tincture of Niter.

I. **T**AKE the best Niter and powder it; calcine it with Charcoal in an Iron Crucible or Pot: dissolve the calcin'd matter in Spirit of May-dew, filter and distill it to dryness.

II. Calcine it again with a soft or gentle fire, taking great care it melt not, then dissolve, filter, and distill it again.

III. Repeat this work, always dissolving with fresh May-dew, until you have a fixed oyl of Niter flowing like wax.

IV. This oyl is to be made Volatile, by often dissolving, distilling and exsiccating of it.

V. Take of this volatile Salt, a large quantity, and with May-dew putrefy it for a month in Horse-dung in a Glas Matraass well stopt.

VI. Then distill till all your matter is converted into the Spirits of May-dew, and is purely volatile, and separate it from its flegm by a gentle heat in Balneo.

VII. That which remains in the bottom of the Vessel, and will not ascend by the heat of a Balneum, distill *per cineres*, and repeat it seven times.

VIII. So have you the pure and universal Mercury of the World, most subtil and volatile; by the help

help whereof most wonderfull things are to be done in Chymistry, but chiefly in the following secrets.

C H A P. XCII.

To make a white Elixir.

I. **T**Ake of Leaf Silver, or Silver calcined as much as you please; dissolve it in a sufficient quantity of this Mercury, and the universal liquor above prepared.

III. Digest the Solution for eight days in Horse-dung, then distill it to dryness.

III. Cohobate that which distills over upon the remaining matter, always putrefying the Solution for eight days.

IV. Repeat this so often, till the solution of the Luna, ascends with the Spirit which dissolved it: this water distill seven times in new Retorts.

V. Put to this Spirit or water as much cupellated, tested, or refined Silver, as it will dissolve.

VI. This solution being clear and pure, put into a long necked Glass Matrass, which stop well, and digest it in an Athanor, untill it is fixed into a white oyl.

VII. One part of this oyl will transmute a thousand parts of any other Metal into pure Luna: it will also transmute crude Mercury into fine Silver, one drop thereof being cast upon it.

VIII. If you yet proceed farther, and make this *Oleum Luna* thus prepared, volatile, and then bring it again into a fixed oyl, it will transmute all other Metals into fine Luna, without any fire.

IX. And one drop being put upon the Metal will penetrate

penetrate even to the Center of the Metal, and will tinge and transmute into fine Luna all imperfect Metals upon which it is projected.

X. But if it be seven times turned into a water, and then fixed again, it will transmute in an infinite manner, the said imperfect Metals into Luna.

XI. And if it be projected upon Luna, it will turn the Luna into a medicine of the same virtue and property: thus will your medicine be multiplied *ad infinitum*, nor need you to do the same work over again *de novo*.

C H A P. XCIII.

To make a red Elixir for transmutation of all other Metals into Sol.

I. **T**AKE of the best Sol seven times purged with Antimony, in fine filings, or in leaves 18. drachms: dissolve it in our above prepared Spirit.

II. Digest the Solution in a Glass Retort *in Balneo Mariae* for eight days, then distill it in Ashes.

III. Cohobate upon the matter in the Retort (and if need be add new Spirit to help it to dissolve,) so often till the Sol does ascend with the Spirit, in a red or white water.

IV. In this water seven times distilled, dissolve as much fresh Sol, as it will take up, and digest this solution in a Glass Hermetically sealed, till it be turned into a most red oyl.

V. This oyl is wonderful in preserving of health; one drop taken once a week does prolong life beyond the bounds of humane nature.

VI. Being projected on base Metals, it transmutes them

them into fine Gold: and being projected on Sol, it changes it into a medicine of the same Virtue: and cast on Crystal it produceth Rubies and Carbuncles.

VII. It also makes Glass malleable, and Rubies to be of a resplendent colour: It multiplies the Fruits of all sorts of Trees; if some drops be dissolved in water, and the Tree watered therewith.

VIII. It likewise renders all Animals more pleasant and strong, and prolongs their lives, thus by this medicine (which exceeds all others) is whole nature renewed.

C H A P. XCIV.

To prepare the Spirits of May-dew for the former secrets.

I. **G**ather dew in the month of May with a clean white Linnen cloth spread upon the Grass; which express from the Cloth; thus gather a very large quantity and filter it.

II. Put this into a great and capacious Glass Matrass, which stop well, and digest it in Horse-dung for fourteen days then distill it *in Balneo* to a fourth part.

III. This fourth part remaining cast away, for it is nothing worth, and that which was distilled digest again in a large Matrass well stopt in Horse-dung for fourteen days.

IV. Then distill to a fourth part as before: do thus four times, digesting what is distilled over, and distilling always to a fourth part, casting away every time the said fourth part remaining in the Matrass.

V. Thus will you have a most pure Spirit of dew,

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and very penetrating; by the help whereof, you may prepare the calcin'd Sol or Gold, make it volatile, and turn it into Water, as we have taught in chap. 61. aforegoing.

VI. Thereby Salts are calcin'd, made volatile and fixed, and converted into a volatile Spirit or water.

VII. And by the help thereof, all the fixed Salts of Metals are made volatile, and converted into a Spirit or water; and if you are indeed an Artist, you may by this turn all Metals into their first matter.

VIII. And out of this pure matter freed from all its faeces and Excrements, is made an Elixir, of a wonderful Virtue in transmuting of Metals.

C H A P. XCV.

The fixing of Arsenick.

I. **T**AKE well sublimed Arsenick, and mix it with Oyl of Tartar, and make it into a paste, with water of Sal-Armoniack, so as it may be a soft paste.

II. Put this paste into a Glass Matrass well stopped, and digest it in a temperate heat for twenty four hours.

III. Then take it out, and grind it on a Marble, moistening it with Oyl of Tartar and water of Sal-Armoniack; and digest it again, repeating this work four times.

IV. Then grind it well on a Marble; dissolve it in Horse dung in a Glass Matrass well stopt; and congeal, or evaporate upon warm Ashes.

V. Dissolve it again in Horse-dung, and amalgamate it five times; so will you find your Arsenick fixed and flowing as wax; one part of which will tinge twenty parts of Copper.

VI. If this oyl be dissolved in Spirit of May-dew,
and

and purified, and then joyned with an equal quantity of *Oleum Luna*, and *Oleum Mercurii*, and coagulated; it will tinge yet more powerfully.

VII. One part thereof being projected upon an hundred parts of melted Venus, will tinge and transmute it all into fine and most pure Luna.

C H A P. XCVI.

To resolve Sol into its first matter.

I. **W**ithout regeneration no Medical or Chymical Arcanum is possible to be attained; therefore if you desire to obtain any thing from the common Gold, it must be regenerated.

II. If that this Gold may be regenerated, it is to be reduced into its first principles, but chiefly into its vital Sulphur, the Balsome of whole nature.

III. This Sulphur is called Gold; and Gold freed from its Fetters, is enabled to exercise its vertue and strength, and those Actions and Properties that lay hid in it.

IV. To discover this, we must dissolve Gold with Gold, that is, with the internal Sulphur of Nature, which lurketh or lyes hid in all things.

V. Let us with common Sulphur, so often draw the Sulphur from other things, that in its center it may comprehend the Sulphur of another.

VI. Take therefore common Sulphur in a very great quantity, *viz.* as much as you please; and dissolve it in common *Aqua fortis*; and circulate it in a glass Matrass well stopped, till the *Aqua fortis* be sweet and insipid.

VII. Then draw it off by distillation, and put it on

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fresh;

fresh; digest and circulate in warm Ashes, till it also be sweet, which distill off as before.

VIII. Do thus till the *Aqua fortis* will be no more sweet, but sharp, and comes over strong: then force it all over; and the remaining matter digest till it waxes white; and continue the heat till it grows of a pure colour.

IX. This matter is so often to be dissolved in the rectified Spirit of Wine, (the Spirit being fresh every time) until a most red Tincture does ascend with the Spirit.

X. This Tincture is to be separated from the Spirit of *Wine* by distillation in *Balneo*.

XI. Then the Glass is to be removed into Ashes, where the Tincture is to be distilled off; and you are to rectifie it seven times.

XII. In this Tincture which is the true Sulphur of Nature, is Sol to be dissolved, in a very gentle heat; and being so dissolved, to be circulated, and so often distilled till it ascends with the Sulphur of Nature.

XIII. Then dissolve more common Sol in this Sulphur, and in a well stoppt Glass digest until all be converted into a most red Oyl, fixed and of a most sweet odour.

XIV. This most fragrant Oyl preserves and prolongs life, and has wonderful effects in transmutation

XV. This Oyl wants an equal in Alchymy: for one part thereof will transmute a thousand parts of any imperfect Metal; by projecting it thereon.

C H A P. XCVII.

To make the Spirit of Mercury.

I. **T**Ake Mercury sublimate one pound: of the best Potters Clay three pounds; powder them both, and with Spirit of May Dew, malax them together, and make little Balls thereof, which dry.

II. Being dried, moisten them with Wine, and dry again: then put them into a Retort well luted, and give fire by degrees for four and twenty Hours.

III. If any thing sublime into the neck of the Retort, mix it with more Clay, and moisten it with the liquor which comes over, and again distill it, till nothing sublime, but that the Mercury passes over in a Spirit.

IV. This Spirit rectifie seven times at the least.

V. With this Spirit you may do wonderful things in transmutation of Metals, for which cause I have inserted it among these Secrets.

C H A P. XCVIII.

To make a Spirit of Lime, which will dissolve all things.

I. **T**Ake Quicklime, what quantity you please, and distil Spirit of Wine from it ten or fifteen times; renewing the Spirit, and often pouring fresh on the Calx or Lime, remaining at the bottom.

II. Take of this Calx three parts, of Potters Clay eight parts: of pure Salt of Tartar one part: mix them together, and in a luted Retort, distill them with a strong Fire, until all the Spirits come forth.

III. Rectifie this Spirit well: Then will it dissolve all Metals, and work Wonders in Transmutation.

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IV. If you dissolve Crystal in this Spirit; you shall have a Salt of Crystal; and a true Secret for dissolving the Stone in both Reins and Bladder.

V. The Dose is half a Drachm in *wild Alexander Water*: It is also a secret, sure and safe Remedy in the Gout.

C H A P. XCIX.

To transmute Jupiter into Luna.

I. **T**Ake *Jupiter*, melt it, and quench it in the Water of Eggshels, and it will lose its crackling and easiness of melting.

II. Then take it, and amalgamate it with the like quantity of well washed Mercury.

III. Wash the Amalgama with common Water and decrepitated Salt: and when the Jupiter rather than the Amalgama is clear or clean, put it into a Retort, and distil it with a strong Fire, that the Mercury may be separated from the Jupiter.

IV. Wash your Mercury and cleanse it, by pressing it through Leather, and again amalgamate it with the Jupiter, and wash the Amalgama as before, with Salt and Water.

V. Distil the Amalgama again with a strong Fire: The Mercury wash, and press through Leather, amalgamate

malgamate it with Jupiter, and distil twelve times.

VI. At last mix half a part of Luna with it (the Mercury being separated from it;) then test that Mixture, and you will find your Luna much augmented.

VII. This is done by washing and distilling, and amalgamating with the Jupiter; for so is the Mercury fixed, and by its own Sulphur turned into Luna.

VIII. But if good Luna had been added to it at first, the Work would have been done sooner and better; for the Luna will harden the Jupiter.

CHAP. C.

To make a white Elixir to transmute all Metals into Luna.

I. TAKE Mercury, seven times sublimed; dissolve it in common *Aqua fortis*; digest the Solution for ten days in *Balneo Maria*, and in *Balneo* distil it to dryness.

II. The matter being dry, sublime it: and dissolve a part of the matter by it self, in a cold and moist place: The Solution digest for ten days, then distil it, and repeat the distillation three times, which keep in a Glass close stopped.

III. The other part of the Mercury sublime so often in a Retort, till it be fixed in the bottom thereof.

IV. To this fixed part joyn an equal part of the Spirit of Mercury, as it is prepared and distilled above, and in a Glass sealed up, putrefie it in *Balneo* for fifteen days, till it grows white.

V. This white matter sublime in Ashes, into the Sulphur of Nature.

VI. This Sulphur dissolve with two parts of your Spirit before reserved; digest the Solution *in Balneo* for ten days.

VII. Then gently distil off the Spirit, and what remains in the bottom, is the Oyl of the Sulphur of Nature, which is to be fermented with an equal part of the Oyl of Luna, then digested till it be fixed, and is become perfectly white, in a Glass Matrass well closed.

VIII. This being projected upon fused Luna in a Crucible, the Luna will become as brittle as Glass.

IX. One part of this Glass, will tinge a thousand parts of Venus into true Luna.

X. The Oyl of Luna for this secret is thus to be prepared. Take of the first Luna in Leaves four Ounces: dissolve it in *Aqua fortis*, digest the Solution for a Month *in Balneo*.

XI. This digested matter distil *per Balneum*, with a gentle heat: And to the liquid matter remaining in the bottom, put rectified Spirit of Wine, so much as may overtop it about four Inches.

XII. This matter digest *in Balneo* ten days, then distil off the Spirit of Wine.

XIII. The remaining matter at bottom, digest *in Balneo* for one hundred and fifty days, till it putrefies and grows white.

XIV. This white matter sublime, then dissolve it in Alcholisate Spirit of Wine, and digest it *in Balneo* for ten days; after which abstract the Spirit, and that which remains in the bottom is the Oyl of Luna, and the Ferment of the white Stone.

XV. If this Oyl be filtered and dissolved in the Spirit of Mercury, it will at last become a true Stone,
and

and of admirable vertues, as is before declared.

XVI. After the same manner may you work with Sol, to make the red Elixir, which will transmute all other Metals into fine Sol.

C H A P. C I.

To make a red Tincture of Mars for Sol.

I. **D**issolve Iron in our dissolving water, and digest the solution *in Balneo* for ten days.

II. Then draw off the *Aqua fortis* in a gentle heat: the matter remaining in the bottom dissolve in Spirit of Vinegar, digest it ten days, and then distill off the Vinegar.

III. Dissolve it again in fresh Spirit of Vinegar, and digest it for ten days *in Balneo* and then distill off the Spirit *ut supra*.

IV. To the matter remaining in the bottom affuse Spirit of Wine, so much as may cover it six inches over, and digest the matter *in Balneo* for ten days.

V. Abstract the Spirit of Wine by distillation, and the red tincture of *Mars* remaining in the bottom distill till it ascends by the Alembick, which rectify three or four times, or till it be most pure.

VI. Then from its Earth draw a Salt, which purify by many solutions, and calcinations and then joyn it with an equal weight of its tincture, or red rectified Oyl.

VII. Digest these together till they are fixed into a Rubine, which ferment with *Oleum Solis*, whose preparation we have taught in several places beforegoing.

VIII. The

VIII. The matter being all fixed, cast one part upon three parts of melted *Sol*; and that upon a thousand weight of *Luna*, or any other Metal, and all will be good *Sol*.

IX. But farther, if this matter be joyned with the volatile Tincture of Mars, and dissolved, and then again fixed, its virtue in transmuring of imperfect Metals, will be thereby very much increased, almost *ad infinitum*.

X. And if that one part thereof be projected upon (100000) an hundred thousand parts of any imperfect Metal, it will be all transmuted into good *Sol*.

XI. And if this medicine be cast upon *Sol*, it will be transmuted into a medicine of equal virtue to the former.

C H A P. CII.

To make an Elixir and medicine of Jupiter for the White Work.

I. TAKE Mercury of Tin, half a pound; dissolve it in common *Aqua fortis*, and digest it in *Balneo* for ten days.

II. Then distill off the *Aqua fortis* to dryness, and repeat this work three times, *viz.* dissolving that which remains in the bottom, with new *Aqua fortis*, and digesting ten days, and distilling off the *Aqua fortis* to dryness.

III. Repeat the solution again with fresh *Aqua fortis*; digest *ut supra*, and then draw off the Spirit in ashes.

IV. Put what remains in the bottom into a strong

strong Glass Matrafs well luted, and sublime it with a strong fire for six hours.

V. What sublimes, mix with fresh Mercury, drawn from Jupiter as aforesaid, incorporate them together, and make an Amalgama.

VI. This Amalgama wash well, and filter it with clear Oyl, so that the Mercury may not appear to run.

VII. But a powder being made of both Mercuries with Ashes, let it be sublimed for six hours; and to this matter add an Amalgama of Luna with the Mercury of Jupiter, and sublime till all remain fixed in the bottom of the Vessel, and melts like wax.

VIII. And this is done, by adding new Mercury of Jupiter sublimed, and then dissolved in *Aqua fortis*, and again sublimed; thus will it become fixed and flowing like wax.

IX. This medicine being projected upon Saturn, Jupiter, Venus or Mercury, converts them all into fine Luna; one part being projected upon an hundred of any imperfect Metal.

X. And if it be projected upon fine Luna, all the Luna will be turned into a medicine of equal Virtue with the former.

C H A P. CIII.

A lesser tincture for the white Work.

I. **T**ake common Salt dissolved in May-dew, and so often coagulated, till it will melt in the fire like wax; which that it may the sooner be performed, every time you coagulate, melt it in the crucible, and so cast it into the water of May-dew.

II. Then

II. Then it is to be filtred, and this is to be so often done, till it will melt like wax as aforesaid.

III. Take of this matter, nineteen drachms: of pure white Salt drawn from Egg-shells nineteen drachms: Mercury seven times sublimed and dulcified, twenty drachms: pure white Salt of Vitriol eighteen drachms: mix all well together.

IV. Then put them into a strong Glass Matrass well luted, and sublime them with a strong fire four or seven times.

V. To this matter add of sublimed and fixt Arsenick, eighteen drachms: of calcined Luna nineteen drachms: of sublimed and fixed Sal-Armoniack eighteen drachms: mix them.

VI. Then sublime them, and repeat the sublimations upon the faces, till the whole matter be fixed, and nothing more will ascend.

VII. Then dissolve this whole matter in a cold and moist place, letting it run *per deliquium*; filtre, purify, and coagulate the Solution.

VIII. This Coagulum dissolve in May-dew, till all be converted into a fixed Oyl.

IX. One part of this Oyl projected upon an hundred parts of fused Venus, will transmute it all into fine Luna,

X. These Salts thus prepared and made fusible, receive their chiefest Tincture from the Arsenick, Mercury, and Luna, which are all dissolved with these Salts, and by Art prepared, and converted into a white fixed Oyl.

XI. This Oyl wonderfully tingeth, and by tinging doth fix; for it has in it self fixedness, and permanency, in the fire.

CHAP. CIV.

Of the Physical Stone made of Dew.

I. **T**AKE a great quantity of April, or May-dew, and distill it with a gentle heat, till it becomes somewhat thick in the bottom of the Alembick.

II. Put into this water a quantity of the Loadstone, and from the same with a very strong fire, in a Retort, draw forth an acid or sharp Spirit, which rectify seven times and reserve it.

III. The Loadstone calcine with a strong fire in a strong Crucible for three hours, and extract a most profitable Salt, with the flegm of the Dew, before distilled, by boiling the Loadstone in the said flegm.

IV. Filter the flegm and distill it in an Alembick, in the bottom of which you shall find a most pure white Salt.

V. This Salt calcine in a Crucible with a strong fire, three or four hours; and then dissolve it in the Spirit of May-dew, before prepared.

VI. This solution filter and distill with a very gentle heat, and that which remains in the bottom, dissolve, and filtrate, so long till it emits no fæces in dissolution, and remains in the bottom of the Alembick, in the form of a most pure white Oyl.

VII. Sublime or cause this Oyl to ascend with a very strong fire into the Sulphur of nature: This Sulphur dissolve in the Acid Spirit above prepared and reserved.

VIII. This Solution purify, and dry or evaporate

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it by distillation; and again dissolve it and evaporate it by distillation; and this so often repeat till your Sulphur is dissolved into a volatile water, and ascends by the Alembick with the acid Spirit.

IX. And thus is this Acid Spirit made the true Vinegar of the Chymists, most sharp, and dissolving all things.

X. Take of this most sharp Vinegar twenty eight drachms: of the finest and best Sol seventeen drachms: dissolve the Sol in the said Vinegar.

XI. Digest this solution in a Matrafs well stopt for a month, then put it upon an Alembick and distill it to dryness.

XII. What distills, cohobate upon the matter remaining in the bottom, and repeat this work so often, till it is all converted into a red fixed Oyl in the bottom of the Matrafs or distillatory.

XIII. Separate the flegm, or insipid drops of water, which came over first in the distillation of our Vinegar; and put that only upon the remaining matter which is sharp or acid, till it is all fixed into a red fixed Oyl.

XIV. One part of this will turn a thousand parts of any imperfect Metal into pure Sol: and if it be projected upon an equal weight of fine Sol, it will convert it all into a medicine of the same Virtue and property.

XV. And if you dissolve this medicine with new and fresh acid Spirit, and digest it again in a well stopt Matrafs, till all is turned into a red fixed Oyl, your medicine will be multiplied both in quantity and Virtue.

C H A P. CV.

To fix Mercury.

I. **T**AKE Mercury dulcified and often sublimed eight drachms : Salt peter depurated and freed from all its common Salt, as much : mix them together.

II. Sublime them in a strong Matrafs, with a very strong fire : then sublime without the fæces which are left in the bottom of the Glas.

III. And so long sublime, till it is fixed in the bottom ; so have you a fusible, fixing, and tinging Mercury ; of which one part will go upon an hundred parts of melted Venus.

IV. And if this fixed Oyl of Mercury, be joyned with the fixed oyl of Luna, it will tinge the more powerfully, and its virtues will be multiplied.

V. And if this fixed Oyl be dissolved in our strong Vinegar, prepared in the former Chapter it will be all converted into a Spiritous water, which will penetrate and dissolve all things.

VI. And herewith are performed strange and stupendious secrets, with Sol, Luna, and precious Stones, in order to mans health, as also for making Glas malleable, and turning it into precious stones.

C H A P. CVI.

To congeal Mercury into Luna.

I. **T**Ake Auripigmentum half a pound: Mercury Sublimate as much; mix them, and grind them till they become a most fine powder.

II. Put it into a Retort, and distill (according to Art) in Ashes a gummosse liquor, which rectify seven times.

III. Then take well washed Mercury four ounces, which amalgamate with filings or leaves of the most pure Luna: wash the Amalgama with Salt and Spirit of Vinegar till it be white and pure.

IV. Imbibe this Amalgama in the former liquor, and digest it in a Matraass covered with *Lutum Sapientia* close stopt in a strong fire, for four days, and increase the fire for eleven hours.

V. At last melt it in a Crucible, and it will be most fine Luna.

VI. And if you add a little Calx of Tin well calcined and well washed, it will be better, and you will find in the fusion a greater quantity of Luna.

C H A P. CVII.

To extract the Mercury of Antimony

I. **T**Ake flowers of Antimony made *per se* in an earthen Vessel, as much as you please; and add thereto pure Salt of Tartar in very fine powder,
Quick

Chap. 108. *To convert Lead into Mercury.* 625

Quick lime, and Sal-Armoniaek, of each as much as of the flowers of Antimony.

II. To these add of the best Spirit of Wine a sufficient quantity; and in a Glass Matrass well stopt, digest them for a month in warm Horse-dung, or in *Balneo*.

III. Then distill, and at the end of the distillation, you will find a running Mercury of Antimony in the bottom of the Receiver.

C H A P. CVIII.

To convert Lead into Mercury.

I. **T**Ake of the best Salt of Borax three ounces: Salt of Lead three ounces: Oyl of Tartar three ounces: filings of Lead four ounces: Sal-Armoniaek three ounces: The best Spirit of Wine six ounces; mix them well together.

II. Put them into a Glass Matrass, stop it well, and digest in *Balneo* for a month; then distill, and a running Mercury will be drawn from the Lead.

III. This Mercury you may easily fix into Luna with *Oleum Luna*; and into Sol, with *Oleum Solis*; the manner and way of doing which, you may collect out of some of the aforegoing Chapters.

Done

C H A P. CIX.

A tincture of Sol for the transmutation of Luna.

I. **T**Ake of the mineral of Sol, (which has not yet past the fire) one pound, beat it into
S f bits,

bits, or into a gross powder, and put it into a well luted Retort.

II. Distill with a strong fire, and what comes over keep in the Recipient close stopt.

III. What remains in the Retort, expose (whilst it is yet hot) to the cold Air for a night; and in the morning put it into the Retort again, and distill it as before into the same Recipient.

IV. What remains in the bottom of the Retort, expose again (whilst it is yet hot) to the cold Air for a whole night; the next morning put it into the Retort again and distill it.

V. This work repeat so often till you have a very great quantity of Water.

VI. Then take your mineral which remains in the bottom of the Retort, and dissolve it in a strong *Aqua fortis*.

VII. Purify the solution, and digest it for a whole month in *Balneo Mariae*.

VIII. Then distill to dryness, and cohobate the water distilled off upon the fæces till it grow sweet.

IX. After which, dissolve the matter remaining in the bottom, with the above reserved water (in the receiver well stopped) drawn from the mineral exposed to the cold Air.

X. Being dissolved, filter and purify the Solution; putrefie it for a month in *Balneo*, then distill to dryness: cohobate, and distill again, untill your matter ascends the Alembick in a wonderfull Salt.

XI. This Salt dissolve, and distill till it is converted into an Acid Water, which rectify, and free it from all its insipid flegm.

XII. Then in this most strong rectified Vinegar, dissolve Sol calcined with Salt and Mercury: all being well dissolved, purify the solution and digest
it

it (abstracting the flegm if any be) untill the matter by a constant digestion is converted into a red and fixed Oyl.

XIII. This Oyl (as the other above prepared red Oyls) may be multiplied, and its Virtue and power extended in like manner.

IX. One part thereof will project upon a thousand parts of any imperfect Metal, and transmute it into most fine Sol, without comparifon.

CHAP. CX.

A tincture of Luna for other Metals.

I. **T**Ake of the mineral of Luna in gross powder two pounds: Mercury seven times sublimed half a pound: mix them together, and in *Balneo Mariae* putrefy them for a month.

II. Then distill into a Recipient well joyned or luted to the neck of the Retort: what comes over into the Receiver, keep therein well stopped.

III. The matter remaining in the Retort, expose while it is yet hot, to the cold Air for a night: break the Retort, and if any thing be sublimed into the neck thereof, bruise and grind it, and mix it again with the matter.

IV. Then distill it as before, and keep the liquor that comes over into the Recipient, with the other close stoppt; and expose the matter whilst yet hot to the cold Air for a night *ut supra*.

V. What sublimes or ascends, if any be, mix with the remaining matter, and again distill in a new Retort.

VI. This work so often repeat, till you have a ve-

ry great quantity of Acid water, which rectify, and separate from its flegm.

VII. Then dissolve of the matter remaining in the Retort four ounces; in a sufficient quantity of *Aqua fortis*: you are not to dissolve all your matter, because it will be too much; four ounces will be enough.

VIII. Digest the solution in *Balneo* for a month, then distill and dry it: and this work so often repeat, till your dissolved matter is converted into an oyl.

IX. Dissolve this Oyl in the Acid water above reserved in the recipient: then distill it to dryness, and so often repeat the distillation, till all the Oyl ascends with the Acid water, and the whole becomes one Acid.

X. Rectify the Acid liquor seven times; and therein dissolve a fit quantity of Luna, and repeat the solution and distillation, till it be all turned into a fixed Oyl very clear.

XI. This Oyl converts all imperfect Metals into fine Luna.

XI. And if you dissolve it again in the above reserved Acid water, and according to art digest it into a fixed Oyl of Luna, one part will go upon ten thousand parts of any imperfect Metal.

XIII. And being projected upon Luna, it converts it into a medicine of the same virtue and property.

C H A P. CXI.

To make a red Oyl of Vitriol, a secret in the cure of all diseases.

I. **T**AKE Salt of vitriol a pound: make it red by manifold Calcinations and Solutions, so often iterated, till it comes to the highest redness.

II. Dissolve

II. Dissolve it in the best rectified Spirit of Wine three pounds; and digest the solution in *Balneo Maria* for a month.

III. Distill it in a Retort, with a strong fire; cohobate the Spirit upon the red Salt, and so often repeat the Cohobation, till with the Spirit of Wine, a red Oyl ascends; or the Spirit is tinged with a red tincture from the Salt of vitriol.

IV. Distill this tinged Spirit in *Balneo Maria*, with a gentle heat, and the red tincture will remain in the bottom.

V. The Spirit of Wine thus denudated of its tincture, put upon the Salt of vitriol again, that it may be again tinged.

VI. Repeat this till your Salt of Vitriol is all come over with the Spirit of Wine, or converted into a volatile Tincture.

VII. This tincture separate also from the Spirit of Wine, and rectifie it three or four times by a Retort in Ashes.

VIII. In this rectified tincture dissolve the Calx of Sol; so will it become fixed by means thereof, and both converted into an Oyl.

IX. This being by art made volatile, and then fixed again, becomes a very great medicine curing all diseases; and purifying or purging the leprosy of all Metals.

X. One grain of it is sufficient for the prolongation and conservation of humane life for many years; and for curing of any disease.

XI. One grain also is enough to transmute a pound of Saturn, Jupiter, Mercury or Luna into the most fine Sol.

C H A P. CXII.

To extract a red Tincture from Arsenick.

I. TAKE Crystal Arsenick half a pound : poulder it very fine, and dissolve it in common *Aqua fortis* seven times distilled and rectified.

II. Filter and purify the Solution, and digest it in *Balneo* for fifteen days, then distill to dryness.

III. Dissolve again in the self same water that came over, cohobate upon the fæces, dissolve, clarify, filter, and distill, and do thus so often, till it dissolves without any fæces, and the solution becomes of a red colour, with a white Salt settling at bottom.

IV. Separate this Salt, and keep it for the white tincture, to project for the white.

V. Now take only the solution, and put to it a fourth part of Sol: but let the Sol be first dissolved in *Aqua Regia*.

VI. Then joyn the Solutions, and digest them, in *Balneo Maria* for a month, and then distill to dryness.

VII. Cohobate, or again put back the water to the fæces and again dissolve, purify and filter the Solution, and distill to dryness.

VIII. Dissolve again, and repeat this work, till it emits no fæces, but your matter is converted into a most rubicund Oyl.

IX. This Oyl circulate in a Glass Matraass with a long neck well stop'd, till the Oyl is so fixed, as that it will not in the least ascend.

X. Take of this Oyl one penny weight, and project

it

It upon fine Luna one pound, fused in a Crucible, and it will transmute it all into the most pure Sol.

C H A P. CXIII.

The conclusion of this sixth Book.

I. **I** Peter John Faber here publish these *Arcana* for the production of Sol and Luna, and dedicate them to the Sons of Philosophy, not as having been all experienced by me, but as they are agreeable to reason, the principles of Alchymy and true fundamentals of Art. I am unwilling to draw you into expences, or cause you to exhaust your Treasure, consume or lose your time: my design is that you may reap fruit by our Instructions.

II. For this purpose it is necessary that we convert Metals whether pure or impure into a pure Salt: for it is only profitable to us that by a Metallick Salt we tinge the saline parts of Metals: to which purpose the *Arcana* in this present work wholly tend: teaching how Metals and Minerals may be converted into a pure saline and fusible substance.

III. Thus proceeding in this Art of Alchymie, you will not blame but praise me, for that I advise you not to things vain, but such as are advantageous and profitable. This is the secret in Alchymie as I have said, to convert Metals into a fusible Salt; to volatilize this Salt with the Spirit that turned the Metal into such a Salt; to make the volatile fixt, and the fixt volatile again; and this again fixt, till it is able to digest and tinge the Imperfect Metals into Sol and Luna.

IV. This is done by dissolution and Coagulation.

This is the Summ and accomplishment of the whole Art; there is nothing more true in this learning; God himself is witness. By the *Arcana* here laid down, you may see how fruitfull Alchymy is in the production of Sol and Luna: but this you will never compleatly perceive, unless you understand the *humidum Radicale* of Metals; and how to free and depurate it, from its impurity and fæces.

V. For the transmutation of Metals consists only in the pure and fixed Metallick *radical moisture*, educed by patience and constancy in operating; for they require a long time to be brought to a laudable and desired end: Art is long and tedious, and requires a patient, learned, expert, and constant Operator. Chymical fruits are not suddenly brought to maturity, but by length of time, and a previous and continual digestion, therefore is patience and constancy so requisite.

VI. Chymistry imitates Nature, and is tedious in digesting and perfecting of Metals. The very fruits of Vegetables call for a years digestion; much more will the incorruptible fruits of Minerals and Metals exact a longer time to accomplish their maturity and perfection: for the Metallick substance cannot be perfectly and absolutely united with its Radical juyce, but by length of time, and a previous digestion.

VII. The perfection of all Metals consists in the well depurating of their Metallick juyce or moisture; and so absolute a union between them, that the strength of fire shall not be able to separate them. Therefore think not much of the time you imploy in depurating and digesting of this *Radical moisture* or juyce of Metals in these our preceeding *Arcana*.

VIII. For thereby it is manifest that the Metallick
juyce

juyce or moisture is freed from its Elementary fæculencies, and by digestion perfectly united and joyned together. The truth of these things I doubt not of in the least, although I have not actually experienced them all, because they are clear by the principles of Art and Nature, the latter of which will not deceive you, if you act according to her Method.

IX. I have experienced some of these secrets to be true; wherefore I believe the rest to be so too: and I doubt not but you will find them most faithfully laid down, if you exactly adhere to, and follow what is written, having patience in digesting, uniting, and fixing, according to the tenor of the Arcanum you pretend to follow.

X. And if they require a longer time than I have prescribed, be not backwards to give it, till you compleat what you seek for: and although the depuration and digestion be very tedious, yet this encouragement you have, never to be frustrated of the perfection you seek after. Love and wish me well; and so Farewell.

The end of the sixth Book.

1843
The first of the year
is a fine day
and the weather
is very good
I have not
yet seen any
of the birds
which I have
seen in the
winter.

I have not
yet seen any
of the birds
which I have
seen in the
winter.

I have not
yet seen any
of the birds
which I have
seen in the
winter.

POLYGRAPHICES

LIBER SEPTIMUS.

PHYLAXA MEDICINÆ:

*Or a Cabinet of choice Medicines, collected
and fitted for Vulgar Use.*

By William Salmon Professor of Physick.

CHAP. I.

Aqua Regulata, Our Eye Water.

I. **T**ake Fennel Water, or White or Damask
Rose Water five quarts: Salt of Vitriol,
Saccharum Saturni, of each two drachms
and an half: Dissolve, digest ten days, and
filter through brown Paper: Then take rectified Spirit of
Wine six or seven Ounces, dissolve therein Camphire five
drachms; fine Aloes, choice Opium, of each three drachms
and an half: Let it settle, then decant the clear and filter

it:

it: joyn these two Liquors together, and add thereto Regulus of Antimony, or Crocus Metallorum in very subtle Powder, five ounces: Shake all well together three or four times a day for ten or twelve days, then let it settle, and keep it quiet upon the faces for use.

II. This is inferiour to no Eye-Water extant, but is one of the best Remedies yet known for Blindness, dimness of the Sight, Pin and Web, Pearls, and most other Infirmities of the Eyes; it eases all manner of Pains, and cures Diseases of the Eye to a miracle.

III. It takes away Suffusions, Clouds, Pearls, Bloodshot, only by washing therewith three or four times a day: It cures sore Eyes, running Eyes, salt, hot and sharp Rheums in the Eyes, Ulcers, Fistulas, &c. having made several see, who to my knowledge have been long blind. It is a powerful and magistral Water for this purpose, and therefore ought to be kept as a Jewel.

IV. If there be any Sores or Ulcers in the Eyes, you will find the Water the more beneficial, if you dissolve a little Virgin Honey therein, and then to use it as aforesaid.

V. It cures all sorts of Ulcers in the Mouth, Throat and Nostrils, or in any other parts of the Body, whether Scorbutick or Venereal; you may wash the Ulcers with Cotton or Lint dipt in the Water.

VI. It is a most excellent thing for Ulcers and Sores in the privy parts of Man or Woman, it eases the Pain, cleanses the part, astringes, and in a little time compleatly heals the Ulcer only by washing, or injecting of it in with a Syringe (fit for those parts) three, four or five times a day.

VII. It is of singular use in easing Pains of the **GOUT**, repelling of the Humors, and resolving of the tartarous matter, by bathing the part affected therewith Morning and Evening, and applying Stupes wet therein to the same.

VIII. It is of excellent use against all manner of Scabs, Pustles, breakings out, Tetter, Ringworms, Morpew, Scurf, Spots, and other deformities of the Skin, by washing them with it six or seven times a day, for some days, and applying Cloaths wet in it, over the said Defects for a few Minutes.

IX. Being drawn up the Nostrils, or cast up with a Syringe, it is a good *Errhine* to purge the Head of Flegm, Wind and Water, and eases the vehement Pains thereof: You may use half an ounce at a time, or more, an hour or an hour and an half before bed-time; it purges strongly by the Nose all watry humors; helps the Lethargy and noise in the Ears, and brings away Catarrhs.

X. The Temples being bathed therewith, and then linnen Cloaths dipt in the same, and applyed to the part, gives present ease in the most vehement Head-ach, allays the force of Frenzies and Madness, takes away Watchings and Restlessness, and provokes Sleep and Quietness.

XI. Lastly, after due purging, it cures the Gonorrhoea in Men, and the Whites in Women, being injected into the Yard or Womb with a fit Syringe, five or six times a day. *Price twelve Pence an Ounce.*

C H A P. II.

Aqua Bezoartica, Our Cordial or Plague Water.

I. **T**ake Virginia snake root, Contrayerva, Zedoary, of each six ounces: Cinnamon, four ounces: Cloves, Mace, Nutmegs, Cubebs, Cardamoms, Caraways, Bay-Berries, Juniper-Berries, Gentian, Winters Cinnamon, Jamaica Pepper, Black Pepper, Ginger, of each three ounces: Saffron, Cochinele, Limon Peels, Orange Peels (the yellow only) of each two ounces: Rosemary and Lavender Flowers, Angelica, Bawm, Mint, Pennyroyal, Sage, Savory, Time, Sweet Marjoram, of each three handfuls: Spirit of Wine three gallons: bruise what are to be bruised, and digest all together for twelve or fourteen days: then put thereto white Wine four Gallons: distil all in a proper Alembick with its refrigeratory, and draw off three gallons of pure Spirit, which reserve: then change the Receiver and draw off two Gallons of a Cordial water, which keep by its self, and make one half of it into a Syrup with fine Sugar. Then take Venice Treacle, Mithridate of each three pounds and a half, which dissolve in the above reserved Spirit: digest twenty days, shaking it two or three times a day; then let it settle, and decant off the clear Tincture: to the Magma put the other half of the Cordial Water, mix, digest and shake it for twenty days, then decant and mix it with the former Tincture. Mix these Tinctures with the above-prepared Syrup, and keep them in a Glass close stoppt for use. This if you so please you may perfume with Musk, Ambergrise of each a Scruple.

II. This Water is good in Sadness, Melancholy, and dejection of Mind; is profitable against Pains and afflictions of the Spleen and Hypochondres. It is a very

very great Cordial, revives all the Spirits, exhilarates, and makes merry a sad and drooping Heart.

III. It powerfully resists Poyson, Plague, Small-Pox, and all sorts of malign Feavers: it cures the biting of all sorts of Serpents and other venomous Beasts: it strongly provokes the Terms, and is of profitable use in the fits of the Mother.

IV. It is a good Stomack, comforts the Head, Brain, Nerves and Bowels, by warming them: it causes a good Appetite to Food, and a strong Digestion, by strengthening the internal faculties of the Stomach, expelling Wind, easing the Colick, and taking away sickness at Heart and Stomach.

V. It is a very admirable thing against Diseases of the Head and Nerves, as Head-ach, Megrims, Vertigo's, Lethargies, dulness, Drowsiness, Palsies, Apoplexies, and the like: and it may be of good use, to be continually drunk by such as are affected with the Falling Sickness, or have any Distemper proceeding from cold and moisture of the Brain.

VI. It is very profitable against the stupefaction of the Senses, Catarrhs, defluxions of Rheum, Rheumatisms, Faintings, Swoonings, suffocation of the Womb, or Fits of the Mother: it provokes Urine, and is very good against the Stone, Gravel, or Slime in the Reins and Bladder.

VII. This Water is Sudorifick, Alexipharmick, and Antefebricitick; it is powerful against all sorts of Pestilential Feavers, as also against Hecticks, and Consumptions. It is a Cordial, Cephalick and Neurotick, and a great Restaurative: it opens Obstructions, attenuates, and is excellent against all cold and moist Diseases.

VIII. It cures the biting of Mad Dogs, expels the Poyson of Vegetables or Animals; quickens the Senses,

Senses, restores the decays of Nature, comforts the Brain, clears the Eye-sight, repairs the weakness of the Memory, and brings again the lost Speech.

IX. This Water is good also against Surfeits, Coughs, Colds, Catarrhs, &c. It is excellent against Pains and Stitches of the Sides, and is prevalent against a Pleurisie (more especially being mixt with equal parts of our *Gutta Vita* or Cordial drops) being Anodyne and causing rest.

X. *The Dose and manner of using it.* You may give from half a spoonful to two spoonfuls, or more at a time, in the Morning fasting; a little before Dinner, and at night going to Bed. It may also be taken in the same Dose, at any time of the Day or Night, upon any Fainting, Swooning, or sickness at Stomach, or if any other emergent occasion requires it. *Price six Pence an ounce.*

Silver Purge C H A P. III.

Catharticum Argenteum, Or our Silver Purge.

I. **T**ake of the best native Cinnabar reduced into fine Powder, five ounces: fine Silver in Leaves, an ounce and an half: the best Copper in small Filings a drachm and an half: dissolve each apart in double Aqua fortis, or the best Spirit of Nitre: make a precipitation of the Calces, which you shall free from the corrosive Spirits of the A. F. or Spirit of Nitre according to Art. These Calces dissolve again apart in Spirit of Honey, or Spirit of Salt; precipitate again and sweeten as aforesaid; from which being mixed together, you shall three times burn off rectified Spirit of Wine. The Calces thus sweetned and dried, you shall put into a Glass Matraass, upon which you shall affuse our
universat

universal Menstruum fourteen ounces (which is the Menstruum of the World, and a true dissolvent;) set them in a philosophick heat, or the Fire of Nature, for twenty four Hours; so will it radically dissolve the Calces, and bring them into their first matter: this Dissolution decant, filter, and keep it for use. Upon the remaining Calx undissolved (if any be) affuse more of the Menstruum, which digest, decant and filter as aforesaid. Thus continuing the affusion of new Menstruums, so long till the whole Calx is dissolved, you will have at last, an almost colourless, smellless, tasteless Lignor, especially if it be mixt with any other Vehicle.

II. Here is to be noted, that this Menstruum adds nothing of vertue to the Medicine, but only by accident, as more perfectly dissolving and opening the Bodies of those several Calces, whereby their *potestates* or powers more easily mingle themselves with the sanguineous mass, and thereby fix their Character upon the habit of the whole Body.

III. By means of this Menstruum, the purging of the Medicine is not only certain, but determined to a certain time; for whereas without this Dissolutor, the Particles of the Calx might too closely adhere to the Tunicles of the Stomach, causing a continual working, sometimes for two, three or four days together; now no such thing can be, by reason of this liquid form, whereby it is seldom known to work above two, three or four hours at most.

IV. If the Stomach be foul, it will cleanse it, and work gently both by Vomit and Stool; if the Stomach be not foul, it only works downwards; if it be given in a small Dose, it works neither upward nor downwards; and yet by a constant taking it for some time, as 2, 3, or 4. Months, it cures almost incurable Diseases, without any manifest alteration.

V. In all chronick Diseases, it ought to be used, (as well as for Purging) in a dietetick way, constantly giving of it in a few drops, as two, three, four, six, eight or ten, as is hereafter expressed, and five or six times a day, by which means it insensibly alters the whole habit of the Body, and may indeed serve instead of many other Diets in these very cases: for this is very certain, That unless the whole habit be absolutely altered, no cure can be expected; for the cure in such Diseases, always follows the alteration of the habit, as every Man experienced in Physick does sufficiently know.

VI. This Silver-Purge opens all Obstructions of the Bowels, as Lungs, Liver, Spleen, Reins, Womb, Mesentery, and lacteal Veins: but here is to be noted, That it ought to be given in Obstructions of the Lungs for twelve or sixteen days, in such a proportion, as it may neither vomit nor purge, and that in all the Liquor the sick drinks, five or six times aday. In other cases you may give it in the largest proportion, that is fit for the Age and strength of the person.

VII. It cures Agues and Feavers of all sorts, at two, three or four times taking, and I have oftentimes cured an Ague with it, at once taking, yea Tertians and Quartans.

VIII. It is a most specifick Remedy for the cure of most chronick Distempers, as hypochondriack Melancholy, Quartans, pains of the Stomach, swelling of the Liver and Spleen, Cachexies, Green-sickneis, stoppage of the Terms, &c.

IX. It cures almost all Diseases of the Head, as Headach, Megrin, Frenzy, Madnes, Fallingsickness, Apoplexies, Convulsions, Palsies, Lethargies, Vertigoes, and other like Distempers of the Brain.

X. It

X. It carries off the impurities of the Stomach, cleanses the Blood, restores it to its course and circulation, cherishes the Heart, revives the vital Spirits, restores the functions of all the Parts, adding to the Body strength and vigour.

XI. It perfectly cures the *Gout*, given in the paroxysm, so as it may not work; but when the Paroxysm or Fit is over, so as that it may work strongly; exhibiting also every Night (in the intervals of purging) a Dose of our Cordial Pills, in Chap. 28. following.

XII. It cures the Scurvy, Dropsie, and Kings-Evil, almost to a Miracle: so also the Jaundice, Sciatica, Worms, Rickets in Children; Consumptions, occasioned through manifold Obstructions, Fits of the Mother, and most other stubborn Diseases not to be cured by vulgar Medicines.

XIII. It is also eminently good in the cure of all running Sores, old Ulcers, Fistula's, Pox, &c. in any part of the Body, or proceeding from what cause soever. It cleanses the Body, discharges it of its Feculencies, and removes or destroys the most pernicious symptoms.

XIV. *The Dose and manner of taking it.* It is commonly given either as a *Diet*, whereby the Body is only altered; or with an intention to *purge*. *If as a Diet*, give two, three, four, six, eight or ten drops at a time, four, five or six times a day, in Beer, Ale or Wine, according as the sick is in Age and Strength.

XV. *If it be given with an intention to purge*, give to *Infants* (*quoad capax*) from five to twenty drops. To *Children* of four, six, eight, ten or twelve years of Age, from forty or fifty drops. To *Youth*, from ten to sixteen years of Age, from fifty to eighty drops.

of the Dose

drops. From sixteen or eighteen to forty, fifty or sixty years of Age, from a hundred and twenty to a hundred and sixty or two hundred drops; which is from about four scruples, to a drachm and half, or two drachms: always observing this, to increase the dose every time, till you find it works enough.

XVI. Give it in Broth, Beer, Ale, or Wine, and that every fourth, fifth, or sixth day, in the morning fasting; having some broth, mace Ale, or Posset-drink to take after it: being mixt with its vehicle, no stomach can refuse it. One ounce will make four, six, eight or ten several doses, according to the sex, years, and strength of the Patient. *Price five shillings an ounce.*

CHAP. IV.

Tinctura Corallorum composita, *Compound Tincture of Coral.*

I. **T**ake levigated powder of Coral, affuse thereon most sharp Spirit of Honey (made of Honey p. j. sand p. ij. distilled in a sand Furnace) and in twenty four hours the Spirit will be tinged of a deep yellow: decant, and put on more Spirit of Honey, and digest as before, reiterating this till it will tinge no more: then filter the Tinctures, and gently distill off the Spirit to dryness: upon the dry matter put the best rectified Spirit of Wine, which digest till it is red: decant and put on fresh, digesting to dryness as before; this reiterate till all the tincture is extracted. Filtrate these tinctures, and abstract the Spirit by distillation; then upon the magma affuse new Spirit of Wine, so will you have a pure tincture, as deep as the reddest Wine and thoroughly transparent. 2. Take a quarter (of the weight of Coral

Chap. 4. Tinctura Corallorum composita. 645

Coral) of pure Oriental Bezoar : Levigate it into a most subtil powder, and make a strong tincture thereof, in the same manner, as before you made the tincture of Coral. These two tinctures reserve. 3. Take an eight part (of the weight of Coral) of saffron, and with the highest rectified Spirit of Wine extract a very strong and deep tincture in six or seven days ; filtrate it , and then mix it with the reserved tincture of Coral and Bezoar ; digest and circulate twenty days, then filtrate it again through brown paper : so will you have a glorious transparent tincture, and as red as Blood, which keep in a Glass close stopped for use.

II. You may also otherwise extract a tincture of Coral, by digesting the levigated powder thereof in Oyl of Citrons or Limons ; which being tinged, you may draw off the Oyl, and with the best rectified Spirit of Wine, or Spirit of Wine vitriolated (viz. by digesting equal parts of S. V. and Oyl of Vitriol together, and distiling in an Alembick in sand with a gentle fire, & then with a stronger, that they may pass together, reiterating this thrice, and then circulating for forty days :) you may draw the pure red tincture of Coral, for the purpose aforesaid.

III. This compound tincture of Coral is so strong and powerful, that it takes away all Impurities from the blood whatsoever, is a great Cordial, and of Wonderfull Virtue against all diseases proceeding of putrefaction, being used for some days : it is so wonderfull an enemy to putrefaction, that it is scarcely possible for any impurity to remain in the blood.

IV. It is a great Vulnerary and Traumatick, curing all curable wounds at once dressing, and therefore is of extraordinary use in spitting of blood, especially if it be caused from the rupture of a Vein : it revives the Spirits, cheers the heart, and mightily restores in Consumptions.

V. It is of singular use in burning and malignant fevers,

fevers, as the Measles, small Pox, Calenture, spotted Fever and the Plague, being as it were a balsom of life and vital powers, exalting nature to her highest degree, by quickning the native fire and heat.

VI. It is of good use in Hecticks, rectifies distempers of the head, cures Apoplexies, Epilepsies, Convulsions, Lethargies, Vertigo's, and such like: It prevails also against diseases of the stomach and heart, as in digestion, want of Appetite, Loathing, Vomiting, Fainting Swooning, Palpitation, sickness of heart, and melancholy habit and disposition of body.

VII. It is so great a de-obstructor, that it cures the Rickets in Children (their joynts also being bathed with Powers of Amber) and is found by experience to be admirable to comfort and warm the Stomach and Womb, and to cure a Chlorosis or Green sickness, and Cachexia.

VIII. And as it extinguishes the preternatural heat of Fevers; so also it comforts the natural powers, restores the radical moisture, fortifies the Spirits, and gives relief in Deliriums, Frenzy, Madness, Obstructions of the Terms, Wind in the bowels and Womb, &c.

IX. *The dose and way of taking of it.* You may give from ten drops, to twenty, thirty or forty, as the sick is in years and strength: and you may give it in white Wine, Sherry, or Canary, or in any proper Cordial water; and that three, four, five or six times a day, as you see occasion. *Price two shillings six pence an ounce.*

C H A P. V.

Tinctura ſtomachica noſtra ; *Our ſtomachick tincture.*

I. **T**ake tincture of Salt of Tartar, tincture of Antimony, of each a pound : black Pepper in fine Powder eight ounces : Cardamoms in powder two ounces : digeſt them in the ſaid tinctures for forty days in a Glaſs cloſe ſtopt, ſhaking it once or twice every day, then being well ſettled, decant the clear Liquor, which filtrate through brown paper ; ſo will you have a glorious, transparent, blood red tincture, of almoſt infinite Virtues, which keep in a Glaſs cloſe ſtopt for Uſe.

II. This tincture receives its name from its admirable property of warming, comforting, and ſtrengthening the ſtomach, taking away ſtomach-ſickneſs, and pains there, loathing, vomiting, indigeſtion, want of appetite, and wind in the ſame, and parts adjacent.

III. It is a moſt excellent thing to ſweeten the blood, open all obſtructions of the inward parts, as of the Liver, Spleen, Lungs, Womb, Reins, and Bladder. It brings down the Terms obſtructed, and is powerful againſt the Green-ſickneſs, Dropsie, Jaundice, Conſumption, Aſthma, Pleuriſie, Melancholy, Ulcers inward and outward, Scabs, and other Breakings out.

IV. It is of admirable uſe againſt all ſorts of Fevers, continual, putrid, and Peſtilential, as Meaſles, ſmall Pox, ſpotted Fever and Calenture ; it expreſſes the exorbitance of the Fever, takes away all the Symptoms, & cauſes reſt and eaſe. It is ſingular againſt the Plague, and all other diſeaſes ariſing from tharp-

ness and obstructions of the humours, or stagnation of the Blood.

V. It is an excellent remedy in all cases of putrefaction of the Blood and humours; prevails against Rheumatisms and Gouts, cuts tough flegm, and dissolves Tartarous matter, logging in the Ventricle: it is good against sighing and sadness, pains and stiches in the sides, and helps Trembling and Palpitation of the heart.

VI. As this tincture is a notable Aperitive, so it works all its effects powerfully, yet with a World of sweetness and pleasure; it opens obstructions in the Pancreas, Mesentery, and Meseraick Veins, dissolves the stagnation of the Blood, and all the most tenacious Viscosities wheresoever in any part of the body, most potently provoking the Terms, if given for some days according to Art.

VII. It provokes Urine, and is good against Gravel, Slime, and Viscous matter both in Reins and Bladder, purifying the whole Mass of Blood, and taking away the malignity of the humours, in any disease whatsoever, especially in the Kings-Evil, scirrhus and Leprose tumours, &c. in so much that there is scarcely the like general remedy in the whole Art of Physick.

VIII. It hastens and facilitates the Birth, and brings away the Secundine or after-birth, yea the child although dead. It is a present remedy against the Colick and after pains, as also in the Gripings of the Guts and Bowels, more especially if it be mixt with equal parts of our *Gutta Vitæ*, or Cordial drops.

IX. I cured with this tincture a certain woman of an inveterate pining and wasting, a supposed incurable Consumption, accompanied with vehement dolors of the bowels, after a two years despair, when she

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was ſo weak ſhe could not ſtand alone without two to hold her, looking like (as it were) the picture of Death, and given over as paſt hopes, by ſeveral able and learned Men.

X. She alone taking of this medicine in Sack, or Milk, or Ale ſweetned, but moſt commonly in Milk, morning, noon, and night, and ſometimes five or ſix times a day (drinking no drink without it) for about a month or five weeks time, reſtored her to the wonder of all that knew her.

XI. *The doſe of it is,* ſo much as will make the Vehicle as hot as the ſick can well endure it: you may give from ten drops to twenty, thirty or more, as you ſee occaſion *viz.* five, ſix or ſeven times a day. It may alſo be given in ſome proper Syrup or Julep. *Price two ſhillings an ounce.*

C H A P. VI.

Tinctura Bezoartica noſtra; *Our Cordial or Bezoartick Tincture.*

I. **T**ake *Carpobalaſamum* eight ounces: *Virginean ſnake-root*, *Contraſerva*, *Zedoary*, *biting Cinnamon*, *Winters bark*, *Bayberries*, of each four ounces: *Cloves*, *Mace*, *Nutmegs*, *Opium*, of each one ounce: *Saffron*, *Cochenele*, *Ginger*, of each half an ounce, bruise what are to be bruised, and affuſe thereon rectified Spirit of Wine a Gallon: digeſt twenty days, ſhaking it two or three times a day; then letting it well ſettle, decant the pure clear tincture, in which diſſolve *Camphir* two ounces: keep it in a Glaſs cloſe ſtopt for uſe. You may if you pleaſe prepare it with tincture of Salt of *Tartar* inſtead of the rectified Spirit of Wine, and it will be

be yet more excellent and powerful, but a great deal the dearer.

II. This tincture is Cephalick, stomachick, Cardiack and Hysterick; also sudorifick, carminative, alexipharmick, diuretick, and Anodyne. It is a notable Antifebritick, and powerfully resists the force of burning, malignant, and pestilential Fevers, as the Fever *Causos* measles, small Pox, Purples, Spotted, Fever, Calenture, sweating sickness and Plague.

III. It is singularly good against hypochondriack Melancholy, Quartans, & other Chronick diseases of like kind; it is an Antidote against all sorts of Poysons, the bitings of mad Dogs, Serpents, Vipers, and other Venomous creatures: and is good to kill worms in Children.

IV. It mightily strengthens and comforts the animal Spirits, fortifies the Brain, and cures all diseases thereof, proceeding from cold and moisture, or a flux of flegmatick and viscous humours to the same, as the Apoplexy, Falling-sickness, Lethargy, Carus, drowfiness, dulness, sleepiness, Headachs, Megrims, Vertigoes, Convulsions, Palsies, and other diseases of like kind.

V. Drawn up the Nostrils it gently purges and cleanses the Head of cold, moist and pituitous humours, and makes a great evacuation by the Pallat and Nose, and so used (as well as taken inwardly) it is very profitable against all the aforementioned diseases of the Head.

VI. It revives and restores the Vital Spirits, cheers the heart, strengthens the bowels, revives languishing nature, and fortifies the whole body: It is excellent good in Consumptions, hecticks, faintings, tremblings, Palpitation of the heart, with other Cardiack passions.

VII. It marvellously strengthens the stomach, warms
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and comforts it, provokes Appetite, helps Digestion, and takes away nauſeouſneſs, loathing and Vomiting: and is of ſingular good uſe for ſuch as are affected with a vehement pain in that bowel.

VIII. It is profitable againſt fits of the Mother, fainting and Swooning; it cleanſes, warms, comforts and ſtrengthens the womb; and being often and long taken by Barren Women, who are of a ſoft, cold and moiſt conſtitution, it takes away that indiſpoſition, and cauſes fruitfulneſs.

IX. It provokes ſweat powerfully, and expells all manner of Venom, poiſon, and malignity through the pores of the ſkin: it expells Wind from all parts of the body, yea, from the Veins and Arteries; it gives preſent eaſe in the Colick, Griping and Wind in the ſtomach and bowels, and reſreſhes all the Viſcera.

X. It provokes Urine and the Terms, facilitates both birth and after-birth, takes away after-pains in Child-bed Women, clears the paſſages of the Urine, and expells ſand or gravel, and ſlime, from the Reins, Ureters, and Bladder.

XI. *The doſe and way of taking it.* As a *preſervative* you may take half a ſpoonful or ſomething leſs of it in the morning faſting; a little before dinner; and laſt at night going to bed. *Curatively*, give it when, and as often as the exigence requires; and if it be the Plague, or any other malign Fever, let the ſick be in bed, and well covered; then give it from half a ſpoonful to a Spoonful, in a Glaſs of Sack, burnt White-Wine, or ſome proper Julep; reiterate it in like manner for three or four days at leaſt; and after give half a ſpoonful every morning and night. For fainting, Swooning, &c. give it at the time of the Fit.

Price ſix pence an ounce.

C H A P. VII.

Tinctura Hysterica, *Our Tincture against Fits.*

I. **T**ake powers of Amber five pints: Castoreum in fine powder, horse hoofs, or Ox horns rasped, of each six ounces: mix and digest forty days in a warm Balneo Mariæ, shaking the Glass two or three times a day: then being settled, decant the clear tincture, and keep it for use. You may make this tincture also, with tincture of Salt of Tartar, or tincture of Antimony, as you please your self.

II. This was invented against those called Hysterick Fits; viz. Suffocation, or Fits of the Mother, for which it is a most admirable thing (and has indeed scarcely any equal.)

III. It is not only of wonderfull force against Fits of the Mother, but also against the Colick, Wind, Vertigo, Megrin, Falling-sickness, Palsie, Apoplexie, Trembling, Palpitation of the heart, Carus, Lethargy, obstructions and weakneses of the Head, Brain, Nerves and Womb.

IV. It quickens the Senses, revives the Spirits, attenuates, opens, discusses, strengthens, resists poyson, provokes Urine and the Terms: being held in the mouth, it helps the tooth-ach, and being taken inwardly, or outwardly bathed with, it is a most admirable thing to ease pains.

V. It is a most powerful thing to cause sweat, and as good a sudorifick as is ordinarily to be met with, expelling Tartarous diseases, as the Scurvy, Pox, Dropsy, Jaundice, Gout, Rheumatism, &c. It expells Wind in any part, and by its balsamick virtue resists putrefaction, expelling the Malignity of the Measles,

Measles, ſmall Pox, ſpotted fever, Plague, Poyſon, biting of mad Dogs, &c.

VI. It is found by experience to open the moſt inveterate obſtructions of the Womb, and Meſentery, as alſo of the Liver, Spleen and Bowels, and therefore is profitably given in the Cachexia, green ſickneſs in Virgins, Rickets in Children, as alſo to kill worms whether in old or young.

VII. *The doſe and manner of taking it.* You may give it in White or Rheniſh-wine, or in Sherry or Canary, according to the intention; or in any proper Syrup, or Julep: give it out of the Fit, in the morning faſting, and laſt at night going to bed: but if any Fit comes, give it in the time of the Fit. The doſe is from twenty drops to forty, ſixty or more, according to age and ſtrength. *Price eight pence an ounce.*

C H A P. VIII.

Tinctura cathartica noſt. *Our purging Tincture.*

I. **T**ake the beſt rectified Spirit of Wine five quarts choice Sena twenty ounces: Powder of Jalap five ounces: mix them, and digeſt in a warm Balneo Mariæ eight or ten days, ſhaking the Glaſs two or three times a day: then being ſettled, decant the clear tincture for uſe. This tincture may alſo be made with tincture of Salt of Tartar, or tincture of Antimnoy.

II. It is an exceeding good thing againſt all Chronick, hypochondriack diſeaſes, as Dropſies, Jaundices, Scurvy, Gout, and head-achs, Megrims, Vertigo's lethargies, dullneſs, and drouſineſs, and other cold and moiſt diſtempers of the head and brain.

III. It powerfully opens obſtructions, and takes away pains of the Liver, Spleen, Meſentery and womb;

womb; is good against nausea, Loathing and Vomiting, and cleanses a foul stomach, causing a good Appetite and digestion, opening, cleansing and comforting all those parts.

IV. It cures Gouts, Rheumatisms, Kings-evil, Cachexia, and other stubborn and rebellious diseases: it prevails powerfully against loathing in Virgins, the green sickness, and other like distempers incident to that sex, and so admirably takes them away, that they never return again.

V. It is a very excellent thing to cure all hard, difficult, and chronick diseases, and is profitably given in the Pox, Gonorrhœa, Scabs, Leprosies, Morpew, old and running sores, Ulcers Fistulaes, Hypochondriack Melancholy, and other like inveterate and malign diseases.

VI. It takes away the causes in Fits of the Mother, and is so great a thing against the Scurvy, that it has but few equals: for it purges admirably, and powerfully evacuates all watery humours by stool, after a pleasant and wonderful manner.

VII. It purges all humours even to a Miracle, but chiefly such as are watery, things viscous, and Melancholy, and is of exceeding use to such as are itchy, mangy, or Leprous, or have old filthy running sores about them, especially in the Leggs, and parts depending. It removes Scabs, and Venereal botches, and mightily facilitates the cure of the French Pox, being given after the use of Mercurials.

VIII. It provokes Urine, and potently brings away whatever obstructs the passages of the Urine in the Reins, Ureters or Bladder, as Gravel, sand, Slime, and viscous humours. It also empties the stomach and bowels of all their filth, cleanses like soap, and performs even desperate Cures.

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IX. *The doſe and manner of taking it.* You may give of it from half a ſpoonful, to a ſpoonful, two ſpoonfuls, or more, as you ſee occaſion, reſpecting alſo the Age and ſtrength of the Sick: to Children and weak perſons, you muſt give but a ſmall doſe; to elder and ſtronger perſons a greater: give it in a Glaſs of Ale or White-wine ſweetned with Sugar, or mix it with a little Syrup, and ſo take it. Let it be given in the morning faſting, drinking warm broth, mace-Ale or poſſetdrink after it, and keeping warm as in taking other Purges: and let it be repeated twice a week or more as need requires. *Price ſix pence an ounce.*

C H A P. IX.

Guttæ vitæ noſtræ; Our cordial Drops.

I. **T**ake the beſt Tartarized Spirit of Wine, or tincture of Salt of Tartar, or tincture of Antimony, five quarts; Or take Powers of Cloves Carraways, Aniſeeds, Limons and Roſemary, of each a quart: mix them together, and put it in five Glaſſes, holding ſomewhat more than a quart a piece, into each Glaſs a quart. Into the firſt Glaſs put Theban Opium eight ounces, diſſolved in a part of the ſame Powers. Into the ſecond Glaſs put Saffron and Cochinele (the latter in fine powder) of each one ounce. Into the third put Caſtoreum, freed from ſkins and fat, and reduced into powder, two ounces. Into the fourth put Cloves and Nutmegs in powder, of each an ounce. Into the fifth put Virginean ſnakeroot bruised, Zedoary in groſs powder, of each one ounce. Diſteſt all ſeveral a month in a place neither hot nor cold, ſhaking them twice a day. Then let the Opium ſtand three days without ſhaking (as alſo the tincture of Saffron, &c.) Decant the clear Opiate tincture into a great Glaſs holding about ſix quarts, which reſerve. To the Magma of the Opium, put the
clear

clear decanted tincture of Saffron, shake them well together twice a day for three days, then let the Glass stand, (as also the third Glass containing the tincture of Castor) three days without shaking; after which decant the clear tincture of the Saffron from the Opiate Magma, and put it to the tincture of Opium in the great Glass. To the Opiate Magma put the clear decanted tincture of Castor, which shake well together twice a day for three days; then let the Glass stand (as also the fourth Glass containing the tincture of Cloves &c.) three days, without shaking; after which decant the clear tincture of the Castor, and put it to the tincture of Opium in the great Glass, as aforesaid. To the Opiate Magma put the clear decanted tincture of Cloves, which shake well together twice a day for three days; then let the Glass stand (as also the fifth Glass containing the tincture of Virginean Snakeroot, &c.) three days without shaking; after which decant the clear tincture of Cloves, and put it to the tincture of Opium in the great Glass, as before. Lastly to the Opiate Magma, put the clear decanted tincture of Virginean Snakeroot, which shake together twice a day for three days; then let it stand three days without shaking; decant the clear tincture, and put it to the former, the which keep in a glass close stopped. In this mixt tincture dissolve Narcotick Sulphur of Vitriol one ounce: choice Camphir two ounces: shake them, digest ten days, and keep the whole in a Glass bottle, clost stopt for use.

II. This medicament is as well as a preservative from, a cure for, all pestilential and infectious diseases: it preserves health, represses Melancholy; causes chearfulness, and cures the bitings or stingings of any Mad Dog, Serpent, Viper, or other poysonous creature, and powerfully expells poyson.

III. It cures the Vertigo, Epilepsy, Apoplexy, Palsy, Trembling, Depravation of the Senses, Frenzy, Madness, want of Sleep and Rest, inveterate pains of
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the Head, Megrin, ſudain Coughs, Colds, Aſthma's, difficulty of breathing, bleeding in any part, Spitting of Blood, ſickneſs at ſtomach, Palpitation, ſwooning, and other paſſions of the heart.

IV. It is a moſt admirable thing againſt the Colick, Griping of the Guts, Wind, pain of the ſtomach and Spleen, Iliack paſſion, ſharp & corroding humours in the bowels, and all other pains whatſoever : It cures a Diarrhœa, Dyſenteria, and Lienteria, the flux of the Liver, overflowing of the Terms, and Whites in Women: and is a famous remedy to prevent miſcariage.

V. It is of good uſe againſt Scabs, Pſora, Leproſie and Elephantiaſis, by taking away the acrimony of the humours, ſweetning the Blood, & expelling the filth and malignity thereof through the Pores of the ſkin; for it powerfully provokes ſweat, being taken laſt at night going to bed.

VI. It chears the heart, revives the Spirits, makes a glad Soul, ſtrengthens the whole Body, comforts the ſtomach, helps Appetite and indigeſtion, removes Languiſhing, corroborates the faculties, reſtores waſtings, and decays of Nature, is profitable againſt pining, and cures a lingering Conſumption, if taken in due time, or before the Patient is paſt cure.

VII. It is ſo good a thing againſt ſpitting of blood, piſſing of blood, bleeding at the Noſe, and all other fluxes of blood in any part of the Body, that there is ſcarcely any thing ſuperiour to it &, therefore is found to be profitable in all Conſumptive weakneſſes, Phthiſick, Ulcers, of the Lungs, &c.

VIII. It is good againſt the Stone and Gravel, ſlime, filth, and Viſcous humours in the Reins, Ureters and Bladder, for it gives preſent eaſe and reſt, provokes Urine, and takes away the heat and ſharpneſs thereof; cures the Dyſuria, Iſchuria, and ſtrangury, helps

Ulcers of the Bladder, strengthens the Genitals, and and after an admirable manner, assists and fortifies nature.

IX. I have given these Drops in the Measles and small Pox with singular advantages; I have given them to near two hundred Children in the small Pox, as also to elder persons both Men and Women, and always with so good success, that no one has yet dy'd under my Hand of those distempers, who have assiduously taken them according to my order and directions.

X. They are of most excellent use for all such as are troubled with *Gouts*, whether in hands, Armes, Hips, Knees, Leggs or feet; as also for all such as are afflicted with vehement and painfull Rheumatisms, pains from the Scurvy, or Pox, Sciatica's, Quartan Agues, and other Melancholy, cold and moist diseases arising from sharp, Vitious, and Tartarous humours: they give ease upon the Spot.

XI. They are also very powerful in many affects of the Womb; they cure weakneses, whites, Gonorrhœas, and other Lassitudes of those parts, after due purging. They prevail against all vehement pains of the sides, stitches, Pleurifies, and such as languish from poysons formerly given, labour under Hecticks, and the most intolerable pains.

XII. These Cordial drops restore radical moisture, comforting every member and part of Mans Body: they cure the tooth-ach, and Pains in the Ears, and the like, being held in the mouth, and dropt into the pained Ear. They are also an excellent remedy against vehement Vomiting, stopping it in an Instant, whether it proceeds from wind, cold, sharp humours, or surfeits.

XIII. They are a preservative from and cure of the
Plague,

Plague, Peſtilence, ſpotted Feaver, Calenture, or any other like infectious diſeaſe; and being infected they are a remedy beyond expectation; for they perform their operations (which is chiefly by ſweat, and ſometimes by Urine) with great ſafety, ſpeed, dexterity, and eaſe, being fitted for any perſon of what age, ſex, or quality ſoever, ſtrengthening the brain, chearing the heart, comforting nature, reſtoring the Body, and reviving all the Spirits, Natural, Vital, and Animal.

XIV. *The quantity to be taken at a time.* This is to be regulated according to the age of the ſick; to a Child of a month, quarter, half-year, or year old, you may give from five drops to ten: from a year to two, three, four, or five years old, you may give from ten to ſixteen drops: and to elder perſons from ſix or ſeven years of Age to twelve or fourteen, you may give from ſixteen to twenty four drops: from 14 years of Age to twenty, thirty, forty, ſixty, eighty years and upwards, you may give from twenty four to forty, fifty, or ſixty drops at a time, which in ordinary caſes may be the higheſt doſe; and may be ſafely given to women with Child, being excellent to prevent miſcarriage as aforeſaid.

XV. *The doſe and manner of taking them.* Let them always be taken at night going to bed, and that alſo every night, if need requires: and let them be exhibited in Canary, or white Wine and Sugar, Mace-ale, or the like; or you may give them in a little ſyrup, or ſome proper Julep, and ſo to be covered down, and to reſt upon them. If they be taken for a Cough which is troubleſome in the day time, or for prevention of any illneſs, let them be taken in the morning faſting in a Glaſs of ſack, and you need fear no hurt that day. *Price two ſhillings the ounce.*

CHAP. X.

Tinctura Martis: Tincture or Extract of Steel.

I. **D**issolve filings of Steel in Oyl of Vitriol one part, mixed with Water two parts: filter it hot and crystalize: exsiccate the Crystals, stirring them continually, so have you a purple Crocus: extract therefrom a Tincture with distilled Vinegar; then in Balneo Mariæ abstract the Vinegar, and edulcorate the remainder, by often drawing from it fair Water, and extract with Spirit of Wine.

II. Or thus: Dissolve Filings of Steel in purified juice of Limons, digest for a Month, then filter into a glass Vessel, and in a Sand heat inspissate to the consistence of a liquid Extract.

III. Or thus: Take Filings of Steel one pound: Sal Armoniack two pound: mix and distil in a Retort, with a gentle Fire at first, then with a stronger: the Magma remaining edulcorate by much washing: then put it into a Cucurbit, and with Spirit of Wine extract a Tincture: decant and put on new Spirit, till the Magma will yield no more Tincture; then abstract the half of the Spirit by an Alembick, and the Tincture remaining filtrate through brown Paper, and keep it for use.

IV. Or thus: Take reverberated Filings of Mars one pound: dulcified Spirit of Nitre three pounds: digest them together for two days, or till the Spirit is tinged of a rubicund colour; decant and keep it for use.

V. Or thus: Take filings of Mars a pound: fair Water eight ounces: Oyl of Salt one ounce: digest all together two or three days, stirring the matter twice a day: then add Crystals of Tartar three ounces, mixed by degrees with a sufficient

Sufficient quantity of Spring Water; boyl all for two hours, in an iron Pot, always adding fresh Water, as the other evaporates. Being settled, filtrate the clear, and evaporate to the consistence of a thin Syrup; add a half part of rectified Spirit of Wine, and keep the Tincture for use.

VI. Or thus: Take rust of Iron made by dew, twelve ounces: white Tartar two pounds: powder and mix them together, boyl them in a great iron Pot, with two gallons of rain Water for twelve hours: stir with an iron Spatula from time to time, and put in more Water (but boyling hot) as the former consumes: at length let it settle a while, so have you a black Liquor, which is the Tincture. Filtrate and evaporate it in an earthen Pan over a sand heat, to the thickness of a Syrup, or till a pellicule shall arise.

VII. All these preparations of Steel are singularly good, so that there is scarcely any preference; but if one may make an Estimate, the third and sixth Recipe's are thought to have the precedence, the one being a pure red Tincture; the other a noble Extract, of an admirable sweetness in its tast, being reduced to such a thickness that it might keep the Letter; but both the prescripts, yea all of them are of one and the same vertue.

VIII. The Tincture or Extract of Steel, is a very great Aperitive, opens the most inveterate Obstructions of the Liver, Spleen, Pancreas, Mesentery, Reins and Womb; is a most excellent thing against Cachexies, Dropsies, stoppage of the Terms, for it sweetens the acid humor, which is the cause of all Obstructions.

IX. It is a perfect cure for the green Sickness in Virgins, Rickets in Children, Quartan Agues, and hypochondriack Melancholy, for which last, there is scarcely any greater Remedy: It cures the Scurvy,

and takes away a Schirrhus both of Liver and spleen. It is said also to be a specifick against the Jaundice, Black and Yellow, Dropsies and Kings Evil.

X. It takes away all Obstructions of the Reins, Ureters and Bladder. It is a powerful Remedy, and has a singular property to attenuate *Atra bilis* and Melancholy. And in all deplorable Diseases proceeding from corruption of Humors, it is a most admirable Remedy. It rectifies the Stomach, and sets it to rights, which is the root of most diseases afflicting Mankind.

XI. It strengthens all the internal Viscera, dissolves all coagulated Humours and tartarous matter, and has been found profitable against Rheumatisms, Gouts, the Stone, and other tartarous Diseases afflicting the Liver, Spleen or Mesentery.

XII. It temperates the acimony of acid humors, and performs all the Cures aforesaid, when all other Remedies are ineffectual: moreover it is known to be a specifick for killing Worms in Children. 'Tis indeed a noble Medicament, beyond thousands of others.

XIII. *The Dose and way of using it.* The Tinctures may be given from six drops to twenty, and if they be given in a greater Dose, as from half a drachm to a drachm, they move to vomit, expelling both Choler and Flegm: the best way is to begin with six or eight drops, and so to increase two drops every day, till it moves to Vomit. The last prescript may be given from half a drachm to a drachm. Let them be given in Beer, Ale, Wine, or some convenient Syrup, every morning fasting. *Price two Shilling six pence an Ounce.*

C H A P. XI.

Spiritus Nitri Alcoholizatus : *Alcoholised Spirit of Nitre.*

I. **T**ake rectified Spirit of Niter half a pound : of the best rectified Spirit of Wine a pound : mix them together, and digest for forty days : then put them into a glass Retort with a long neck in Sand, applying a very capacious Receiver, and distill to dryness ; first with a very gentle Fire, for otherwise much of the volatile Spirit will be lost ; afterwards with a stronger, till all the Spirit be come over. The Vessel being cooled, cohobate the distilled Spirit, and repeat the cohobation three or four times in like manner. So have you a Spirit most wonderfully volatile, and most fragrant and odoriferous, which keep in a Glass very close stopt for use ; being taken pro Circulato majori Paracelsi.

II. This is the highest Volatile acid in the whole Republick of Medicine, penetrating in a very short space the whole human Body from Head to Foot, and therefore is profitable in almost infinite Diseases, being a powerful attenuator and incider.

III. It is a most admirable Diuretick, inferiour to no other Medicament, for it powerfully provokes Urine, and opens all Obstructions in the Reins, Ureters and Bladder ; and expels from all those parts Stones, Sand or Gravel, Slime and other Tartarous Matter. And I am perswaded from the experience I have had thereof, That it transcends all other Medicines in breaking of the Stone ; and that if such a thing be possible to be done by any Medicine, It may be done by this.

IV. It is a great Alexipharmick, and resists putrefaction in the highest degree, it cures the Plague and all manner of putrid, malign and pestilential Feavers, driving the Poyson and malignity of the Disease from the Heart, and expelling it through the Pores of the Skin by Sweat.

V. It is a most admirable Febrifuge, extinguishes the preternatural heat of all burning Feavers, takes away all their evil Symptoms, and famously quenches Thirst; and therefore is profitable in all great Inflammations in any part of the Body, but chiefly of the Lungs.

VI. As the Medicine is highly acute, so it as mightily conduces to the cure of many chronick Diseases, as the Scurvy, Cachexy, Dropsie, Jaundice, Quartans, hypochondriack Melancholy, Herpes, Scabs, Itch, Leprosie, and other malign eruptions of the Skin; prevailing also against several inveterate Diseases of the Head and Brain.

VII. It opens Obstructions in all parts of the Body, almost to a Miracle; so that setting aside the Tincture of Steel, there is not a greater deobstruenter in the World: It is good in Peripneumonia's, and most other Diseases of the Breast and Lungs, as Coughs, Colds, Asthma's, shortness of Breath, Wheazing, difficulty of Breathing and such like.

VIII. It is a great Antipleuretick, and by the relation of some Physicians which have used it in that case, a most famous Medicine against that Disease. It is resolutive, discussive, sudorifick, Alexipharmick and Anodyne; takes away the unnatural Fermentation of Humors, and is a great specifick in the Colick, being given in a little Cinamon-Water, or fair Water, and also mixed with a little Oyl of Nutmegs and Civet, and anointed on the Navil.

IX. It

IX. It is good in Gargarisms and Lotions, to stop Gangreens, take away rotten Flesh, Corns, Warts, as also to heal Cankers, Sores and Ulcers in the Mouth and other parts. It is preferable before *A. F.* for making Fucuses for the Face, being clear and delicate, whereas those made with *A. F.* rather blacken than whiten it.

X. *The Dose and way of using it.* You may give it from ten to twenty drops, two scruples or a drachm, according to the occasion and necessity: it may be taken in Beer, Ale, Mead, Wine, Water or Syrup. If it be given all day long in all that the sick Drinks, you may give it from ten drops to twenty or twenty five, as need requires. Otherwise give it Morning, Noon and Night, from half a drachm to a drachm, in the vehicles aforesaid. *Price two Shillings six pence an ounce.*

C H A P. XII.

Spiritus Anodynus noster. *Our Spirit easing Pain.*

I. **T**ake powers of Amber, or of Limons, or of Ani-seeds, a gallon: Thebian Opium eight ounces: choice Camphir six ounces: dissolve the Opium and extract the Tincture thereof with the powers first, which being very clear settled, decant off into another Glass, and if you please filter it: in this clear Tincture dissolve the Camphir, by degrees by grinding it in a pure clean glass Mortar, then mix all together, and keep it for use.

II. This Medicine receives its name from the admirable faculty which it has of easing Pain, in any part of the Body: and this it performs as well by outward application, as by inwardly taking of it,
or

or upon occasion by both these ways together.

III. It gives immediate ease in all intolerable pains of the Head, as the Headach, whether new or old, Megrims and pains in the Teeth and Ears; as also pains in the Nose and roof of the Mouth, although proceeding from the French Pox: and this it does by barely bathing the places affected therewith twice a day, and applying a cloth thereon, dipped in the same.

IV. It eases pains in the Neck, Convulsions, Cramp, and such like, though never so vehement, in any part of the Body, as also stiches and pains in the Stomach and Sides, the Pleurisie and bastard Pleurisie, pains in Womens Breasts coming from Cold, or Milk curdled, or from Blows, &c. by bathing the said afflicted parts therewith two or three times a day as aforesaid.

V. It gives ease in all intolerable pains in the Sholders, Arms, Hands, Fingers, or joynts of those parts, proceeding from cold and moisture, or from Blows or Strains, or the Gout, or French Pox, or any tartarous matter lodged in the part.

VI. It is of singular use in Gangreens, to bath withal, twice a day at least: for if the Mortification be not compleat, it presently retrieves it, calling back again the baffled Spirits; and secures the part against any future assaults of the Disease.

VII. In all manner of vehement pains of the Bowels and Belly, Convulsions of the Mesentery, the Cholick, griping of the Guts, Wind, &c. as also in all manner of After-pains in Women in Childbed, there is no greater, speedier nor more admirable a Remedy; for in these causes it gives relief almost in a moment; by well bathing the part, and applying over the parts a Flannel well warmed and moistned
in

in the ſame, with repetition of the bathing at leaſt two or three times a day, according as you ſee need require.

VIII. In all manner of pains of the Hips, Thighs, Knees, Leggs, Shinbones, Ankles, Feet and Toes, coming from extream weakneſs, bruifes, falls, blows, ſtrains, colds, defluxions of humors, tumors or any tartarous matter or gelly in the Joynts, or proceeding from the French Pox, the Scurvy, a Rheumatism, Cramp or Gout, &c. there is no more preſent Remedy, than by bathing the ſaid parts, two, three, or more times a day, with this our Anodyne Spirit.

IX. It is an admirable thing in all weakneſſes of the Joynts, the Rickets in Children, and vehement pains in the back, whether of Men or Women; as alſo for the Stone, Sand, Gravel or Slime, and vehement pain in the Yard in making of Water, by bathing therewith, and injecting it into the Yard with a Syringe, being firſt mixed with a little Water.

X. *The Doſe and manner of taking it inwardly.* In all the aforeſaid Diſeaſes it will be of mighty conſequence to take it inwardly, for being ſo taken alſo, it performs the work to a miracle. The Doſe is exactly the ſame with the *Gutte Vita* in the former Chapter, to which I refer you: And you may take it alſo after the ſame manner, at the ſame times, and in the ſame vehicles, chiefly at Night going to Bed. *Price twelve Pence an ounce.*

C H A P. XIII.

Spiritus Aperiens noster. *Our opening Spirit.*

I. **T**ake the best rectified spirit of Wine, such as will fire Gun-powder, a quart : the best Oyl of Sulphur per Campanam, Oyl of Vitriol, Golden Oyl of Salt, of each six ounces : mix the Oyls first together, then mix them with the spirit of Wine by little and little till all is put in : shake all well together, digest for three months, then distil in a glass Alembick or Cucurbit, with a very gentle and gradual fire, that the subtil and volatile spirit only may come over, leaving a thick magma at bottom, of the substance of Honey, or consistence of a soft extract. In this distillation you must be cautious that your fire be not too great, for if it be, it will force over all the Magma or faces with the Spirit, and then your labour will be lost, and all your work spoiled.

II. This Spirit is of most subtil and volatile Parts, and a Specifick in all diseases of the Brain whatsoever, as well as in diseases of the Stomach, Lungs, Liver, Spleen, Reins, Bladder and Womb. It is a Specifick not only against the Stone whether in the Reins or Bladder, which by the assiduous use of it, it radically dissolves, but most powerfully opens all Obstructions in what part of the body soever.

III. It cures the *Cachexie* and *Chlorosis* or Green-sickness, stops vomiting though never so violent, strengthens the Stomach to a miracle, provokes the Terms, facilitates the Birth, and cleanses the Womb, and all its vessels from putrefaction and filth (from whence proceed Vapours, fits of the Mother, Swooning, and such like Diseases) beyond any other Medicine.

IV. And

IV. And as there is no more powerful remedy against the Stone and Gravel, in the Reins, Ureters, and Bladder : so no more excellent thing is known for the absolute cure of old and inveterate *Head-achs*, *Megrims*, *Vertigo's*, *Lethargies*, *Apoplexies*, *Palsies*, *Epilepsies*, *Convulsions*, *fits of the Mother*, *Gouts*, and other like *Neurotick* diseases.

V. This Spirit comforts the Stomach, wonderfully abating all Inflammations, quenching Thirst, and repressing the heat of Feavers : it causes a good appetite, and takes away Cholerick and gross melancholy humours from the Stomach, Lungs, and Bowels, purifying the blood and resisting poyson and putrefaction.

VI. It is a noble medicament and being taken inwardly, it cures Coughs, Colds, Asthma's, Phthificks, Ulcers of the Lungs, Consumptions, Rickets, Pleurifies, Stitches and pains of the sides. It opens all Obstructions of the Stomach, Lungs, Liver, Spleen, Bowels, Reins and Womb, sweetens and cleanses the mass of blood, radically cures the Scurvy, Cachexy, Cholick, and other ill habits of the Body.

VII. It is an excellent Traumatick and Vulnerary, and cures all manner of Sores, Ulcers, Fistula's, Cancers, Scabs, Itch, Scurff, Morpew, Leprosy, and the like. It is an admirable thing used as a diet in the French Pox, being much beyond other drinks for the same purpose. And it also cures Green wounds, for the most part, at once dressing.

VIII. It helps spitting of Blood, it is good against Bruises, and prevents Gangrenes or mortifications : It is a most excellent thing indeed in the *Gout*, *Rheumatisms*, and most external pains, being bathed outwardly upon the place, morning, and evening, as also taken inwardly by the following directions.

IX. It

IX. It cures the Scurvy to a miracle, is an excellent Aperitive and Diuretick, and a great cooler: it keeps the Body soluble, cures continual Feavers and Agues, chiefly Tertians; it strengthens the Brain, Nerves, Muscles and Joynts, helps shortness of Breath and difficulty of Breathing: and being long and assiduously used, cures a confirmed Leprosie.

X. It is a very good thing in hestick Feavers, restores radical moisture, extinguishes all preternatural heat, and acrimonious humors lodged in the Stomach, Bowels and Blood. There is nothing more powerful in expelling of Poyson, of what kind soever, and curing of the biting of mad-Dogs, Serpents, Vipers, or other venomous Creatures.

XI. It has a balsamick property, and renovates the whole Man, comforting and restoring the Head, Heart and Stomach; it cuts, discusses and cleanses, is a specifick against the Dropsie, and all flatulent, watry and tarterous Viscosity. It kills Worms, helps a languishing Stomack, is good in fits of the Mother, and is a wonderful thing against the infection of the Plague and other malign and pestilential Feavers, beyond almost all things yet known.

XII. *The Dose and manner of taking it.* You may take from ten drops to twenty, thirty, forty or sixty drops or more, in all the liquors you drink every day, whether Beer, Ale or Wine, observing the age of the person: when you begin to take it, drink no liquor without it for some Months. *Price twelve Pence an ounce.*

C H A P. XIV.

Spiritus Antiasthmaticus noster. *Our Spirit against Asthma's.*

I. **T**ake Sal Armoniack a pound; Salt of Tartar a pound and half: Spring Water a pint, put all into a Retort, and distil in Sand, so have you first a volatile Salt, then a sweet flegm: dissolve the Salt in the Phlegm, and reserve it. 2. Take the Urine of a sound man thirty pounds the best rectified spirit of Wine three pounds: let them ferment together for six weeks, then add Salt of Tartar a pound: distil by a Vesica; then rectify and dephlegmate the Spirit, and reserve it also. 3. Take Harts-Horn sawed into small bits, as much as you please, put them into an earthen Retort luted, and distil in a naked fire, so have you, first, a water with a very thin Oyl: Secondly, a Spirit with Volatile Salt: lastly a thick red Oyl very stinking: the Spirit rectify in Sand per se, till it is very subtil and pure. 4. Take of the first reserved Spirit of Sal Armoniack a pound: of the reserved Spirit of Urine and Harts-horn, of each a quarter of a pound, mix them together, and unite them, by drawing them over together in one distillation.

II. This is a great medicine indeed, and almost a *Panacea* for most diseases, chiefly of the Head and Thorax, as Apoplexies, Epilepsies, Convulsions, Lethargies, Carus, Headach, Megrin, Vertigo, Deafness, Tooth-ach, pains and stiches in the sides, Pleurifies, Obstructions of the Lungs, Wheefings, shortness of breath, difficulty of breathing, Asthma's and the like, in which diseases it has hardly any superiour.

III. In

III. In the Pleurisy it is a real specifick, for it does that of it self, which is otherwise performed by blood letting, and with as much speed and security to the Patient, for it opens all the Obstructions of those parts, and takes away the stagnation of the blood.

IV. It sweetens the blood and humours, taking away their Acrimony, and unnatural Acidity; the chief cause of the Scurvy, Gout, Rheumatism, and Dropsy, in all which diseases it is a most admirable specifick, and cures almost to a miracle.

V. It attenuates, incides, is Diuretick, Diaphoretick and resolute, opening all manner of Obstructions in any part. It prevails in diseases of the Womb, as foulness and windyness, of the Womb, Dropsy of the Womb, fits of the Mother, Obstructions of the Terms, Barrenness, &c.

VI. It is a certain remedy against Quartans, and is powerful against the Stone, Gravel, Slime and viscous Matter whether in the Reins, Ureters, or Bladder: gives ease in painful making of water, and cools any preternatural heat or Inflammation of those parts.

V.I. It takes away Flegm, and other Viscosities, obstructing the stomach, Breast and Lungs, even when life has been totally despaired of; raising the sick beyond all expectation: You may take it in a small or weak lixivium of Salt of Tartar, impregnated with the tincture of the juyce of Liquorice, and so you will find it exceeding good against Coughs, Colds, Wheesings, Asthma's, and all other like diseases of the Breast, Lungs, Reins, and Bladder.

VIII. It is a wonderful piercing spirit, and is made so much the more piercing from the Volatile Salt of Urine. It is a mighty thing against the Plague, Cauter, spotted Feaver, small Pox, and all sorts of malign

malign Feavers: particularly in the Colick, it cures to a wonder.

IX. It is of great use against the Rickets in Children, opening Obstructions, even of the Nerves, and therefore is profitable against Numbness, Lameness, Gouts, Palsies, and such like. It quenches thirst, cools all præternatural heats, purifies and loosens the Blood, and kills Worms.

X. *The Dose and manner of taking of it.* You may take it from nine drops to twenty or more according to age and strength. To young Infants, you may give two or three drops; let it be given in Canary, or a good tincture of the juyce of Liquorice made in Spring Water. The Sick may take it every day for some time, and that, in all the drink they take, at least five, six or seven times a day: So taken, it causes a most excellent freedom of breathing, for which I here commend it to the world. *Price two shillings an ounce.*

C H A P. XV.

Potestates Cornu Cervi, Powers of Harts-horn.

I. **M**ake a very Volatile Spirit of Harts-horn with the best Spirit of Wine, put this upon fresh spirit of Harts-horn, strongly impregnated with the Volatile Salt, draw off the spirit, and Cohobate upon the remaining matter (if any be) seven times, so will you have a most subtil Spirit impregnated strongly with the Volatile Salt: Take of this Spirit twenty ounces, of the Oyl of Harts-horn purely rectified five ounces, mix them together, and digest a month in a very gentle heat: then draw them off by distillation in a glass Alembick, in Balneo, so will they

be perfectly united, and the Powers of Harts-horn will be intire, which keep in a Glass close stopt for use.

II. I had not inserted this medicament into this Book, had it not been for its admirable excellency in curing fits of the Mother, the which I have known it do in several persons, only by touching their Nostrils with two or three drops thereof: and in this disease it does that in two or three minutes time, which will not be done in some hours, by another Medicine: it brings out of the fit almost in a moment.

III. If the disease is vehement, and has been of long continuance, you will do well not only to touch the Nostrils with two or three drops thereof, but also to give two or three drops thereof inwardly in a glass of Sack; it has perfected the cure in several to my knowledge in a few days taking thereof.

IV. It is of like virtue in repressing of Vapours in Old or Young, and taking away all such diseases which are caused thereby: it resists Hypochondriack melancholy, and cures stubborn Quartans, although of some years continuance, outwardly used and inwardly taken.

V. It is good outwardly in all cold Gouts, and Rheumatisms, in any old ach or pain, in an inveterate Sciatica, and in Nerves and Tendons strained, bruised, or otherwise hurt: and it retrieves a Gangreen (if the mortification be not compleat) in a few hours, and all this is done, only by bathing therewith, morning, noon, and night.

VI. Bathed upon the Part, it cures the bitings of mad Dogs, and other venemous Creatures, is good against Herpes, inveterate Scabs, and a Leprosy; it kills Worms; and the malignity of old Ulcers, Phagæden's, Kings Evil, &c. perfectly cures Cramps, and is of excellent use in Numbness, Lethargies, Palsies, and such like.

VII. *The*

VII. *The Dose and manner of using it.* It is for the most part used outwardly, by bathing the part or parts affected therewith two or three times a day, viz. morning, noon, and night: it pierces immediately, even to the Bone, neither wetting like Water, nor greasing like Oyl. If you take it inwardly, (as it must be given sometimes) you may give it from three or four drops to seven or eight either in a glass of Canary, or in a pretty strong tincture of the Spanish juyce of Liquorice made in Spring water: you may give it either in, or presently after the fit, as also twice a day, viz. morning and night: for Worms, give a dram or two in a Clyster. *Price two shillings six pence an ounce.*

C H A P. XVI.

Potestates Baccarum Juniperi, Powers of Juniper Berries.

I. **T**ake Juniper Berries forty pounds: bruise them well grains and all: affuse upon them a sufficient quantity of Rain Water, and with Sugar, Yest, &c. cause them to ferment: being well fermented, distil therefrom a large quantity of Juniper water, which Cohobate three or four several times. This water rectify and make an inflammable Spirit, by separating from it all its flegm, which Spirit reserve. Take again forty pounds more of Berries, bruising them as before, putrify them in Rain Water for forty days, till they become a kind of Mucilage, mix it with three times its quantity of Water, and distil it in a Copper Vesica tinn'd within, so will the pure Oyl ascend with the Water (in good quantity) and swim at the top thereof, which separate with a funnel. From the Magma Calcin'd extract

a. Salt, which purify and volatilize: mix the reserved Spirit with the Oyl, and Volatile Salt, which perfectly unite by circulation and distillation according to Art; so have you the Powers of Juniper Berries very pure, clear, transparent and Volatile, which keep in a glass close stoppt for use.

II. The Powers of Juniper Berries are of admirable use in the Colick, griping of the Guts, Wind, concretions of Sand or Gravel and slime in the Reins, Ureters, and Bladder: they ease vehement pains, and open all manner of Obstructions in those parts.

III. They powerfully provoke Urine, and are prevalent against all diseases proceeding from Wind in the Stomach or Bowels: they ease an afflicted stomach, comfort all the *Viscera*, and remove all the stoppages of the Liver and Spleen.

IV. I have known the use of these Powers, to cure a Scirrhus of the Liver (one that might outwardly be felt of an eminent largeness) after other medicines had been used in vain: but the sick took them constantly (in all the liquor they drank) every day for a year.

V Many learned Physicians have found by experience that they cure the Scurvy in a cold habit of body: and I know by my own experience, that they cure Asthma's, Coughs, difficulty of Breathing, Wheezing, shortness of Breath, Hoarsness, and other the like cold and moist diseases of the Lungs.

VI. They are Cephalick, Stomack, Pectoral, and Hysterick; they cure cold and moist diseases of the brain, as old Pituitous Headachs, Megrims, the Apoplexy, falling Sickness, Convulsion, Cramp, Lethargy, Carus, Vertigo, &c. by outwardly bathing the Head or parts afflicted therewith, and also taking them inwardly.

VII. They

VII. They are good against fits of the Mother, facilitate both birth and After-birth, and repress vapors from the Womb, cleansing, warming, and strengthening that part, and causing fruitfulness. Inwardly taken and outwardly applyed, they give present ease in after-pains, and wholly remove them.

VIII. They are profitable against Catarrhs, resist Poyson, prevail against the bitings of Serpents, mad Dogs, and other venemous Beasts, and mightily resist the Plague, and all other malign and pestilential diseases. They are also found to be singular good against Gouts and Rheumatisms.

IX. Outwardly being bathed therewith, they help coldness of the Limbs, Cramps, watery swellings in the Hands and Legs, Numbness, Palsies, weakness of the Nerves and Muscles, as also old aches and pains, proceeding from cold, bruises, or strains, &c. though never so vehement.

X. *The Dose and way of using them.* They may be given inwardly from twenty drops to thirty, forty or fifty drops, or more, according to the age, strength, and urgency of the occasion: if they be given to ease pain, always mix them with an equal quantity of our *Gutta vitæ* in Chap. 9. aforegoing. They may be given in Canary or white Wine, or for want of them in Beer or Ale, and that three times a day, viz. morning, noon before dinner, and at night going to bed; and sometimes oftner in extremity; continuing the same for some days or weeks: outwardly bath the parts affected with them morning and night. *Price twelve pence an ounce.*

C H A P. XVII.

Potestates Carui, Powers of Caraways.

I. **Y**OU are to make of these seeds (as before of Juniper Berries) 1. A pure rectified spirit free from all manner of flegm. 2. A subtil and volatile Oyl. 3. A pure and volatile Salt of the Faces (though the principal and largest part of the Volatile Salt always ascends and mixes with the Spirit and Oyl before distilled, as by tryal you may easily prove:) This Spirit, Oyl, and Salt, mix together, and unite them by digestion, circulation, and distillation, as is above taught, so have you the Powers of Caraways.

II. They are powerful in expelling Wind, and commonly give ease in the most intolerable Colick: they open all Obstructions in the Reins and Ureters, dissolve and expel the concretions of Sand or Gravel and Slime, provoke Urine powerfully, and warm and comfort a weak and infeebl'd stomach.

III. They open Obstructions of the Womb, and cause a cleansing of those parts, facilitate both birth and after-birth, ease and take away the after-pains, inwardly given, and outwardly applyed.

IV. They are good against the small Pox, Measles, Plague, and all malign and pestilential Feavers, cause rest, and remove the difficulty of Urine. They are profitable in the Jaundice and Dropsy, and a powerful remedy against the Apoplexy, Falling Sicknes, Convulsions, Cramps, Palsies, Headach, Megrin, Vertigo, Lethargy, sleepiness, and other cold and moist diseases of the head and brain.

V. They open all Obstructions of Liver, Spleen and Lungs, take away Coughs, Asthma's, and shortness
of

Of breath, cleanse and heal Ulcers of the Lungs, cause a good appetite and digestion, and help a stinking breath.

VI. They are profitable against Catarrhs, or any defluxion of Rheum upon any part, and help deafness, being mixt with Oyl of sweet Almonds, and dropt into the Ear every morning. They comfort the Brain and Nerves, and are good against all diseases proceeding from cold and moisture.

VII. They are good against all manner of pains and old aches in any part, being bathed upon the place affected morning and evening; and are profitable in all old stinking Ulcers, Biles, Fractures, contracted and benumbed Members, mixed with Palm Oyl or other Oyntments, and so anointed.

VIII. They sweeten the sharpness of humours, prevail against Pleurisies, pains and stiches of the sides, Fluxes, bloody Fluxes, Lienteries, and other weaknesses of the bowels, and almost insensibly dissolve all coagulations in any part, proceeding from Wind, cold, or any sharp and corrosive humour: and therefore are of excellent use to be given after violent purgings, for that they pleasantly heal the bowels.

IX. *The Dose and way of taking them.* You may give from twenty to forty or sixty drops, or more morning, noon and night in a glass of Ale or Wine: and if any extremity require, they may be given oftner: outwardly bath the parts affected therewith morning and evening. *Price twelve pence an ounce.*

C H A P. XVIII.

Potestates Caryophyllorum, Powers of Cloves.

I. **T**ake Cloves, distil from them an Oyl as we have before taught: from fresh Cloves distil an inflammable Spirit, or Water, which cohobate often upon both Caput mortuum at least six or seven times, which rectify, and perfectly dephlegmate. From the Faces calcin'd extract a Salt, which purify and volatilize: unite these by Circulation and Distillation, so have you the potestates Caryophyllorum most pure, transparent and volatile, which keep in a glass close stopt for use.

II. They are a most excellent Cephalick, Stomatick, Cardiack, Splenetick, and Hysterick; curing the Head-ach, Megrin, Vertigo, Falling-sickness, Apoplexy, Lethargy, Convulsion, Cramp, Numbness, Palsie, and other cold and moist distempers of the Head, Brain and Nerves. They are good against dulness and sleepiness, quicken the senses, sharpen the memory, and prevail mightily against Catarrhs.

III. They give ease in the Colick, and gripings of the Bowels, expel Wind, are helpful in the Dysury, and Strangury, provoke the Terms, and hasten the birth. They abate tumors of the Spleen, and pains of the sides and stomach by outward bathing.

IV. They are a good perfume, attenuate, open, discuss, are Sudorifick, Alexipharmick, and a specific against the French Pox, and all corruption of humours: they remove Obstructions, and are profitable against barrenness from a cold and moist cause, mightily corroborating the Liver and Womb.

V. Given

V. Given in a very large dose, so as the Sick may sweat strongly upon them, they cure Agues, the Dropsy, Jaundice, and Green-sicknes: inwardly taken, they facilitate the cure of all sorts of Ulcers and running sores, and ease all manner of pains of the teeth from a cold cause, being as it were the *Ultimum Refugium*.

VI. They refresh the Senses, strengthen and fortify the Stomach, warm and excite its faculties, are good against loathing, and Vomiting, all pain and sickness at Stomach, provoke appetite and help digestion, so that it is much to be questioned, whether there be a greater Stomatick in the World than these or no.

VII. They resist all manner of Poyson, and the Venom and malignity of the Measles, small Pox, Calenture, spotted Feaver, and the Plague it self: they are powerful against Faintings, Sicknes at Heart, Swoonings, Palpitation, Sadness and Melancholy. They chear the Heart, revive all the Spirits, Natural, Vital and Animal, comfort and fortify all the *Viscera*, and are a very great Cordial.

VIII. *The Dose and way of taking them.* You may give them from twenty to thirty, forty or fifty drops, morning, noon and night, in a glass of Ale or Wine; or they may be exhibited in the same Dose and Vehicle in any Fit of Fainting, Swooning or Sicknes of the heart, or Stomach: Outwardly bath the parts affected with them, morning and evening. *Price two shillings an ounce.*

C H A P. XIX.

Potestates Lavendulæ, Powers of Lavender.

I. **B**ruise the Herb and Flowers well, and adding a sufficient quantity of Rain Water, with Sugar and Yest, cause it to ferment; which done, draw off an inflammable Spirit after many Cohobations, which perfectly deflegmate, and reserve it. Then take the same quantity of fresh Herbs and Flowers, bruise them, and steep them twenty four hours or more, in warm Water, adding to every pound of the bruised matter six pounds of Water; then distil by a Vesica or Alembick, and separate the Oyl from the Water, which reserve also. Lastly, from both the Faces calcin'd, extract a Salt, which purify and volatilize, and mix it with the before reserved Spirit and Oyl, which unite by digestion, Circulation and Distillation: so have you Powers of Lavender.

II. The Virtues of these Powers are many and great, both for inward and outward Diseases; especially in those distempers proceeding from cold and moisture, whether in the Head, Brain, Nerves, Stomach, Liver, Bowels, Mesentery, or Womb: They cure old Aches, and pains, though of long standing.

III. They stop Fluxes of Rheum into the Eyes, and cause a pleasant, quick, and sharp sight: They are good against the Vertigo, or Giddiness in the Head, Drowsiness, Carus, Lethargy, and other sleepy Diseases: They help also Stupidity and Dimness, of sight if proceeding from any accident.

IV. They are Cephalick, Neurotick, Cardiack, and Hysterick; profitable against Catarrhs, Palsies, Cramps,

Cramps, Tremblings, Head-achs, Megrims, and the like: they expel Wind, ease the Colick, provoke Urine and the Terms, and if given in Travail, facilitate both Birth and After-birth.

V. They are good against the yellow Jaundice, comfort the Heart, revive the Spirits, and preserve from the Poyson and contagion of the Pestilence, and all other infectious and malign Feavers; being an Antidote and counter-Poyson, against all Vegetable and Animal Poysons.

VI. They are good against the Apoplexy and Falling-sickness, being taken inwardly, and the Temples bathed therewith: they are also good against pains of the Teeth and Gums, and take away a stinking breath arising therefrom, being taken inwardly, and also held in the mouth.

VII. Outwardly, bathed upon Paralytick or cold benumbed Joynts or Sinews, they warm, heat, and comfort them; so also they help an extream pain of the Head, by Bathing the part pained therewith, and taking the scent strongly up the Nostrils.

VIII. They comfort a cold Stomach, help a weak memory, clear the Eye-sight, and quicken the Senses: they cause both retention and digestion of the food in the Stomach, expel Wind thence, ease pains of the sides and Hypochonders, repress Melancholy, and assuage the tumour of the Spleen by bathing.

IX. They are powerful in repressing and drying up Catarrhs, and taking away the superfluous humidities of the Brain: given daily to Women which have the Whites, they help them; and are profitable against Coughs, Ptisicks, and Asthmas; for they open Obstructions of the Liver, Spleen and Lungs.

X. They are profitable for Children that have the Rickets, being inwardly taken, and outwardly bathed

thed therewith: so used also, they ease pains of the Gout, proceeding from a cold cause, whether in the Arms, Hands, Hips, Knees, or Feet.

XI. They dry up watery humours in Dropsies, ease pains of the Ears, help Rheumatisms, and fits of the Mother, and prevail against Fainting, Swooning, and palpitation of the Heart.

XII. *The Dose and way of using them.* Dose from fifteen to thirty, forty, fifty or sixty drops or more, three times a day, viz. morning, noon and night, in Ale, Wine, or some cordial Julep: In Fainting or Swooning, &c. give it in the Fit: Outwardly, bath well the parts affected therewith twice a day, viz. morning and night. *Price twelve pence an ounce.*

CHAP. XX.

Potestates Limonium, Powers of Limons.

I. **T**ake Limons in a great quantity, let them lye and putrify till they are perfectly rotten, then mix them with three or four times their quantity or weight of Rain Water, and distil in a Copper Vesica tinn'd within, so have you Oyl and Water, which separate, reserving the Oyl: take again the same quantity of fresh Limons, bruise them well, and add to them the former distilled Water, with which, and the addition of Sugar and Yest, cause them to ferment, which being over, draw off the Spirit in an Alembick, which perfectly deflegmate and reserve. From the faces calcin'd extract a Salt, with the former flegm, which purify and volatilize, and mix with the before-reserved Oyl and Spirit, and unite them by a convenient digestion, Circulation and reiterated Distillation, so have you Powers of Limons, which keep in a glass close stop't for use.

II. They

II. They are excellent to expel Wind, and to give ease in the most exquisite dolors of the Colick; they prevail against Fainting and Swooning Fits, weakness of the Spirits, Palpitation, and other passions of the Heart and Præcordia.

III. They are Cephalick and Cordial, and cure all cold and moist Diseases of the Head, Brain, Nerves, Stomach, Liver, Spleen, Bowels, Womb, and Joints, by warming, enlivening, and comforting or strengthening them: they corroborate Nature mightily, revive the Spirits, strengthen a weak Stomach, and make a cheerful and merry Heart, expelling melancholy Vapours from the Blood and Spirits.

IV. They drive forth the Measles and small Pox, resist all sorts of malign and Pestilential Feavers, and wonderfully strengthen and defend the Heart and Brain in all their faculties.

V. They are prevalent against the Head-ach and Megrim, from a cold Cause; as also against the Lethargy, Carus, Apoplexy, Fallingsickness, Palsy, and such other like disaffections of the Nerves: being four or five times bathed upon the place, where the Cramp comes, they infallibly cure it.

VI. They are a good remedy in the Quinsy and Pleurisy, pains and stitches of the sides, as also against the biting of mad Dogs, Vipers, or any other venomous Beast: They have a fragrant scent, and refresh the Spirits, by barely smelling to: They provoke sweat, and expel the malign humours by perspiration through the pores of the skin.

VII. They are admirable against all manner of Pains or Aches, coming of cold, Strains, or Bruises, After-pains of Women in Child-bed, as also in Gouts, Sciatica, Rheumatisms, Scurff, Morpew, Scabs,

Scabs, Leprosy, &c. and that only by bathing the parts affected with them two or three times a day.

VIII. *The Dose and manner of using them.* You may give from twenty to thirty, forty, fifty or sixty drops in a glass of Ale or Wine, in a glass of Rhenish Wine and Sugar, or some cordial Julep: let them be given three times a day, viz. in the morning fasting, an hour before dinner, and last at night going to bed, and so to be continued for a week, fortnight, or longer as you see occasion. Outwardly bath with them morning and evening for ten or twenty days: they make the skin purely soft and smooth. *Price twelve pence an ounce.*

C H A P. XXI.

Potestates Pulegii, Powers of Pennyroyal.

I. **T**ake a great quantity of Green Pennyroyal, bruise it well, and putrify it for some days: then mix with it a great quantity of Rain Water, at least four times the same weight, this distill in a Copper Alembick, so have you Oyl and Water, which separate, reserving the Oyl. Take again the same quantity of Green Pennyroyal, which bruise, and add to it the former distilled Water of Pennyroyal, make them ferment with Sugar and Yest, which being compleated, draw off in an Alembick the inflammable Spirit mixt with flegm; This Spirit deflegmate and reserve also. Lastly, Take the faces of both parts, calcine them, and with the aforesaid flegm, draw forth a Salt, which purify and volatilize; mix it with the before-reserved Oyl and Spirit, and unite them by digestion, circulation and distillation; so have you the pure, transparent, and volatile powers of Pennyroyal, having the same smell and tast with the Herb growing in the Garden.

II. They

II. They consist of most subtil Parts, attenuate, open, cut, dissolve, provoke Urine, break the concretions of Gravel and Slime, and expel them, provoke the Terms, and hasten away the Child, whether living or dead, as also the After-birth; and being bathed upon the belly and share, they miraculously ease and take away after Pains.

III. They are profitable against the Dropsy and Jaundice, and give present ease in the Colick; They are Stomack, Cordial, and Pectoral; open Obstructions of the Lungs, and are very good against Coughs, Colds, Asthma's, Wheesing, shortness of Breath, and difficulty of Breathing.

IV. They are prevalent against an inveterate Head-ach, Megrim, Vertigo, Apoplexy, falling Sickness, Convulsions, Palsy, Cramp, Numbness, Lameness, and weakness of the Nerves, Muscles and Joynts, being inwardly taken, and outwardly bathed therewith.

V. They are very powerful against all manner of Aches, Pains, Strains, or weakness of any part, as also against an inveterate Gout, Sciatica or Rheumatism, proceeding from a cold and moist Cause. They are Antidote against Poyson, the bitings of mad Dogs, Serpents, and other venemous Creatures.

They prevail against the malignity of the Plague, and all other malign and pestilential Feavers: as also against Scorbutick and Pocky Boyls, Botches, Scabs, Scurff, Morpew, Leprosy, nocturnal Pains, Gums, Nodes, Tophs, and other like venemous and poysonous Symptoms, by constantly taking them inwardly every day for two or three months, and outwardly bathing therewith morning and night.

VII. They

VII. They provoke Sweat powerfully, and are a great Alexipharmick in the French Pox, being daily taken in Ale or Wine, after the manner of diet, and have perform'd as much as any Guajacum diet could do, being a kind of Specifick against that Disease, and its malign and Poysonous Symptoms.

VIII. They cure Barrenness in Man or Woman (if there be not a defect of Parts) cleanse, strengthen, and fortify the Womb, and are a Specifick for Diseases in those places.

IX. They are prevalent against Catarrhs, and cold Rheums, help defects of the Eye sight, cure a stinking Breath, ease Pains, and soften hard Tumours of the Liver, Spleen, or Mesentery, by bathing those Regions therewith; for they warm, strengthen, and comfort even all the parts of Mans Body,

X. *The Dose and way of using them.* The Dose is from twenty to forty or sixty drops or more as the Sick is able to bear, three times a day at least; and in case of the French Pox five or six times a day, or as often as the Sick drinks: you may give them in Ale, or Wine and Water mixt, or in some Syrup, or Cordial Julep, and so to continue them for two or three weeks, or two or three months, as you see occasion: Outwardly, bath the parts affected with them twice a day for ten or twenty days. *Price two shillings*

per ounce.

C H A P. XXII.

Potestates Rosmarini, Powers of Rosemary.

I. **T**hey are made in all respects (of the Leaves and flowers) as Powers of Lavender before going ; Uniting the perfectly deslegmated Spirit of Rosemary, with its Volatile Oyl, and Volatile Salt, by digestion, Circulation, and a repeated distillation. Where note that the greatest part of the Volatile Salt arises and mixes with the Spirit and Oyl by distillation, there being not the tenth part there of left in the fæces, which after calcination is drawn forth and Volatilized as Salt of Tartar. Yet that remaining part, after putrefaction of the fæces, might by many Cohobations of the Spirit, be wholly drawn forth, and made to ascend, without any Calcination at all. And this is evident, for that after incineration they will yield no fixt Salt of any kind, without infinite labour.

II. This is a medicine of wonderful Virtues ; nor do I know how to praise it enough ; my perpetual conversation in the use thereof, has given me a large satisfaction as to its Virtues, and that it is above the force of any ordinary remedy.

III. It prevails against all cold and moist diseases of the Head, stomach, Heart, Womb, and other Viscera, as Apoplexies Falling-sickness, Convulsion, Cramp, Palsie, Trembling, Numbness, Weakness of the Nerves and joynts, Head-ach, Megrims, Vertigo Carus, Lethargy, Sleepiness, and Dimness of sight.

IV. It comforts the Head and Brain, refreshes the Senses, cheers the Heart, resists Poyson, and revives all the Spirits Natural, Vital, and Animal. It is good against Palpitation, Fainting and Swooning

Fits, sickness at Heart and stomach, stinking of the Breath, indigestion and want of Appetite, and other defects of those Parts.

V. It opens obstructions of the Liver, Spleen, and Womb, and is an excellent thing against the Jaundice: It is good against the most vehement Catarrh, cold Rheums, Windy Gouts, Rheumatisms, old Aches and pains in any part of the body: and especially those of the Back and loyns.

VI. It is famous against the Griping of the Guts, the Colick, Wind and sharp or acrimonious humors in the stomach and bowels: it provokes Urine and the Terms, facilitates both Birth and after-Birth: It warms, comforts and strengthens all parts weakened by cold and moisture, hard labour, or over-straining, or that have been hurt by any fall, bruise or Wound.

VII. It causeth watchfulness; and takes away dulness & Drowsiness, strengthens the Nerves powerfully; & is said to be a specifick in after pains, the Palsy, Cramp, yellow Jaundice and a stinking Breath. It preserves Health, and keeps back Old Age, making those who take it, look always Young.

VIII. It is good against the bitings of mad-Dogs, Serpents, Vipers, or any other Venomous creature; and is an absolute antidote against the Malignity and Poyson of the Plague, or any malignant and pestilential fever; and is an Excellent preservative in all infectious times and places.

IX. It is prevalent against the Pleurisy; for it attenuates thick humours, digests crudities, opens Obstructions, dissolves congelations, and provokes sweat: and being given in a large Dose, an hour or two before the Fit of an Ague, it has been found often times to cure it.

X. *The dose and manner of Using it.* Dose from
twenty

twenty drops to thirty or forty, two or three times a day *viz.* in the morning fasting, an hour before Dinner, and last at night going to bed in a Glass of Wine; but in extream diseases, where great necessity requires it, it ought to be taken four, five or six times a Day, in all the liquor the sick drinks, twenty, twenty five or thirty drops at a time, as you see the Patient can bear it & to be continued six, eight, ten or twelve weeks as you see occasion. Outwardly bath the parts pained or hurt therewith, morning and evening very well, and continue it for ten, fifteen or twenty days, or more, if need requires. *Price eighteen pence an ounce.*

C H A P. XXIII.

Potestates Succini, Powers of Amber.

I. **M**ake the Amber into most subtil powder, put it into the best rectified Spirit of Wine; digest in Balneo Mariæ for fifteen days: then distil, first with a gentle fire, so have you a piercing Spirit, afterwards a yellow Oyl which mixes with the Spirit, then a red oyl which settles to the bottom, and is to be rectified three or four times. From the Caput Mortuum calcined extract a Salt which purify and volatilize; then joyn the Spirit, rectified, Oyl and Volatile Salt together, which circulate till they are united, and let them be drawn over in one distillation.

II. Or thus. Take Amber in fine powder one pound, affuse upon it Spirit or rather Powers of Turpentine two pound or more, digest in Balneo Mariæ for fifteen days, then distil with a gentle fire, & cohobate, digesting four days: distil again first with a gentle fire, so will the subtil Spirit ascend; then increase the fire, and continue the distillation till no more will arise, so will a red Oyl lye at the bottom. From the faces as before extract the Salt, which purify and volatilize, and joyn with the Spirit

and Oyl; circulate then for a month, and perfectly unite them by drawing them over in one distillation.

III. Or Thus. Take Amber in fine powder a pound: rectified Spirit of Limons a quart: put all into a Glass Retort well luted, to which fit a large Receiver without luting, lest the Vapors should break it: give fire gradatim, and at last a fire of suppression, to drive out the Oyl with the Spirit, which continue till no more Clouds appear in the Receiver: rectify the Oyl, and free the Spirit from all imaginable flegm. From the Caput Mortuum extract a Salt, which purify and volatilize: mix the Spirit, Oyl, and Salt together, circulate, and draw them over in one distillation that they may be perfectly united.

IV. The powers of Amber are most admirable against all cold and moist diseases of the Head, Brain, Nerves, and Womb: They cure head-achs, Megrims, Vertigo's, Lethargies, dulness, drowsiness, sleepiness and all other pituitous distempers of the brain. They are admirable against Convulsions; and cure Cramps so perfectly, as that they never return any more in that place, only by bathing therewith.

V. They are most excellent in Palsies, and all Resolutions of the Nerves: they cure the Sciatica, Rheumatism, and Gout, proceeding from a cold cause, beyond any other medicine: only by bathing the place with the same: and after the same manner they ease and take away all manner of pains & aches proceeding from cold, whether old or new; all which is so miraculously done, as if it was done by Inchantment.

VI. They wonderfully take away After-pains in Women newly delivered, being bathed well upon the belly, and a flannel moistned with the same, presently laid over it. Given to a Woman in Travel they cause speedy delivery, and also facilitate the coming away both of Birth and after-birth.

VI. They

VII. They are admirable against the Fits of the Mother in Women; and being given in a large dose they provoke sweat, and thereby prevail against, and cure Agues. They kill worms in Children, expell Wind, and give ease in the Colick: They heal any ordinary new wound at once dressing, are good against hurts and punctures of the Nerves and Tendons, and retrieve a Gangreen or Mortification newly begun.

VIII. They resist the putrefaction and poyson of the Plague, and all pestilential and malign Feavers; expel and destroy the venom of mad Dogs, Vipers, and other venomous Beasts. They strengthen weak Sinews and Limbs, help the loss of memory, heat, warm, and cleanse a cold and distempered Womb.

IX. The virtues of these powers of Amber are so great, that I can never say enough in their praise, being a Medicine I have daily used almost these twenty years, and scarcely ever without admired success, and great applause, especially in removing of all manner of Pains in any part of the Body coming of cold, which they do in a trifle of time.

X. *The Dose and manner of using them.* For outward uses, bath the places affected therewith very well twice a day: in a week and sometimes less, you will find great relief: inwardly you may give them morning and night from fifteen drops to thirty, forty, or sixty drops, in a Glass of Sack, and continue the same twenty, thirty or forty days or more as you see occasion.

Price twelve pence an ounce.

C H A P. XXIV.

Potestates Terebinthinæ, Powers of Turpentine.

I. **T**O make the Powers of Turpentine. Take Venice Turpentine a pound: Spirit of wine two pounds, mix well and digest in B. M. for fifteen days, then distil in a Glass Alembick in B. M. so will you have a subtil Spirit, mixt with the Volatile Salt and Oyl of Turpentine: afterwards a yellow Oyl: mix and circulate these together, then unite them by drawing them over in one distillation in a Glass Still in B. M.

II. The Virtues of the powers of Turpentine. They are Diuretick and Aperitive, cleansing the Urinary passages of all manner of filth and matter which obstruct them, or stop the making of water, They are excellent to break the stone, and bring forth sand and gravel both in Reins and bladder. In a virulent Gonorrhœa, they are excellent, for they powerfully cleanse and heal.

III. They cure all wounds though in the Nerves, and old Ulcers, though never so rebellious; they help the Gout, and ease old aches and Pains, and comfort and strengthen the Nerves to a wonder, curing most Diseases happening to them: they kill Worms in Children, and take away the crude matter which breeds them.

IV. They soften the Mesentery, strengthen the Liver, and depurate the Mass of Blood; bringing forth pituitous and serous humors, as also tough and viscous Slime. They are also prævalent against Palsies, dead Palsies, Convulsions, Numbness, Cramps, and all other Diseases proceeding from cold and moist Causes.

V. The

V. *The Dose and manner of using it.* Dose is from half a dram to a dram in Syrup of Limons, or any other convenient Syrup, morning and evening, drinking after it a little glass of Sack, or Cinnamon Water, and continuing it as long as need requires. Outwardly bath the parts affected therewith morning and night for some days, or till the Sick finds ease You may apply it to wounds and Ulcers with Lint, or make it into the form of a Balsom, with Oyl of Nutmegs, or some such like thing, and so use it.

Price six pence an ounce.

C H A P. XXV.

Elixir Proprietatis nostrum. *Our Elixir of Property.*

I. **T**ake Powers of Caraways a Gallon: choice English Saffron four ounces: mix and extract therewith a Substantial Tincture: In this tincture (drawn off from the Saffron) put Powder of fat Myrrh four ounces: digest ten days, shaking the glass two or three times every day: being well settled, decant the clear Tincture and reserve it. Then take Tincture of Sena made with Powers of Caraways a quart or more: choice Aloes Succotrina in Powder two pounds: dissolve the Aloes in the Tincture of Sena by degrees, which done, mix it with the former reserved Tincture: digest twenty days in a very gentle heat, shaking the Glass two or three times a day: then being well settled, decant off the clear Tincture into another Glass, and keep it close stoppt for use.

II. This is an excellent Medicine, of hot and thin parts, opens all manner of Obstructions, comforts all the Senses, and parts of the Body, revives the Spirits, cheers the Heart, and makes the Sick pleasant and lightsome.

III. It is a very good thing to be taken every Morning fasting, and Night going to bed, in pestilential times, for it preserves from the Plague, and the malignity of the Contagion.

IV. It is Cephalick, Stomatick, Pectoral, Cardiack, Splenetick, Nephritick, Hysterick and Arthritick; it refreshes the animal and vital Spirits, infinitely strengthens the Stomach and all its faculties, causes a good appetite and digestion, opens Obstructions of the Lungs, Spleen, Womb and Reins, cures Asthma's and Hoarseness, provokes Urine and the Terms plentifully, and expels Wind.

V. It is a singular thing against Gravel and Slime in the Reins and Bladder; casts out viscous and tartarous Humors in such as are afflicted with the Gout, Rheumatism or Scurvy: it eases Pain, expels Poyson, is Antifebritick, and restores such as are in Consumptions. It comforts the Stomach, takes away Loathing, stops Vomiting, takes away Catarrhs, and cures Heeticks.

VI. It is a most admirable thing against a Caco-chymick disposition of Body, and all Diseases proceeding from repletion; it evacuates safely, easily and with great success, all rotten, putrid, and heterogeneous humors lodging in the Body.

VII. It facilitates the healing of old Ulcers and running Sores, cures the Dropsie, Jaundice, and opens obstructions of the Stomach, Liver, Mesentery and Bowels: and by sympathy it is said to help diseases of the Head, as Headach, Megrim, Vertigo and Melancholy, proceeding from obstructions of the Spleen: and is a specifick against most diseases of the Womb, as Obstructions, Suffocation, &c.

VIII. We know by experience, that there is scarcely a more noble and efficacious Stomatick in the whole

whole republick of Medicine. It conſerves Nature to extream old Age, and cures Quartans: it quickens the Senſes, ſtrengthens the Brain and Memory, cures Lethargies, Palfies, Pleuriſies, Jaundice, Catarrhs, Scurvy, Gout, Sciatica, Rickets in Children, &c.

IX. It kills Worms, purifies the Blood, facilitates its circulation, and is a ſpecifick in curing the Kings Evil, Herpes, Scabs and other kinds of breaking out; it is ſubtle and able to penetrate, and therefore not only potently provokes the Terms, but alſo moſt excellently cleanſes ſuch as are in Child-bed.

X. *The Doſe and way of uſing it.* The Doſe is from ten drops to twenty, thirty, forty or more, according to the age and ſtrength, in a Glaſs of Canary, or white Wine and Sugar. Give it in the Morning faſting, half an hour before Dinner, and laſt at Night going to Bed: obſerve the ſtrength of the Patient, and ſo give it accordingly two or three times a day. It gently opens the Body; and in ſome perſons purges. *Price two Skillings an Ounce.*

C H A P. XXVI.

Oleum Sulphuris: Or Oyl of Sulphur.

I. **T**ake a little earthen Cup, which turn upside down, upon which place another Cup filled with melted Sulphur, place theſe in the middle of a great earthen Pan; over theſe hang a glaſs Bell with a long neck like a Matrass, an Inch and an half in Diameter, and about a yard long, having a hole at top to give vent to the Air, which does advance the burning: give Fire to the Sulphur with a red hot Nail or ſome ſuch like thing, and when your Sulphur is ſpent, put new in the ſame place, and continue thus to do, until

until you have the quantity of Oyl which you desire, which keep in a Glass close stopt for use.

II. This Oyl is an Antidote against Plague and all malign and pestilential Feavers, as the Feaver *Causos*, or burning Fever, the Calenture, spotted Fever, and sweating Sickness; it resists all manner of Corruptions and Putrefaction, inwardly taken and outwardly applyed.

III. It opens all obstructions of the Stomach and Lungs, taking away Coughs, Colds, Asthmas, difficulty of Breathing shortness of Breath, Obstructions, inflammations, and other distempers of those parts: It cools admirably, quenches Thirst, strengthens the Stomach, provokes Appetite, and causes a good digestion. It also notably provokes the Terms.

IV. It opens all obstructions of the Liver, Spleen, Bowels, Reins and Bladder; is good against the Green-sickness, Jaundice, Dropsy, Cachexia, Hypochondriack melancholy, Surfeits, dissolves the concretions of Sand or Gravel and Slime, whether in the Kidneys or Bladder, and expels it.

V. It is a specifick against all manner of putrid and burning Feavers, whether continual or intermitting; it abates their Symptoms, as Burning, Heat, Thirst, Restlessness, Watchings, &c.

VI. It is a powerful Diuretick, and the most formidable enemy against the Scurvy. It cures Cachexies, and is a rare thing in Dropsies. It cures the Scurvy in the Teeth, and wonderfully whitens them. It is good against nauseousness, and loathing, and a perfect remedy against Vomiting in all Diseases.

VII. It takes away all corruption in putrid Sores, old Ulcers, Fistula's, &c. being mixt with spirit of Wine in a due proportion, (and that it be not too sharp) and

and cures wounds in any part oftentimes at once dressing: mixt with the Chymical Oyl of Camomil, or Turpentine, it alleviates all pains of the Gout whereever, discusses Nodes, and cures contracted and withered Members.

VIII. Though it takes away the preternatural Moisture in Dropsies; yet it restores the natural and radical Humidity, which is almost spent, for that it fortifies the whole Body against the power of the Dropsy, and Scurvy, and all the symptoms, and disaffections proceeding therefrom.

IX. It powerfully purifies the Blood, and resists all manner of putrefaction and Poyson, cures the biting of mad Dogs, Vipers, and other venomous Creatures: it is a truly noble Medicine, and may be exhibited in all Cordials.

X. It cures any ulceration in the Mouth, Throat, Uvula, or other parts, (only by touching the Ulcer with the Oyl:) for these purposes there is scarcely a better remedy, as well to enlarge the Orifice, remove a Callus, as to correct and prepare it to a good healing, by touching the same with Lint dipt therein, on the end of a Probe.

XI. It makes a costive Body loose, and keeps it soluble: it cures Hecticks, Consumptions, Asthmas, and Ulcers of the Lungs. In the French Pox it is excellent, and may serve instead of a diet. It helps Catarrhs and Rheumatisms, and eases the pains of the Gout, and that by bathing therewith two or three times a day (mixing of it with a fit proportion of Water, or spirit of Wine:) It strengthens the Nerves and Muscles, and is said to cure a confirmed Leprosy.

XII. *The dose and way of using them.* The dose is from five drops to ten, fifteen or twenty drops, or so many
as

as will give the liquor it is taken in, a pleasant and grateful Acidity. It may be taken in Beer, Ale, or Wine, and ought (when taken) to be mixt with all the Liquor the Sick drinks: and being once begun withal, it ought to be continued for some months, to make a change and alteration of the habit. *Price eighteen pence an ounce.*

C H A P. XXVII.

Tabulæ Emeticæ nostræ. *Our Vomiting Lozenges.*

I. **T**ake Emetick Tartar of Mynsicht an ounce: Lozenges of Sugar Pearled four ounces: moisten it with Whites of Eggs one ounce, and thicken it over a convenient fire, then make it into Lozenges of what form you please, weighing half a Dram a piece, otherwise you may make them less, at a venture, and proportion the dose by weight, dry them and keep them for use.

II. This is the best of all Emeticks, operating with much safety and gentleness: it cures all old pains of the Head, and other Diseases affecting it, as Head-ach, Megrin, Vertigo, Frenzy, Madness, Apoplexy, Falling-sickness, Lethargy, Carus, Melancholy, weakness of Memory, &c.

III. It takes away a noise and pain in the ears, difficulty of hearing; pain and wind in the Stomach and sides, the Pleurisy, and other disaffections of those parts. It cleanses a foul Stomach, cures Loathing and Vomiting, causes a good appetite to food, and a strong digestion.

IV. It is a most admired thing against the Scurvy, Dropsy, and Gout; it roots out and perfectly takes away the scorbutick taint, with all its evil symptoms:

It

It evacuates the Water in Dropſies; and takes away by the root, the Tartarous matter breeding the Gout.

V. It is profitable againſt the Cachexia, the Greenſickneſs in Virgins, unnatural Longings, the yellow Jaundice, Diarrhœas, Dyſenteries, and the contagious venom of the Plague or Peſtilence: It opens inveterate Obſtructions of the Liver, Spleen, and Meſentery, and prevails againſt ſcirrhous Tumours in any part of the Body.

VI. It powerfully opens Obſtructions of the Lungs, and is profitable againſt Catarrhs, Coughs, Colds, Aſthma's, Wheeſing, ſhortneſs of breath, difficulty of breathing, Phthiſick, Apoſtems, and Ulcers of the Lungs. It is good againſt putrid and acute Feavers, continual and intermitting Quartans; and kills worms in Children.

VII. It reſiſts the corruption and putrefaction of the humours, cleanſes the Blood, helps its circulation, and prevents it from ſtagnating, gently carrying off all the ill humours by vomiting and Stool: and it is ſo powerful a Specifick in the Gout, Sciatica, and a Rheumatism, that few other things can equal it.

VIII. It provokes the Terms, perfectly removes Crudites from the Stomach, helps Hypochondriack melancholy, and very happily cures Quartans; yea Tertian and Quotidian Agues. It cauſes old rotten Sores, malign Ulcers, and Fiſtula's, ſpeedily to heal, by carrying off the matter which feeds them; and prevails againſt eating Herpes, Tettars, Ring worms, Scabs, Botches, Boyls, Puſhes, and ſuch like leprous Diſtempers.

IX. I have given theſe Vomiting Lozenges to Children who have been in a pining condition, or would not eat their Food; and to ſuch as have been afflicted with Vomiting, as alſo to children that have had

had the Rickets, or been troubled with Worms, and it has miraculously cured them, at once or twice taking.

X. *The Dose and way of taking them.* Dose from fifteen Grains to twenty five, thirty or thirty five Grains; but this latter Dose ought only to be given to strong Men and Women. Infants may take from six to nine Grains: Children of two or three year old, from nine Grains to twelve or fifteen: after the same manner you may proportion the Dose to all persons from four years old and upward to forty, fifty, sixty or seventy years of Age, giving from fifteen Grains to thirty or thirty five according to Age and Strength. It is to be eaten like a Sugar Plum, in the morning fasting, in some warm Broth, Posset drink, or Mace Ale, which as it works ought to be drunk plentifully: when it has done working give the Sick, a glass of burnt Claret, or mild Ale. And as need requires, you may repeat the Dose, two, three or four times, letting always two, three or four days be between each Dose.
Price two Shillings six pence an ounce.

C H A P. XXVIII.

Sal Mirabile nost. *Our wonderful Salt.*

I. **T** *Ake pure Sal Mirabile Glauberi a pound: Salt of Wormwood, Volatile Sal Armoniack, of each half a pound: Volatile Salts of Tartar, of Harts-horn, and of Mans-skul, of each a quarter of a pound: Grind each into a subtil powder a-part, then mix them well together, and keep them in a Glass close stopt for use.*

II. It is a Salt of very volatile parts, digesting and cleansing; it opens all manner of Obstructions in any
part

part of the Body, and is a great reſolver of all Slimy, Vifcous, and Tartarous matter, from whence proceed the Sciatica, Rheumatifm, Gout, Scirrhus of the Liver and Spleen, Agues. &c.

III. It diſſolves the Stone in the Reins and Bladder to a flime, and brings it away, as alſo Gravel, Purulent matter, and whatſoever obſtricts the paſſages of the Urine in the Reins, Ureters and Bladder, provoking Urine, and cauſing it to be brought away with ſpeed and eaſe.

IV. It cures the Jaundice, by reſtoring the loſt Animal Salt, prevails in the Dropſy, Cachexy and all watery Diſeaſes, is profitable in the Colick, Wind in the Stomach or Bowels; opens obſtructions of the Lungs, and is good againſt Aſthmas, Coughs, Colds, Wheeſings, difficulty of breathing, ſhortneſs of breath, &c.

V. It rectifies and corroborates the tone of the Stomach, reſtores loſt Appetite, helps digeſtion, and eaſes intolerable pains in that Bowel. Being taken for eighty or ninety days together or more, it has cured ſcirrhous Tumours, and Cancers in ſeveral parts of the body; as alſo the Kings-Evil, running Sores, old ſordid and rebellious Ulcers, Fiſtula's, Gangreens, Mortifications, &c.

VI. It is of miraculous uſe againſt the Worms and Rickets in Children, and other weakneſs happening to them: It prevails againſt Convulſions, Palſies, fits of the Mother, obſtructions of the Womb, ſtoppage of the Terms, and other Hyſterick diſtempers.

VII. It is a moſt admirable thing againſt Cataracts, whiſt in their beginning, it helps dimneſs of ſight, cloudineſs, yea blindneſs it ſelf, by cleaning the Brain, removing obſtructions in the Optick Nerves.

and

and strengthen the Animal Spirits which fill them.

VIII. I have seen great things done by it, being used many days together, in the cure of the French Pox & Scurvy; for it is an antidote against all venereal Venom, takes away the Pocky and scorbutick Taint, sweetens the Blood, and causes the *Flammula Cordis* to burn clear: for this Salt resolves, cleanses, and purifies to a wonder; and is a powerful Specifick in the Gout, so that few things can equal it.

IX. It is of good use in Quinsies, Pleurisies, Peripneumonias, Erysipelas, and other like distempers proceeding from preternatural heat, and obstruction; for taking away the obstruction, it dissolves the Coagulation and Stagnation, and causes the blood and humours to circulate freely.

X. It is an excellent thing against all Agues and Feavers, whether continent, continual, or intermitting; prevails in especial against Tertians, and Quartans, all burning, malign, and pestilential Feavers, destroying the preternatural heat, preventing or expelling the putrefaction, and resisting the very poyson of the Disease.

XI. It is a good Sudorifick, expels and drives from the heart, is good against Poyson and Plague, as also the biting of mad Dogs, Vipers, or other venomous Creatures: It comforts and refreshes the Head, Brain, Nerves and Animal Spirits, and prevails against all diseases, affecting them, as Headachs, Megrims, Vertigo's, Epilepsies, Apoplexies, Palsies, Convulsions, Cramps, Lethargies, Carus, dullness, Sleepiness, Frenzys, Madness, Hypochondriack Melancholy, Scabs, Itch, Ulcers, Botches, Boils, Morpew, Scurf, Leprosy, &c. all which proceed from a depravation and vitious property of the Blood and Animal Spirits.

XII. *The Dose and manner of taking it.* It may be given morning and evening from ten Grains to fifteen or twenty according to age and strength, in a glass of Beer, Ale, or Wine, or in a spoonful of Syrup: and it ought to be taken for two or three months together, the Patient purging once every ten or twelve days with our Family Pills. If the Sick cannot take so large a dose, you may give four or five Grains at a time, and let it be taken four, five, six or seven times a day, as aforesaid, or oftner. For the Gout, give it also inwardly, and apply it, outwardly, dissolved in Wine: dip a linnen cloth in it, and apply it to the place, which moisten with a sponge as often as it dries for twelve hours. *Price six shillings an ounce.*

C H A P. XXIX.

Sal Vitriolatum, Or Salt Vitriolated.

I. **T**ake the purest Salt of Tartar as much as you please, or if you please, instead thereof Oleum Tartari per deliquium: affuse thereon the best Oyl of Vitriol a sufficient quantity, viz. so much till you see the Ebullition ceases, which you may know by stirring the matter: then gently evaporate away the humidity to dryness, continually stirring of it in the evaporation with a wooden Spatula, but especially when it begins to grow dry, so will you have a most pure white Salt, which keep for use.

II. After the same manner may you vitriolate lapis prunellæ: or you may prepare it by the affusion of Spirit of Niter in like manner; so will the Salt be Nitrated, white and pure as the former, and having the same properties and virtues.

Z z

III. These

III. These two medicaments are both of a nature, and serve both to the same ends and intentions; they cause digestion, strengthen the stomach, and cause a good appetite, dissolve Tartar in the Body, and open all obstructions whatsoever, curing Feavers, Green-sickness, stoppage of the Terms, Quartans, &c.

IV. They are indeed famous openers of obstructions; they provoke Urine, open all the Urinary passages, dissolve the stone, and all Tartarous coagulations in the body, and expel them being dissolved.

V. They are prevalent against Pleurifies, and all stoppages of the stomach, Lungs, Bowels, Reins and Bladder, by which they help Coughs, Asthmas, Consumptions, Hecticks, Cachexia's, Dropsies, &c.

VI. They are wonderful against the infection of the Plague, being scarcely inferiour to any other thing now used; and prevail against all burning, malign, and pestilential Feavers, as Measles, small Pox, Spotted-Feaver, Calenture, burning Tertian, &c. potently resisting the venom and poyson of the Disease.

VII. They are excellent to cut and digest thick and tartarous Humours, resist putrefaction, allay inflammations and heat, and cure putrid Feavers and the sweating sickness. They are an antidote against melancholy, prevail against Agues, Catarrhs, Rheumatisms, Gouts, Scurvy, and all impurities of the Blood.

VIII. They are said to be specifick in the Colick, especially if prepared with Spirit of Niter, giving present ease, and removing all the obstructions of the Bowels. In a Lotion or Gargarism they stop
Gangreens,

Gangreens, (being dissolved in Wine, mixt with Spirit of Wine) take away rotten flesh, warts, and heal Sores, Cankers, and Ulcers of the Mouth, Throat and other parts.

IX. They are very powerful aperitives and depilatives, working all their effects with a world of sweetness and pleasure. They prevail against most affections of the Head, Brain, Lungs, Stomach, Liver, Spleen, Pancreas, Mesentery, Reins, Bladder, and Womb, curing all diseases in those parts proceeding from the slimy, tenacious and viscous Humours.

X. They provoke stools, purify the whole mass of Blood, renovating the whole man, remove the malignity of humours, cure the Kings-Evil, Rickets in Children, kill Worms, and are a Specifick against the Dropsy, Jaundice, Dysenteries, Iliack, &c. Colick Passion, Palsies, Apoplexies, Gouts, Leprosies, Megrims, Vertigo's, Epilepsies, Carus, Lethargy, fits of the Mother, &c. by taking away Flatulencies, Watery, and Tartarous Viscosities, &c.

XI. *The Dose and way of giving them.* Dose from six Grains to fifteen or twenty in Broth, Ale, Wine, Syrup, or other convenient Vehicle. You may give of either of them, two, three or four times a day, or oftner, as you see occasion. *Price eighteen pence an ounce.*

C H A P. XXX.

Calomelanos, *The white Purge.*

I. **T**AKE Venetian Corrosive sublimate, powder it, to which put an equal weight of purged Quick-silver; incorporate them by beating or grinding in a Marble Mortar, so long till the Quick silver cannot be seen, to which put so much spirit of Vinegar, as may make the Powder wet or only moist; put it into a small long neck'd Matrass, but of that bigness, that there may be at least five parts empty when the matter is in; let it not be luted, that you may see to the bottom, which place above the middle in Sand; put first a gentle fire under it, then encrease it by degrees six hours, that the Mercury may be driven from the bottom into the middle concavity of the Matrass; which being separated from that at top and bottom, reduce it into small Powder, sublime it the second time, and the third time, repeating the operation to the sixth time (but abating the quantity of crude Mercury) till it has lost its acrimony, is freed from all impurity, and becomes white as Snow.

II. This is a specifick and great secret against the French Pox, Gonorrhoea, or running of the Reins, and all other venereal symptoms, as Boils, Botches, Scabs, Nodes, Tophi, Gums, Scurf, Morpew, Pocky Leprosy, Ulcers, Sores, Cankers, nocturnal pains, and curing them if wisely used, to a wonder.

III. It is a thing of singular use in curing the Scurvy, Dropsy, Gout, Rheumatism, Kings-Evil Megrin, Vertigo, and other diseases of the Brain. It is profitable against the Cachexia, yellow Jaundice, Itch, Tettars, Ring-worms, ill-natured and rebellious
Ulcers,

Ulcers, eating Herpes, &c. Against those eating Herpes, Ulcers, &c. you may (as well as giving it inwardly) use it outwardly, by strewing the impalpable powder thereof, upon the place affected, or mix it with Pomatum, Basilicon, &c. and so apply it.

IV. It kills Worms both in the Stomach and Bowels, and is so safe that it may be given to Children: it prevails against rebellious Agues, inveterate Catarrhs (given with other purges) and is a wonderful thing against the stubborn and rebellious Kings-Evil, for it melts, (as it were) the viscous and Tartarous matter, and carries it off by stool.

V. It is a famous remedy in all other deplorable Diseases, proceeding from putrefaction of humours; for it purifies the Blood, sweetens the Lymphatick juyce, corrects the vices of the *Viscera*, and rectifies the very marrow in the Bones, thereby freeing the whole body from all filth and uncleanness.

VI. It is a most singular Cathartick, and may merit the name of *Panacea*, purging gently by stool, not at all by Vomit. It brings forth all poysonous and vitious Humours, cures Ulcers in the Reins and Bladder, and dissolves all scirrhus and Scorbutick Tumours whether inward or outward.

VII. *The Dose, and way of using it.* To Children you may give from seven Grains to ten or twelve with half as much powder of Scammony. To strong persons from twenty Grains to twenty five or half a dram, sometimes to two scruples. Or with sixteen Grains thereof, you may mix two Grains of *Mercurius vita*, which being ground together for about two hours, may then be mixt with twelve Grains of Scammony; and so given every other day in the morning fasting.

VIII. It is best mixt with some purging extract or powder, and so made up into Pills, or a Bolus, with the pap of an Apple, stew'd Prune, Honey, &c. and so taken at night going to bed, or after midnight, which is better: but if the sick has an easy body to work upon, then it will be best given early in the morning.

IX. But I often give it alone in very subtil powder over night in Conserve of Roses, or a little Syrup, and then the next morning exhibit a proper purge against the distemper; and so repeat the same in like manner again every third or fourth day, for ten or twelve times, or so long as I see occasion.

X. If it be taken to flux withal, you may give it from a scruple to a dram, augmenting the dose for four days together, with care and observation, as in that method is required. Where note, that it ought to be levigated into a most impalpable powder before it is given. *Price two shillings an ounce.*

C H A P. XXXI.

Præcipitatus albus: *White Precipitate.*

I. **T**ake Quick-silver purified, or driven from Sea Salt in a Retort, one pound: Aqua fortis, (made of Vitriol, two parts, Niter one part) two pounds: make a dissolution according to Art: in a long neck'd matrass, and be careful to avoid the fumes; in the mean season prepare a Brine of Sea Salt and fair Water, which filtrate, and put your solution of Mercury into it, so will a white Powder immediately precipitate, which is to be washed from all its Acrimony in warm Spring Water filtrated, then dry it: and keep it for use. *Where note that if you use*

use spirit of Niter instead of the A. F. it will be the easier dulcified: also that the Matrass be of such a magnitude, as it may not be half full, lest the ebullition should be so great, as to make the matter run over.

II. This is a real and true *Arcanum* against the French Pox, and virulent Gonorrhœa, and all the dependencies and evil Symptoms; for it destroys the poyson and malignity of the Disease, and universally carries away what is malignant and hurtful, evacuating all manner of filth and corruption in the whole Body.

III. It purges something more than the *Calomelanos*, but if given several times alone, *viz.* without a purging Medicine along with it, it will flux, as well as that; by either method it is of great force in curing the French Pox, Gonorrhœa, and all venereal Ulcers, as Botches, Boyls, Scabs and Pocky pustules.

IV. It cures Tettars, Ringworms, Cancers Sores, Itch, Leprosy, by taking it inwardly in a purging Medicament; and mixing it with Oyl or Hogs Lard, and anointing the parts affected therewith; but beware that you anoint not any part of the Stomach or Belly, lest you kill the Patient therewith.

V. And indeed for outward application in the cure of Malignant, and Corrosive Ulcers; Scabs, Itch, and all corruptions of the Skin, no outward remedy surpassees it: mix two scruples or a dram of it with an ounce of Pomatum, and anoint therewith; for eating Herpes, malignant Ulcers, mix as much with the like quantity of Basilicon, and apply it emplaster-wise.

VI. It is a wonderful thing against a stubborn and inveterate Kings Evil, Gout, Dropsy, Leprosy;

against rebellious Agues, vehement Catarrhs, &c. It kills Worms in the Stomach, and those which are generated in the Bowels and *Intestinum Rectum*. It is a good Medicine, and ought to be esteemed as a Jewel.

VII. If the *Quick-silver* be dissolved in Spirit of Niter, and evaporated, and this three times repeated and evaporated in a glass Matrass with a short neck, and a gradual fire, and this sweetned by often washing in fair warm Water, and then reverberated in a Crucible, till it becomes as red as Coral, you have *Arcanum Corallinum*, good for all the purposes aforesaid, but much more powerful, and the most absolute Specifick against the French Pox.

VIII. The Dose and way of taking it. The *White precipitate* is given from four grains to ten; the *Arcanum Corallinum* from two grains to seven or eight, mixt with some proper purge, let it be given in the morning and once every fifth or sixth day, with observation and care. Price of the *White Precipitate* four shillings an ounce. Price of the *Arcan. Corallinum* six shillings an ounce.

C H A P. XXXII.

Pulvis Regalis noster: Our Royal Powder.

I. **T**ake *Scammony*, *Cambogia*, of each two ounces: *Resin of Jalap*, *Tartar Emetick* of *Mynsicht*, of each an ounce: *Elaterium*, *Cloves*, *Nutmegs*, *Zedoary*, *Cinnamon*, of each two drams and a half, make each into a fine Powder a part, then mix them together, and keep them in a Glass close stoppt.

II. It is a most admirable thing for a *Panchymagogue* or *Universal purger*; so that very few things exceed

exceed it: it purges and carries off by Stool, but sometimes by Vomit also, if the Stomach be very foul, all humours whether thick or thin, and may be given to both Sexes, whether Young or Old, little Infants excepted, because of its substantial working.

III. I commend the use hereof in the Gout, Sciatica, Dropsy, and Jaundice, beyond most other Purges; for in these Diseases I have had large experience thereof: I once cured a Woman of a most extream and inveterate Sciatica with four Doses of it, given every third or fourth day, taking also in the Interval of Purging our Cordial Pills in *Chap. 38.* following, and bathing the part twice a day with the powers of Turpentine.

IV. It purifies the Blood, strengthens the Stomach, provokes Appetite, and expels Flegm, Choler and Melancholy. It evacuates Flegm, and other gross Humours from the Head, Joynts, and other remote parts; and has been found of excellent use in old Headachs, Megrims, Apoplexy, Falling-sickness, Vertigo, Melancholy, Carus, Frenzy, Madness, Lethargy, and other such like cold and moist Diseases of the Head and Brain.

V. I have given the Medicine with good success in Quartan Agues, (seldom missing of the cure) black Jaundice, Hypochondriack Melancholy, Kings Evil, and other the like old, stubborn, and rebellious Diseases.

VI. It is a most admirable remedy against the French Pox; especially if to every ounce thereof you add a dram and half, or two drams of White præcipitate, mentioned in the last Chapter; and so it performs that cure, without Fluxing to a wonder. Otherwise, the prescript it self is scarcely inferiour to any other purge.

VII. It

VII. It specifically cures the Scurvy, Dropsy, Gout, Jaundice, Cachexy, and Green-sickness: it opens all Obstructions of the Stomach, Liver, Spleen, Mesentery, and Womb: and most diseases of the Womb, proceeding from cold, moisture, Wind; Obstructions, and variety of filthy Humours, I have cured therewith to a wonder; for it admirably cleanses and diverts the intentions of that part.

VIII. It cleanses the Stomach and Bowels from cold, moist, viscous, slimy, and corrupt Humours, and all manner of Filth: it prevails in the Dropsy, evacuates Water powerfully; and cures any surfeit, if exhibited upon the first coming thereof.

IX. It kills Worms, whether in Old or Young; is an excellent thing against all Agues and Feavers, by causing the evacuation of the Febricitick Matter. It cleanses, strengthens, and corroborates all parts of the Head and Stomach, carries off Catarrhs, fortifies and recruits the Memory, acuates the Senses, and prevails against Tartarous Diseases, Melancholy, and the Kings Evil; for which last Disease, I esteem it one of the best Purges.

X. It provokes the Terms powerfully, more especially in cold and moist constitutions, and is good against the Whites in Women, and other foulness of the Womb, by purging away the filthy matter.

XI. Being often taken, they cause old Ulcers, running Sores, inveterate and malignant Fistula's, Kings Evil Sores, Apostems, &c. speedily to heal, by purging away the cause which feeds them. Indeed this our Royal Powder performs desperate cures, almost to a Miracle.

XII. *The Dose and way of taking it.* It may be given from ten grains to twenty, and to twenty five or thirty

ty grains in strong Bodies : mix it with the Pap of an Apple, or a stew'd Prune, or with a little Conserve of Roses, or a little Syrup, and so let the Patient take it early in the morning, having ready some Broth or Posset drink to take liberally after it ; and so to keep his Chamber for that day. Let it be repeated every third, fourth or fifth day, as the Sick is able to bear it, and to be continued four, six, eight or ten times, as you shall see occasion. *Price five shillings an ounce.*

C H A P. XXXIII.

Pulvis Antifebriciticus noster, *Our Powder against Feavers.*

I. **T**ake Antimony five parts : Common Salt four parts : Salt of Tartar one part ; make all into a most subtil powder : put it by Spoonfuls into a Crucible red fire hot, and when it flows like water, take it off, so will you have at bottom, an Antifebricitick Regulus which, being washed from the Salts, vomits not at all. Take of this Regulus twelve ounces : of the pulvis Bezoardicus in the following Chapter, three ounces : the Regulus being in fine Powder, mix them, and keep it close in a Box with Screws for use, or in a Glass stopt close with a Cork.

II. This is a famous medicament against Feavers of all sorts, having scarcely any equal. I have given it more than two hundred times with unparallel'd success : it takes off the Feaver beyond expectation at three or four times taking, and sometimes with a single Dose, as if it was done by Incantation : nor can I tell that ever I gave it in a Feaver in vain. I communicated it to Dr. Henry Green, late of Enfield, who by Letter gave me this following account of it.

III. Octob.

III. Octob. 23. Anno. 1683. *Worthy Sir, I have used your Antifebritick Powder (which you gave me notice of) in Feavers, with great benefit. It is so far from Vomiting, that I have administred it to Children, when they have vomited, and it has turned downwards. Stools that have been inodorous before, have been strangely offensive after it. It has taken off Feavers sometimes at a Dose. I have given it at least fifty times, and its effects have been always innocent, for the most part effectual, sometimes stupendious. I doubt not but it may be extended to other Diseases with equal Advantage.* Thus far *Dr. Green*

IV. It is something Sudorifick, if given for that purpose; but for the most part works downwards first, and afterwards provokes Sweat: it is prevalent against all putrid Feavers, Measles, small Pox, Calenture, spotted Feaver, sweating Sicknes, the Plague, and all other venomous Diseases.

V. It is a great aperitive and Deoppilative, opening all Obstructions of the Stomach, Liver, Spleen, Mesentery, Reins, Womb, and other parts. It is good against stoppage of the Terms, Green-sickness, Dropsy, Melancholy, Scurvy, Jaundice, and Gout.

VI. Mixt with *Venice* or *Chio Turpentine*, it prevails against old Gonorrhoeas, the Whites, and other distempers of the Reins, Womb, and seminal Vessels.

VII. It cleanses without violence, resists putrefaction in the highest degree, fortifies the Stomach, corrects crudities, strengthens the universal Man, purifies the whole Mass of Blood, scours and clears the Bowels of filth and viscous Humours, by gently Purging, and brings health in an unknown way.

VIII. It resists all disaffections of the Heart, Brain, Liver, and other parts of the humane Body, which serve for the conservation of life; for it has

a substance and quality agreeable with ours, it is very profitable in Hectick-Feavers, by taking away the præternatural Heat, and restoring the Radical moisture, and defends the very essence of Human Nature against the Assaults of all its Enemies.

IX. *The Dose and manner of using it.* You may give it to Children from fifteen Grains to a scruple or more: to elder persons from a Scruple to two scruples: and strong persons may take it to a Dram. Or twenty, or twenty five Grains may be given morning and evening for eight, twelve or twenty days together as you see occasion. You may give it made up into a Bolus with a little Gelly of Harts-horn, Conserve of Quinces, pulp of Prunes or a little Honey. Or you may cause it to be exhibited in a spoonful of any convenient Syrup. *Price eighteen pence an ounce.*

C H A P. XXXIV.

Pulvis Bezoarticus noster: *Our Cordial Powder.*

I. **T**ake Bezoar Minerale, Bezoar Oriental, Bezoar Animal, of each one ounce: Cochinele, Saffron, Volatil Sal Armoniack, of each two Drams: Camphir, Volatile Salt of Harts-horn, of each one Dram: all being in subtil Powder, mix them, and keep them close in a Box with a screw.

II. This is an excellent Antidote against the Plague, all Pestilential and malign Feavers, as the Measles, small Pox, Purples, or spotted Feaver, the Calenture, and all other burning and continual Feavers whatsoever. It cures Agues of all sorts, whether Quotidian, Tertian, or Quartan, single or double, being given before the Fit, so long as that the Sick may

may fall into a sweat before the cold Fit comes on.

III. It sweats powerfully, drives out the small Pox and Measles after a secure and admirable manner: it resists Putrefaction and Poyson, refreshes all the Senses, comforts the Heart, revives the Spirits, and strengthens the Body and all its parts, after a strange and wonderful manner, being a true friend to Nature, and acting according to her Laws.

IV. It gives ease in all manner of Pains, whether in the Head, Stomach, Liver, Spleen, Mesentery, Reins, Womb, or Joynts, or indeed in any part of the body. It gives present ease in the Pleurisie, Colick, griping of the Guts, Wind, pains and stiches in the sides and Stomach, for which diseases there is scarcely a better remedy.

VI. It cures the Rickets in Children, strengthens a weak back, takes away fits of the Mother, helps fainting and swooning Fits, preserves Women with Child from miscarriage, comforts the the Head, Brain, and Nerves, strengthens the stomach, causes a good complexion, and digestion, resists Vomiting, and relieves languishing nature almost to a Miracle.

VI. It is a great and good Medicine against all manner of Coughs, Colds, Asthma's, Wheesings, shortness of breath, difficulty of breathing, obstructions of the Lungs, defluxions of Rheum, Ptisicks, and such like Diseases. It dries a cold, moist, Rheumatick constitution of Body; yet after a strange and wonderful manner, cures pining away, Hecticks and Consumptions whether in Old or Young.

VII. It is a most especial remedy against the falling-sickness, Apoplexy, Convulsions, Cramps, Lethargies, Palsies, Vertigoes, and other diseases of the Head;

It kills Worms in Children, bringing them away. I always give it to Children in the Gripes with good success. It Cures the Gout: Melancholy, and the Spleen, and restores the natural Functions, curing those diseases radically, so that they never return again: It is also a specifick against the Leprosy, Scabs, and all sorts of breakings out.

VIII. It is very good against a Leucophlegmatia, and the first beginnings of Dropsies, in which diseases it is wonderful; for it powerfully discharges the Spleen and other parts of the lower belly, by Urine and Perspiration.

IX. *The Dose and manner of taking it.* You may give it principally morning and night; but if there be much weakness, and great necessity require it, you may give it three, four, five or six times a day (but then the dose ought to be much the less:). The common dose given once a day, viz. at night going to bed is from twelve Grains to twenty four or thirty, according to the strength and ability of the patient: if you give it twice a day, the dose is from six Grains to twenty: if oftner, as three, four, five or six times a day, from five to ten Grains. Give it in some proper Syrup; and let the Sick drink a dram of our *Aqua Bezoartica* after it: and if the occasion requires it, let it be exhibited ten, twenty or thirty days together, making the Sick sometimes sweat well upon it. *Price ten shillings an ounce.*

C H A P. XXXV.

Hercules noster, seu Panacea nostra: *Our All-heal.*

I. **T**ake of *Aurum Vitæ* four ounces, choice Bezoar mine-
rale twelve ounces: Hungarian or Spanish
Quick-silver pure and without filth, sixteen ounces: mix
 them together, and grind them constantly for three days,
 till they are perfectly mixed, and a very subtle powder of
 a most deep black colour; then digest in a gentle *Balneo*
Maris for forty days, and keep it in a Glass, close stopt for
 use.

II. This is a wonderful Medicine, for it expels
 all putrid humors from the Body, whether they be
 generated of Blood, Choler, Flegm or Melancho-
 ly, purifying the whole mass of Blood, and expel-
 ling the feculencies thereof through not only the
 Bowels, but also through the pores of the Skin.

III. It strengthens the Brain, acuates the Senses,
 and comforts the Nerves; being an admirable thing
 against the Headach, Megrin, Vertigo, Apoplexy,
 falling Sickness, and other disaffections of the Head
 and Brain. It is found also by experience to be a
 specifick in the Colick.

IV. Mixt with Turpentine and so taken, it is di-
 uretick, provokes Urine, cures the Disury and
 Strangury, and miraculously gives ease in the Stone
 and Gravel, whether in Reins or Bladder, being ta-
 ken for some days; so that its effects are thought
 by some to be Magical.

V. Outwardly applyed in an Oyntment, it is
 found to be an *Arcanum* against the Gout, easing all
 the Pains thereof to a wonder, as also all other
 Pains

Pains in the Nerves, Tendons or Muſcles: it diſſolves all hard and ſcirrhous Tumors, cures inveterate Ulcers, Cancers, ſcrophulous Tumors, and ſuch like: but it ought alſo to be taken inwardly at the ſame time, as hereafter directed.

VI. It prevails againſt Fiſtulas, running Sores, Tettars, Ringworms, Scabs, Itch, rebellious Herpes, Scurff, Morpew, as alſo all manner of Botches, Boyls, Puſtles, Ulcers, Gumms, Tophs, Nodes, and other malign ſymptoms proceeding from the French Pox.

VII. It cures all diſaffections of the Womb, as fits of the Mother, barrenneſs, coldneſs, and ſlipperineſs of the Womb, Ulcers thereof, &c. cleanses it of evil Humors, and ſtrengthens it.

VIII. It quickens the Senſes, fortifies the animal Functions, comforts the Spirits, cheers the Heart, generates ſubtle and pure Blood, ſtrengthens all the principal Members, recreates the Mind, and makes a chearful countenance.

IX. This Medicine purges not of it ſelf, but ſtrengthens and reſtores by its baſamick ſweetneſs; cleaning the whole maſs of Blood, from all mucous and ſerous Humors; it cures the Leproſie, and is a ſpecial *Arcanum* againſt that Diſeaſe. It is not only a perfect cure for the Gout and Sciatica, but it takes away Nodes, diſcuſſes Tumors, and abſolutely eaſes all pains of the Joynts whatſoever.

X. It repairs the whole Man, reſtores and purifies the radical Moiſture: cures all ſorts of Fevers, continual and intermitting, whether Quotidian, Tertian or Quartan; and expels all foreign matter, either through the pores of the Skin or by the Emunctories.

XI. It is a specifick not only against Cancers and Scrophula's, the which it heals in a short time; but it is also a perfect Cure against the French-Pox, with all its attendants, as Gonorrhoeas, Whites, Bubo's, nocturnal Pains, and the like, helping the stagnation of the Humors in any part of the Body.

XII. The Infusion of it in Wine, drunk a pint a day for some time, strengthens and fortifies the Stomach, takes away Loathing and Vomiting, causes a good Appetite, kills Worms in Children, and expels them; heals all internal Wounds, whether in the Bowels or elsewhere, dissolves coagulated Blood, cures the Phthisick, Ulcers of the Reins and Bladder, and other the like internal Maladies.

XIII. *The Dose and manner of taking it.* If you design to sweat with it, you may give from a Scruple to half a Drachm in a little of our Treacle, letting the Patient be in his naked Bed, and well covered; drinking now and then after it a little Glass of Sack. If the intention be otherwise, and it be given against the *French-Pox, Gout, Leprosie, Cancer, Kings-evil, Herpes*, or such other malign and inveterate Diseases, you may give it at Night going to Bed, from a Scruple to two Scruples or more, made into a Bolus with a Conserve of Roses; or you may mix it with the pap of an Apple, Syrup, or the like, and so give it, (but not in any thin body, because it will be apt to settle, and so hang about the Mouth and Throat :) This done, give the next Morning some proper purging Pill, Powder or Potion to carry it off.

XIV. You may give it every other, or every third or fourth day, as you see the Body will bear it, it will truly do Wonders, if you prosecute the intention

tention of cure rightly : and you may give it for eight, or ten, or twelve times one after another, as you see need requires. If you give it often, (without a Purge following it the next Morning) it will flux : which of the Methods is best to follow, you must consult your own Experience and Reason ; considering also the strength of the Patient, and inveteracy of the Disease.

XV. During the Cure of the Disease the Patient ought to have a Diet-Drink to take, which you may make thus. *Take of this our Hercules or Panacea five ounces : Canary two quarts ; shake them together, and let them stand in a warm Infusion for a week, shaking the Glass twice a day : then being well settled, pour off the clear Wine (which will have neither colour, taste nor smell, more than it had when it went on) and keep it for a Diet. Dose a quarter of a pint in the Morning ; and so much at Night again, going to Bed, on those days the Sick does not purge. This much exceeds a Guajacum and Sarfa Diet. This Diet Drink you must renew, by putting the like quantity of fresh Canary upon the same Powder ; and you may repeat the Infusion upon the same Fæces seven or eight times, which will be sufficient for any ordinary Cure ; and so long it will hold good, and make the Infusion strong enough.*

XVI. As to the outward use of it, you may strew it alone upon Sores, Ulcers, Scabs, &c. and then apply it mixt with some Oyntment or Balsome, as *Basilicon, Nutritum, Pomatum, our friendly Balsome, &c.* But if it be to any place pained, which is not raw, only mix it with the Oyntment or Balsome, and so lay it upon the place. *Price eight Shillings*

an ounce.

C H A P. XXXVI.

Antidotus, seu Theriaca nostra. *Our Antidote or Treacle.*

I. **T**ake powder of Vipers ten ounces: Opium extracted, strained and inspissated with juice of Limons, eight Ounces: Bezoar mineral, Saffron, Cochinele, Contrayerva, Virginian Snakeroot, Cinnamon, Cloves, Mace, Nutmegs, Zedoary, Cubebs, Camphir, of each four ounces: Myrrh, Aloes, Ginger, Pepper, Cardamoms, Spikenard, Bay berries, Winters Bark, Elecampane, Castoreum, volatil Salt of Amber, oyl of Nutmegs by expression, of each two ounces: Chymical oyl of Aniseeds, Caraways, Cloves, Lavender, Pennyroyal, Rosemary, Sage and Wormwood, of each one ounce: Virgin Honey, melliginous extract of Juniper-Berries, of each eleven pounds and a half: these things being in subtle Powder, which ought to be powdered, mix them over a gentle Fire, and make an Electuary according to Art.

II. This Antidote or Treacle has all the Virtues of Mithridate or Venice Treacle; and much more powerful to all the same intentions and purposes.

III. It notably restores in Consumptions, expels Wind, strengthens the Stomach, and causes a good digestion; comforting all the principal parts, as Head, Brain, Stomach, Heart, Liver, Spleen and Womb, cheering all the Spirits, Natural, Vital and Animal.

IV. It causeth Rest, eases all Pains, stops all Fluxions of Rheum, and is a great Cordial, restoring the Strength and Spirits in fainting and swooning Fits: It prevails against all sorts of Feavers, and diseases proceeding from corruption, putrefaction and viscos tatarous Humors.

V. It

V. It helps Asthmas and difficulty of Breathing, eases an old Cough, helps Inflammations and Obstructions of the Lungs, Pleurisie and pain of the Stomach. It stays Vomiting, and is a special Antidote against Poyson, Pox, Plague, biting of venomous Beasts, and all malign Fevers.

VI. It is a specifick in the Colick, griping of the Guts, all sorts of Fluxes of the Bowels and other Diseases of those parts. It stops the overflowing of the Terms, and all other Fluxes of Blood in any part; as also inveterate Catarrhs, and distillations of Rheum, spitting Blood, &c.

VII. It is powerful against all epidemick Diseases, as the Pestilence, spotted Fever, Measles, small Pox, Calenture and sweating Sickness, expelling the Poyson and Malignity of the Disease through the pores of the Skin by sweating.

VIII. It fortifies the Heart, revives the Spirits, comforts the Stomack, and strengthens the whole Body, helping digestion, and causing a good Appetite: being also an admirable thing against Pains and Stitches of the Breast and Sides, as also against hypochondriack Melancholy.

IX. It is a most excellent thing against Pains proceeding from the Stone, Gravel or slimy, viscous and tartarous humors in the Reins, Ureters or Bladder, giving rest and quietness, with much safety and pleasure. It is a specifick against the Gout and Sciatica, inwardly taken and outwardly applyed; there are but few Medicines better than it for those purposes.

X. It is a good thing against the Head ach, Megrin, Palsie, Madnes, Frenzy, defluxions upon the Eyes, Teeth or other parts; it is profitable against Rheumatisms, Surfeits, scorbutick Pains, Dropsies, Jaundice,

Jaundice, fits of the Mother, and other Diseases proceeding from Wind and Vapours; as also against all sorts of excruciating Torments in any part of the Body.

XI. *The Dose and way of giving of it.* To Infants you may give it to half a scruple, to Children from a year to two or three years old, from half a scruple to a scruple or more: from two years old to five or six, you may give from a scruple to two scruples. To elder persons according to their Age, from two scruples to four scruples or two drachms. It may either be swallowed alone, or dissolved in a Glass of Sack, or other proper Vehicle. It is best given at Night going to Bed, and if possible sweating upon it. You may take it two, four, six, eight or ten times, or more, as you see occasion. *Price twelve pence an ounce.*

C H A P. XXXVII.

Theriaca Londinensis nostra: Our new London Treacle.

I. **T**ake Opium extracted with Spirit of Wine, and inspissated, six ounces: dissolve it again in Spirit of Vinegar or juyce of Limons, and inspissate: then dissolve again in Oyl of Tartar per deliquium eight ounces, and inspissate to the consistency of Honey. 2. Take Spanish juyce of Liquorice, juyce of Alkermes, solid extracts of Elecampane, Gentian, Bay Berries and Zedoary, of each two ounces; dissolve them in so much Spirit of Wine, as may make them of the thickness of Honey. 3. Take white Poppy Seed, Contrayerva, Virginian Snakeroot, Indian Spikenard, Myrrh, Ginger, Pearl, Coral, Cochinele, red Coral, Bezoarstone, volatile sal Armoniack, of each two ounces.

ounces : Musk and Ambergrise, of each one drachm, make all into a fine impalpable Powder, according to Art, which mix with Bezoar Minerale, Bezoar Solare, & Bezoar Animale, of each two ounces, 4. Take Chymical Oyls of Anise, Sassafrass, Caraways, Juniper, Rhodium, Cloves, Rosemary, Amber, Cinnamon and Roses, of each an ounce; in which dissolve Camphir two ounces; with which mix Oyl of Nutmegs by expression, Balm of Gilead, Essence of Vipers, of each two ounces. 5. Take clarified Honey twelve pounds, put to it the dissolved Opium, &c. then the dissolved extracts, mixing them well; after sprinkle in the Powders, stirring them exquisitely over a gentle heat, which may melt the Honey: Lastly, adding the Chymical oyl, let them be also perfectly mixed, and compleat the Electuary according to Art.

II. This is the great Secret with which we cured several hundreds of the Plague in the last great Visitation in London, Anno 1665. and to the best of our remembrance, not one person dyed thereof, to whom we gave it. Several persons are now living, who had Plague Spots came out upon them (while others lay dead at the same time in the same room) and by taking hereof were saved from the Jaws of Death, and cured.

III. One *William Tayler* (who can yet testifie it) expected to be the next after his Mother and two Sisters, who lay dead by him of the Plague; he being full of Spots, like to them upon the dead persons; yet upon the taking hereof recovered, but bore the Spots upon him, for near six Months after, to the view of several people; which as a famous testimony of the worth of this Medicament, we could not but communicate to the World.

IV. It revives the Spirits, chears the Heart, recreates the natural Powers, strengthens all the fun-

ctions and faculties of the Body, exhilarates the Mind, stops the most vehement Catarrhs, is excellent in a Rheumatism, and mightily restores in Consumptions.

V. It is an Antidote against all manner of Poyson and infectious Diseases; destroys the very essence of Venoms, gives rest and ease, and takes away all manner of Pain in any part of the Body, whether fixed or wandring.

VI. It is a most admirable thing against all manner of hot, burning and malign Feavers, of what kind soever, as Measles, Small Pox, spotted Fever, Calenture and sweating Sickness, being carefully given, and the Patient made to sweat well upon it.

VII. It is prevalent against Coughs, Colds, Asthma's, Phthisicks, Obstructions of the Lungs, inward Bruises, spitting or pissing Blood or Matter, for which it is to be commended as a Jewel: and truly in all manner of Fluxes of Blood, whether by the Mouth, Nostrils, Reins, Bladder, Womb, or Hæmorrhoids, it is a most admirable thing.

VIII. It is found by long experience to be admirable in Headachs, Megrims, Vertigo's, Falling-sickness, Convulsions, Palsies, Gouts, Sciatica's, Pleurisies, Colick, Obstructions of the Spleen, and Wind, whether in the Stomach, Bowels or Womb.

IX. It stops the overflowing of the Terms and Whites in Women; and is a certain remedy in all violent Lienteries, Dysenteries or bloody Fluxes and Diarrhœas or Loosnesses, which have been of long continuance, and are hard to cure, or have resisted almost all other Remedies.

X. It is singular good against the bitings of mad-Dogs, Serpents, Vipers, or any other venomous Beast; as also against the stinging of Scorpions, Hornets,

nets, biting of Spiders, or the Poyson of any other Animal, whether, Beast, Fish, Fowl or Insect.

XI. *The Dose and manner of taking it.* You may give for Prevention a scruple or twenty grains in a Glafs of Sack, at night going to Bed; or if you best like it, in the Morning fasting: But for cure, you are to consider the Age and Strength of the Patient, and so accordingly you may give it from ten grains or half a scruple to half a drachm or two scruples, or more as you see occasion: it is a safe and sure remedy; and by reason of the volatile parts that are in it, it penetrates into, and defends every part.

XII. Let it be given dissolved in Sack, or some other convenient Vehicle, as *Aqua Bezoardica*, or some such like, and let the Sick be in their naked Bed, and well covered, so as that they may sweat well upon it: let the sweat continue four, five, six, or more hours, as the Sick can bear it, and let it be repeated again for at least four days; letting the Patient when out of the great Sweat, yet lye in a kind of breathing Sweat; and now and then moisten their Mouth with the juyce of an Orange, or some pleasant Cordial Julep, made grateful with Oyl of Sulphur. *Price four Shillings an Ounce.*

C H A P. XXXVIII.

Laudanum Volatile noſt. *Our Cordial Pills, or Volatile Laudanum.*

I. **T**ake of the beſt Thebean Opium thirty ounces, make it into an extract of a middle conſiſtence with ſpirit of Wine, and mix therewith ten ounces of the beſt Venice Treacle; being well mixed add thereto volatile Salts of Mans-ſkul, of Harts-horn, of Sal Armoniack, of Amber, of Tartar, and of Vipers, of each one ounce: mix them well in a Wooden Mortar, and keep them ſome days: then add extracts of Virginian Snake Root, of Contrayerva, of Zedoary, of Saffron, of Caſtoreum, of Mithridate, of each two ounces and a half: Chymical Oyls of Cinnamon, of Cloves, of Nutmegs, of Roſemary, of Saffraſas, of Wormwood, of Limons and of ſweet marjoram, of each half an ounce: being all well mixed together, keep them ſo, till the fermentation is compleatly abſolved, which done, bring it into the juſt conſiſtency for a Maſs of Pills, by adding Bezoar Oriental, Bezoar Mineral, Camphir, Cochinele, of each a like quantity in ſubtil Powder: then keep it cloſe in Wooden or Silver Boxes with ſcrews for uſe.

II. This is the greateſt and moſt excellent preparation of all the Opiates yet invented, being made of a fermented Opium, filled with volatile Salts, whereas in all other preparations of this kind, the Opium has been crude or ill prepared, and only corrected with a nauſeous Oyl, and a fixt Salt, or no Salt at all.

III. It is Cephalick, Neurotick, Stomatick, Cardiack, Splenetick, Nephritick, Hyſterick and Arthritick, Antifebritick, Alexipharmick, Analeptick, Sudorifick

Sudorifick and Anodyne: it is a great Medicine, and almoſt of infinite virtues, vaſtly tranſcending all other medicaments of like kind.

IV. It is an abſolute cure for ſpitting of Blood, beyond all other things yet practiſed, and ſtops all other diſtillations and Fluxes, whether of Blood, Rheum, Terms, Whites, Gonorrhœa, &c. ſtrengthening and fortifying the parts, and diverting the matter another way.

V. It is good in all ſorts of Feavers, Watchings, reſtleſneſs, Melancholy, Head-achs, Megrims, Frenzy, Madneſs, Epilepſie, Convulſions, fits of the Mother, Pleuriſie, Vomiting, Colick, weakneſs of the Bowels, Diarrhœa or Loofneſs, Hepatick Flux, and other diſtempers of thoſe parts.

VI. It is excellent againſt the Gout in Arms, Heads, Hips, Knees, and Feet, alleviating the pain, aſſwaging the tumour, and cauſing the humour to vaniſh by perſpiration through the Pores; It alters the juyces of the Body, deſtroying the Acidity of the Neurotick moiſture, which conſtitutes the Tartarous matter thruſt out into the joynts.

VII. It gives admirable eaſe in all Nephritick pains proceeding from the Stone, Sand, Gravel, Slime, or viſcous matter lodged in the Reins, Ureters and Bladder; in which afflictions, it is truly the moſt ſpeedy, prevalent, and efficacious Remedy.

VIII. It provokes ſweat powerfully, and expels all manner of poyſon and malignity from the Heart, whether it proceeds from the biting or ſtinging of any venomous or poyſonous Creature, or from the contagion of any Epidemick, or malignant diſeaſe, as the Meaſles, ſmall Pox, Calenture, ſweating Sickneſs, ſpotted Feaver, or other malign and contagious diſeaſe, yea the Plague it ſelf.

IX. It

IX. It mightily strengthens the Heart, revives all the Spirits, Natural, Vital, and Animal, and fortifies the whole intire Man to a Wonder: it is extrem good against Melancholy, melts frigid, clammy and viscos humors, and thereby opens manifold obstructions.

X. It helps vehement Coughs, Colds, and distillations upon the Lungs, or other parts, making the thin humour thick, and so causing it to be the more easily expectorated; it prevails also, not only against all Fluxes of the Head, as Catarrhs &c. and other Fluxes of the Bowels, as the Diarrhœa or Loosness, bloody Flux, and Lienteria, or Flux of chyle and matter; but also against all fluxes of the Womb; and fluxes of humors to the Joynts, or in old and running Sores, where the Ulcer is not only rebellious, by reason of the malign and evil quality thereof, but the flux of matter flowing to it is so impetuous, to resist all other remedies.

XI. It is a singular good thing against the *Scurvy*, whether in a hot or cold constitution, it takes away the Scorbutick pains, and other symptoms, eradicating the disease, root and branch, to a Miracle.

XII. It is eminent against Palpitation of the Heart, Swooning, trembling, and other passions of the precordia, Sickness at stomach, want of Appetite, and indigestion, loathing of food, heart-burnings, vomiting, and other distempers incident to those parts.

XIII. It is a most excellent thing in all burnings, continent, or continual Feavers, for it interferes immediately with their original cause, and by opening the Pores of the skin, and causing sweat, it forces a transpiration of the Febrick matter, and so takes away the preternatural heat.

XIV. It

XIV. It is a very good thing againſt the Leproſy, Scabs, Scurff, Morpew, Tettars, Ring-worms, Boyls, Botches, and other breakings out; by looſening the too ſtrict jointing of the blood, from a combination of Acid or fixt Salts with ſulphurous particles; whereby, cauſing a fermentation, it ſeparates the Recrements and Impurities thereof through the pores of the Skin, and ſo ſweetens it.

XV. It prevails againſt diſaffecti- ons of the Spleen, and Hypochonders, troubles and diſcontents of mind, it opens obſtructions in the Liver and Meſentery, and is good againſt a ſcirrhus of thoſe parts; or any other hard and painful tumour.

XVI. It is a Specifick almoſt in all diſeaſes which may befall the Head, Brain, Nerves, Womb, or Joynts; for that it miraculoſly ſtrengthens thoſe parts, and recreates the Animal ſpirits. It is very profitable for Women that lye in, and moſt ſtupendiouſly takes away the After-pains.

XVII. It provokes Urine remarkably, takes away the heat and ſharpneſs thereof, eaſes the pains of the back and Reins, cures the Diſuria, Iſcuria, and ſtrangury; and is profitable for ſuch as are troubled with weakneſs, indiſpoſition of Body, Laſſitudes, or languish under heſticks, Conſumptions, Poyſon, &c.

XVIII. It is the moſt potent remedy in the world againſt Catarrhs, ſtopping all ſorts of Diſtillations whatſoever, ſalt, ſharp, thin, &c, afflicting the Throat, Lungs, and Aſpera Arteria.

XIX. It deſtroys the very eſſence of Venoms, gives reſt and eaſe, cauſes pleaſant ſleep, and takes away all manner of Pains, even the moſt acute, in any part of the body; for which purpoſe it is a kind of Divine help, & *quasi ultimum Aſylum*.

XX. *The Dose and way of taking it.* You may give it at any time of night or day when there is occasion for it: but if be constantly taken, or given in a disease, which requires the long taking of it, you ought always to give it last at night going to bed. You may make it up into a small Pill, and so take it in the pap of an Apple, stew'd prune, or with a little Syrup, or Ale, Beer or Wine, as best pleases the Patient, drinking after a glass of drink or Wine, and so lying down, to be covered warm, and to repose upon it.

XXI. As to the Dose of it, you may begin with one Grain (according to age and strength,) and so increase the dose half a Grain every fourth or fifth day, till such time (if the necessity and vehemency of the Disease require it) as it is augmented to a scruple or more, for by this gradual increase, the dose is given without danger: and having come to the highest Dose, you may continue it as many days or weeks as you see need for; and then gradually again to diminish half a grain at a time, till you come to the lowest Dose again.

XXII. In extremity of Pain you must begin with a larger Dose, *viz.* with two or three grains, or more, and so encrease it as before directed. To Children of two, three, four or six Months old and upwards you may begin with a quarter of a grain, and so encrease a quarter of a grain by degrees till it comes to a grain or more. In chronick Diseases the Patient is sometimes forced to take it for several Months together. *Price sixteen Shillings an ounce.*

C H A P. XXXIX.

Extractum Pectorale nostrum. *Our Pectoral Extract.*

I. **T**ake Extract of Liquorice, Lozenges of Sugar pearled, of each one pound: Extract of Hyssop, white Sugar Candy, of each half a pound: Lac Sulphuris, Crystals of Nitre (made by dissolution in Spirit of Nitre) of each a quarter of a pound: sugared Crystal Mineral, Ginger in subtle Powder, of each two ounces: Oyl of Cloves, an ounce: Oyl of sweet Fennel Seeds, half an ounce: with glair of Eggs, a sufficient quantity, make a Mass, which form into little Pills, Rouls or Lozenges, according to Art, and so dry them.

II. This is a Medicine very pleasant, and therefore to be held in the Mouth to dissolve by degrees, that it may leisurely distil down the Throat: It is a specifick in Coughs, Colds, Asthmas, Wheezings, shortness of Breath, difficulty of Breathing, &c. and gives wonderful ease to admiration.

III. It dissolves congealed Flegm in the Thorax, takes away the tickling in the *Aspera Arteria*, heals rawness and foreness of the Lungs, Breast and Stomach, and is an admirable thing in all obstructions or stoppages of the Breast and Lungs, causing easie expectoration.

IV. It is good not only in vehement Coughs and Asthmas, but also in Phtisicks, Ulcers of the Lungs, spitting of Blood, inflammations of the Lungs, &c. cooling and taking away the preternatural Heat, stopping any flux of Blood or humors falling to, or pro-

proceeding from those parts, and withal healing the Ulcers thereof.

V. It may be called the balsam of the Lungs, for it heals wonderfully, eases pain, quenches thirst, and allays the heat of Feavers: it strengthens the stomach, helps digestion, and causes a good appetite to food.

VI. It is a very good thing to expel wind, whether in the Stomach or Bowels; and although it is good against Feavers, and takes away preternatural heats; yet it strengthens and confirms the native heat, cheers the heart, and revives the spirits.

VII. It absorbs the acid humour, is prevalent against the stagnation of the blood and humours, dissolving all Coagulums, and sweetning the whole Sanguineous Mass, thereby destroying the very root of all Scorbutick, Hysterick, Convulsive, Arthritick, and tartarous diseases.

VIII. It is good against Sand and Gravel, Slime, or viscous humors in the Reins and Bladder, takes away the heat of Urine, and difficulty of making water; and is found to be of good use in a prevailing and virulent Gonorrhœa.

IX. It is a very good thing against pains and stitches in the side, soreness of the Throat and Jaws, pissing of Blood, vehement Catarrhs, distillations of Rheum, and such other like fluxes of humors, falling upon any of the noble parts.

X. *The Dose and manner of taking it.* It may be taken freely, and be held in the mouth all the day long (and all the night too) if need requires, and therefore the dose is uncertain, and needless to be limited: the way of taking it, is to let it dissolve in the mouth, and so to swallow it by degrees as it dissolves. But this is to be noted, for the benefit
of

of the Sick, that during the whole time of taking of this extract, the Sick ought to take every night going to bed one of the Cordial Pills in the aforegoing Chapter, as is there directed; and if the Cough, Asthma, Wheesing, Ptisick, spitting of Blood, Catarrh, &c. be very vehement, to take every morning fasting twenty or thirty or more of our Cordial drops. (in Chap. 9. aforegoing) in a glass of Canary, Beer, Ale, &c. as the Sick best likes, so will you not fail of your expectation, but the success of the cure will be according to your desire. *Price six pence an ounce.*

C H A P. XL.

Balsamum Sulphuris nostrum. *Our Balsam of Sulphur.*

I. **T**ake Lac Sulphuris five ounces: Chymical oyl of Aniseeds thirty ounces: mix them, and in a glass body boyl them so long, till the oyl has perfectly extracted the Tincture of the Sulphur of a glorious red colour, which will be about such time as the oyl shall be boyled half away: then decant the Balsam and keep it for use. Here note, 1. That some make this Balsam only by Digesting and Circulating, but done that way, it will be very long and tedious. 2. That it may be made in like manner with Chymical oyls of Fennel Seed, Carrawayes, Juniper Berries, Limons, Oranges, Rosemary, Cloves, &c. or with any of these mixt together in equal parts; as take oyls of Aniseeds, of Carraways, and of Fennel Seeds, of each ten ounces, Flowers of Sulphur five ounces; &c.

II. This is a most perfect Balsam, and a great pectoral, heating, drying, and preserving from Putrefaction. In it are all the virtues of the natural Balsam, and the greatest conservative power, that can be found in any Medicine.

III. It is a great dryer, excellent good in moist Ulcers, whether inward or outward: it is excellent in Coughs, Colds, Asthmas, pains of the sides and Spleen, spitting of Blood, Ulcers of the Lungs, Palsies, Convulsions, Gouts, Struma's, or Kings-Evil, Consumptions, &c. being inwardly taken, and outwardly applyed.

IV. It strengthens, resists Malignity and Poyson, is good against the Plague, all sorts of Pestilential and malign Feavers, as Measles, small Pox, Calenture, spotted Feaver, &c: it stops all fluxes of the Belly, Womb, or Yard, with great security, and dries up moist Ulcers.

V. It is a transcendent medicine in all diseases of the Lungs; it not only heals their Ulcers, and stops Coughs, but smooths the roughness of the Wind-pipe, helps Asthmas, shortness of breath, difficulty of Breathing, Wheezings, Hoarsness, and all other disaffections of the middle Ventricle.

VI. It is a powerful thing for the removing of Catarrhs, prevails against a Pleurisy, the Colick, Epidemick diseases, Apostems, and putrefaction, not only of the Breast and Lungs, but in any part of the whole body: It is also an admirable thing to anoint with for Ruptures in Children.

VII. This medicine is dedicated to the Lungs, and is as a fire to dry up their superfluous humidities: It corrects the sharpness of acid juyces, abates their acrimony, and sweetens the Blood, and nervous juyce.

VIII. It

VIII. It is good against the Cachexia, cold and moist diseases, Green-sicknels, and the Scurvy: it is a precious Balsam, cures old aches and pains, the Sciatica and Gout, as also all fores and Ulcers both old and new to admiration. It is a wonderful remedy, and an universal deobstrueter, opening all obstructions of the Stomach, Lungs, Liver, and Spleen; but all its virtues are not here to be enumerated. Esteem it as a Jewel.

IX. *The Dose and way of taking it.* You may give from three drops to six, eight, ten or twelve or more, according to the age and strength of the Patient: It may be taken twice a day *viz.* in the morning fasting, and at night going to bed: but if the disease be vehement, you may give it also an hour before dinner. You may give it in any specifick vehicle; but it will be best to swallow it down in a spoonful of Syrup, more or less, and then to drink a glass of Wine after it, if the Patient so pleases.

C H A P. XLI.

Balsamum Amicum nostrum. *Our Friendly Balsam.*

I. **T**ake blood red oyl of Hypericon twenty four ounces : Venice or Chio Turpentine twelve ounces : Rosin, Wax, of each nine ounces : oyl of Nutmegs by Expression, Balsome of Peru, of each six ounces : liquid Styrax strained four ounces : Gum Elemi depurated, fat Myrrh in Powder, of each three ounces : Frankincense, Resinous Scammony, Gum Guaiaci, Balsamum Capiivi, liquid Amber, of each two ounces : Mastick in fine Powder, Camphir, Chymical oyls of Rosmary and Lavender, of each one ounce and an half : first heat the oyl of Hypericon, then dissolve therein the Mastick, Myrrh, Scammony, Gum Guaiaci, Frankincense, Wax and Rosin (in little bits) after put in the Turpentine, Balsam of Peru and Capiivi, liquid Styrax, and liquid Amber : being dissolved and mixed, put in the Gum Elemi and next the oyl of Nutmegs : all being well incorporated, take the mass from the fire ; the heat being somewhat abated, put in the oyls of Rosemary and Lavender, in which let the Camphir be first dissolved, and so stir continually, till all the Ingredients be perfectly mixed, and the Balsam grows cold.

I'. This is inferior to no vulnerary Balsam whatsoever, but performs whatever any of them all can pretend to : it cures wounds although of the Nerves and Tendons, and that almost in twenty four hours ; it preserves it safe and intire from filth, putrefaction

faction and dead or proud Flesh till it is perfectly healed, which is commonly at once or twice dressing.

III. It eases all external Pains in any part of the body, as of the Gout (from a cold cause) Sciatica and such like, but much more effectually, if you mix well therewith Venice Soap, a quarter part upon every application: and it will be yet more effectual if Opium an eight part, dissolved in Spirit of Wine, be added to the same.

IV. Being well bathed upon Sinews shrunk up, it relaxes and comforts them, and causes them to be extended to their due length: laid upon the Stomach for an inward bruise, it is of admirable and singular use, and will be so much the more effectual, if the quantity of a Filbert, be swallowed in the Morning fasting, and fasting an hour and half after it; and as much last at Night going to Bed.

V. Anointed upon Ruptures, it consolidates them and is good against old Aches, Strains, withered Limbs, Cramps, Convulsions, Tremblings, Numbness, &c. It eases Pains and Stitches in the Sides, and applyed softens the hardness of the Liver and Spleen. Inwardly taken, it has been found by good experience to give present ease in the Stone and Gravel, whether in the Reins or Bladder.

VI. It asswages pains in Sores, fills hollow Ulcers with Flesh, and heals them speedily, producing a Cicatrize, it safely heals Wounds without danger of festring. And if upon occasion you mix with it a tenth part of pure fine prepared Verdigrise; or one drachm thereof to one ounce of this Balsam, it will more excellently heal all manner of old Ulcers, hollow cavernous Sores and Fistulas whatsoever, taking away the callous, proud or dead

Flesh, the *Synovia* or joynt Water, or any other impediment which may hinder the healing. The Verdigrise for this purpose is only a tincture drawn with Spirit of Vinegar, and then the Spirit evaporated to dryness.

VII. It is an excellent thing for the cure of all manner of outward Swellings, Burns, Scalds, Cuts or Wounds, Tettars, Ringworms, Morpew, Scurf, Pimples, Scabs, Leprosie, Pusles or any other Breaking whatsoever.

VIII. It strengthens weak Limbs, helps Lameness, cures the biting of mad Dogs, Palsies and Gouts in Hands, Arms, Legs or Feet, or any other outward Pain in any part of the Body though never so great.

IX. It is a truly noble Balsam, doing of it self all the intentions of healing: It comforts the Nerves and Joynts, and speedily cures old Ulcers and other Sores, proceeding from the Kings' Evil. It ripens Swellings, breaks Apostems, cures broken Bones, breeds Flesh, and speedily skins any Sore, not suffering Corruption, Putrefaction or deadness therein.

X. Several who have been lame of their Limbs many years, by the constant use of this Balsam for some time, have come to the perfect use of them again. And others who have had old running Sores and Ulcers upon them for almost twenty years, have been cured by the use hereof, almost to a Miracle. Children also troubled with the Rickets or Kings-Evil for a long time, have been cured herewith, beyond expectation.

XI. In a Word, This our friendly Balsam supplies the place of all other wound-Balsams, as also is effectual in all cases where other Oyls, Oyntments, Cerecloaths and Plaisters are used, and may very well serve instead of them all, it being a thing indeed of such necessary use on all occasions, that no Family ought to be without it.

XII. *The way of using it.* Anoint the place affected well, before some warm Embers, or a gentle Fire, and immediately lay over it a thick linnen Cloth, or piece of sheeps Leather spread with the same, and straitway wrap up the part in warm wollen Cloaths; and repeat this Morning and Night, till such time as the Patient is well.

XIII. In inveterate Scabs, malign Ulcers, Kings Evil-Sores, &c. you ought to take twice or thrice a Week our Family Pills, and to dress the part twice a day as aforesaid. For the Pills by purging, divert the Humors which flow to those parts, and take away that matter which nourishes the Disease, thereby perfecting the Cure with much ease and speed, and for a small charge. *Price one Shilling an ounce.*

C H A P. XLII.

Balsamum Arthriticum nostrum. *Our Gout Balsome.*

I. **T**ake oyl Olive four pounds : Venice Turpentine, Venice or Castile Soap, of each two pounds : Rosin, Bees-Wax, of each a pound and half : Saccharum Saturni, Camphir of each a pound : Thebian Opium (made into an extract of the thickness of new Honey) three pounds : mix all together over a gentle Fire, and keep them stirring till they are melted ; then boyl them to the consistency of a thick Balsam, or soft Emplaster. Note the Camphir must first be dissolved in Spirit.

II. This Balsome eases all pains of the Gout and Sciatica, and Pains in any part of the Body : prevails against tartarous and hard Tumors, cools inflammations, abates Pains and Swellings in the Testicles, and alleviates the sharpness of Humors in an Erysipilas.

III. It is good against dolors and disaffections of the Sides, Liver and Spleen, stiches, swellings of the Spleen, pain and weakness of the Back. It is a rare thing also to assuage the pain of the Piles or Hemorrhoides, and to give ease to all manner of Pains, whereever it can be applyed, and this to admiration.

IV. You may successfully apply it to the Forehead and Temples, to ease the Headach, and cause rest, it prevails against suffocations of the Mother, for which thing alone you ought to esteem it a Jewel.

V. And as it is wonderful in easing and curing all pains of the Gout, Sciatica or Scurvy, or proceeding from what cause soever in any part ; so it is a secret

cret also in dissolving of arthritick Nodes, Tophs and Gums, the which are as it were miraculously dissipated by it. It may be applyed to the Shins, Knees, Arms, Back, between the Shoulders, &c. And for these purposes, I never found any thing more effectual.

VI. A certain person forty years of Age had a great and hard Tumor upon his Spleen, reaching almost cross, toward the rightside, with other evil symptoms of those parts; I applyed this Plaster or Balsam thereto, and in a few hours it gave him great ease; and by degrees (in length of time) softned it, dissipated or dissolved it, and perfectly took it away, but he also all along took inwardly our *Volatile Laudanum*, a little Pill every Night.

VII. It is good against Bruises and Ruptures in Children; it wonderfully strengthens debilitated Members, asswages Inflammations, discusses, mollifies, digests, consolidates, stops distillations and affluxes of Rheum or other ill humors upon any part, and defends from accidents.

VIII. It eases the griping of the Guts, and is a present Remedy in the Colick, Diarrhoea and other Distempers of the Bowels, heat, pain and inflammation of the Reins, &c. if the parts affected be first anointed therewith, and then applyed to the same, spread upon Leather.

IX. It prevails against Cancers in Womens Breasts, easing the Pain, mollifying and discussing them; I have found a great success in it for this purpose; and I question whether there be a much better thing for this intention in the World: apply it to the Cancer upon Leather, and renew it every day. *Price one Shilling an ounce.*

C H A P. XLIII.

Pilulæ Panchymagogæ nostræ. *Our Pills for the POX.*

I. **T**ake Colocynthis, resinous Scammony, of each one ounce: Elaterium, Turbith Mineral, of each half an ounce: Oyl of Caraways three drachms: volatile Sal Armoniack, or rather Salt of Harts-Horn a drachm and an half: with a sufficient quantity of Syrupus de Spina Cervina or Syrup of the wild Cucumber, make a mass of Pills.

II. This is one of the most powerful Catharticks in the World; and an universal purger of all Humors, from all parts of the Body; being good against tartarous Diseases, hypochondriack Melancholy, alienation of the Mind, Madness, obstructions of the Liver, Spleen, Mesentery and Womb.

III. In the Cachexy, Dropsie, Jaundice, Leprosie, Scabs, Tettars, Ring-Worms, an inveterate and rebellious Herpes, and such like stubborn Diseases, it is a most stupendious Remedy.

IV. It cures the Scurvy, though radicated in the Bones, purges and cleanses the whole mass of Blood, removes all the Symptoms, in a very short time, and renders the Patient stronger and sounder, than in any of the former parts of his life.

V. They purge both thick and thin Humors, evacuate tartarous Matter, and eradicate even the Seeds of Diseases; and mightily facilitate the cure of all sorts of old Sores, running Fistula's, inveterate and stubborn Ulcers, as the Wolf, Cancer, Phagedena, Herpes exedens, *Noli me Tangere*, and other like contumacious Distempers.

VI. They

VI. They open all obstructions of the Womb, and cleanse it from all its Impurities, as Wind, Water, Whites, clotted Blood, &c. from whence arises a very great number of Diseases.

VII. These Pills are a good Purge for malign, putrid and poysonous Humors, and are very prevalent against Diseases of the Head, Stomach, Bowels and Joynts. They are singular against the Headach, Vertigo, Megrin, Lethargy, Frenzy, Madness, against Venereal Pains and Breakings out, Botches Boils, Scabs, Surfeits, and the like.

VIII. They are powerful against Sciatica's, Gouts of all sorts in Hands, Arms, Knees and Feet, Rheumatisms, and other like wandring Pains, of how long soever continuance, and wheresoever scituated in the Body.

IX. They are a most excellent Remedy against the Kings-evil, taking it away root and branch: they cure it though ulcerated; taking off the Caco-chymia, and carrying away the venene Matter to a miracle: But be sure to proportionate the Dose to the age of the person.

X. They are a most powerful Remedy, and a great Secret in the cure of Quartans, because they leave no impurity behind in the whole human Body, but destroy the very Essence and Seed of the Disease.

XI. Lastly they cure a confirmed *French Pox* and virulent *Gonorrhœa*, in what Age, Sex, Degree or kind soever, if curable. They remove the Symptoms, and eradicate the root of the Venereal Venom, in a very short time: this they do without any thing of Fluxing, only by a gentle purging of the Body, and that most commonly at six or eight times,

times taking; very few have been forced to take them above ten times for a compleat Cure.

XII. *The Dose and manner of taking.* The Dose is from ten grains to a scruple or twenty five grains at most: if the Patient be vastly strong and robustick, it may be you may venture to give half a drachm: but begin at first with a less Dose as a scruple, and so increase it by degrees, till it comes to half a drachm, you may give it in the pap of an Apple, stewed Prune, conserve of Roses, or a little Syrup, and that in the Morning fasting: and let the Sick have mutton Broth or posset Drink to take after it by degrees, as it works: You may give it every fourth day, or twice a Week, as you see the Sick is in strength. If the Disease be very rebellious, give twenty or twenty five grains of *Calomelanos* in Conserve of Roses over Night, and then these Pills the next Morning, so will the cure of the POX come speedily on. *Price eight Shillings an ounce.*

C H A P. XLIV.

Pilulæ Familias nostræ. *Our Family-Pills.*

I. **T**ake Extract of fine Aloes, eight ounces : Resinous Scammony, four ounces : Resine of Jallap, Extract of Colocynthis, of each two ounces and an half : Cambogia, Extractum Benedictum (made of Sena, Rhubarb, two parts, Agarick one part) of each two ounces : Tartar vitriolate an ounce and an half : Elaterium, Extract of Saffron, Powder of Cloves, Mace, Nutmegs, Castoreum, of each one ounce : Calomelanos six ounces ; or in stead thereof Arcanum Coralinum three ounces : all being in fine Powder (except the Extracts) mix them well together ; and with Syrup de Spina Cervina, or Syrup of the juyce of the wild Cucumber, a sufficient quantity, make a mass of Pills.

II. These Family-Pills are a certain cure for the Scurvy, Dropsie and Gout. They cure the Scurvy, (the only reigning Disease in this Kingdom) when it is grown so bad, as to become scandalous, so as many people think it to be the POX. For the Scurvy often causes great Pains in the Head, Nose, Shoulders, Legs and Bones, with other Pains all over the whole Body ; Dulness, Heaviness, with reddish or blewish Spots, or breakings out in the Skin, weakness in the Back and Loyns, a bad Stomach, and sometimes loss of Appetite, looseness and foreness of the Teeth, Throat and Mouth, a discoloured Skin, with Spots, Stains, Pimples, Morpew, Scurf and a general Weakness and Faintness all over the whole Body ; insomuch at last, that it gets into the Bones, and infects the very Marrow of them : this cruel disease these *Family Pills* cure at a few times taking.

III. They

III. They wonderfully cure the *Dropsie* and *Gout*, speedily taking away the Water in the one, and the Pain in the other, though never so great; and beyond expectation giving present ease, relief and comfort; working gently by Stool and Urine, and sometimes by Vomit, if the Stomach be very foul, thereby curing most cureable Diseases. By these *Family-Pills*, we have cured hundreds of persons, both of *Dropsies* and *Gouts*, and that in a very short time, some of which have been given over as incurable; others have gone above a dozen years upon Crutches, and never heard to this day, that they ever mist the cure of one person, although I have used them near this twenty years.

IV. They are admirable good against *Consumptions*; not so much from their adding of Matter, as by taking away the obstructions which hinder the Nourishment from going to its respective parts: in which Disease, as also in the *KINGS-EVIL*, whether in old or young, they have scarcely been known to fail.

V. These *Family-Pills* are an excellent Head-purge, for all Diseases therein, as *Headach*, *Megrim*, *Vertigo* or *Giddiness*, *Lethargy*, *Frenzy*, *Madness*, *Melancholy*, *dimness of Sight*, *Rheums in the Eyes*, &c. beyond any Medicine ever yet known.

VI. They are an excellent help against *Risings*, *Vapours*, *Cloggings*, *Stuffings*, *Gnawings*, or *illness at Stomach*, for such as grow too *Fat*, *Sweat* or *Spit much*, have *costive* or *hot Bodies*, and for all such as have *lost their Complexions* by the *Scurvy*, *Jaundice* or *Greensickness*, such as are overtaken with *lingring Diseases*; growing worse and worse every year than other, with *stoppages in the Head and Breast*, *Melancholy*, *shortness of Breath* and *ill Digestion*, till such time as they fall into

Drop-

Dropsies, the Jaundice, hectick Fevers, or deep Consumptions, lingring and wasting away with dry Coughs, Wheezings, faint Sweats, and the like. These our Family-Pills carry off all those Diseases the right way, by taking them twice or thrice a Month.

VII. They purge by Stool, *Flegm, Choler and Melancholy.* They dispose *old Ulcers, Fistula's, running Sores, sore Breasts, sore Eyes, scald Heads, Kings-Evil-sores, Wounds, Gangreens, Cancers, Tettars, Ringworms, Scabs, salt humors, or any other breakings out, as Pushees, Boyls, Wheals,* to a speedy healing, by purging away the evil Humors which feed them.

VIII. These *Family-Pills* are of excellent use for all *Tavellers, Seamen and such like persons, who live on bad Diet, in ill Airs and moist Places, and near the Sea Coast,* and for all such as have spoiled their Bodies, by *Heats and Colds, hard or excesssive drinkings in their young days,* and such as cannot attend on a cure, but are forced to go about their business. They may take them to Sea with them, because they keep their vertues many years, nor doe *Sea-voyages* spoil them: the which will be found to stand them in great stead in all *Sea-Sicknesses, sickly Seasons, Calcitures, Fevers, Fluxes, Poysons, Agues, Scurvies, Poxes, Surfeits, &c.* which commonly affect such as go to Sea; so that more can scarcely be done by a purging Medicine.

IX. These *Pills* are an incomparable Remedy against the *French Scurvy, all Diseases Venereal, the Gonorrhœa, heat, pain and sharpness of Urine,* although of many years standing, *all Botches and Breakings out of the Flesh and Skin, Ulcers and stoppages of the Reins, Bladder, Womb and Privy Parts;* performing every thing of this kind, with great speed, ease safety and security; so that none living can take notice thereof.

X. They

X. They are an excellent remedy against all manner of *Coughs, Colds, Rheums or Distillations, shortness of Breath, stinking Breath, Vomiting, weakness of the Stomach, want of Appetite, Pleurisies, pains of the Side, spitting of Blood*; suddenly and strangely *easing of Pains*, proceeding from *Wind, Colds, Surfeits*, or any other cause whatsoever.

XI. They cure *Feavers and Agues* of all sorts, sometimes in three Weeks, sometimes in fourteen Days, and sometimes in less time, although of two or three Years standing, and given over by all Physicians; and when almost every one thought the hope of recovery had been past.

XII. They kill all sorts of *Worms*, in old and young; cause a good Appetite and a strong digestion. They are one of the best Remedies in the World against the *Dropsie and Gout*; taking away all Swellings from the Belly, Thighs and Legs; and *all manner of Pains* from the very Bones, when no other means whatsoever will do. They dissolve the *Stone*, and bring away *Slime, Sand and Gravel* from the *Reins and Bladder*; taking away *stoppages of Urine*, and causing those to make Water plentifully, who could not in some days before: this they have done in several hundreds to admiration.

XIII. They are a certain cure for the *Fallingsickness, Convulsions, Apoplexy, Palsie, Cramp, Lameness, weakness of Limbs, Jaundice, Sciatica*, and *all manner of running Pains whatsoever in any part*; insomuch that many bedrid, and given over to all appearance, have unexpectedly met with cure, almost to a miracle; so that many learned Physicians could not but admire at their vertues.

XIV. These

XIV. These *Family Pills* cure *Barrenness*, bring down the *Terms*, strengthen a weak *Back*, help fits of the *Mother*, and other diseases belonging to that Sex: they expel *Wind*, are admirable against the *Colick*, and speedily cure the griping of the *Guts*; so that many seemingly at the point of death, have met with a pleasant remedy.

XV. These *Pills* are a powerful remedy against the *Rickets* in Children, the *Green-sickness* in Virgins, all manner of stoppages in the *Head*, *Liver*, *Spleen*, *Reins*, *Womb*, and pains in the *Bowels*. They purify, cleanse, and sweeten the *Blood*, rectify all distempers of the *Head*, quicken the *Senses*, clear the *sight*, add a good colour to the *Face*, and make the body able to withstand diseases.

XVI. These *Family Pills* are the chief medicine now used, in the cure of all the aforesaid diseases, not only in *England*, but in many foreign Countries and Kingdoms, being cried up, and prized above all other Medicines whatsoever: in so much that in some thousands of Families, on most occasions they are their only Physick, (and from whence they came to be called *Family Pills*) being known to be safe in operation, and certain in the end proposed; for no person curable, troubled with any of the aforesaid diseases, has failed of cure, who has continued (without delay of time, or taking of other Physick) the use of these *Pills*, according to the directions following. All that ever we knew take these *Pills*, have found good at the first taking, and several hundreds yea thousands of People who have taken them have given them this commendation.

XVII. They cleanse the body of *Wind*, *Water* and *ill humours*, without the least griping or making Sick (unless the stomach be very foul) or any way weak-

ning the body; which done they cease working, for they will work no longer than there is diseasly matter to work on. But contrariwise, help all inward wastings or decays of Nature, strengthen weak Backs, caused through pains, wrenches, or over strainings; they stop all weepings, moisture, whites, &c. (by carrying the humour another way, strengthening the Vessels, fortifying Nature, &c.) restoring the decayed parts even to a wonder.

XVIII. Our success in the use of them, and their safety, has brought them into estimation, in many parts of the World: for as much as they that take these Pills, need not go under long, dangerous and chargeable courses of Physick, suffer by bad medicines, and be driven time after time, from one Physician to another.

IX. When the disease is of long continuance, a perfect cure cannot be expected in a few times taking, in those cases, you may take them in the largest dose, at least ten, fifteen times, or more, as need requires, omitting them a day or two, or more, as you see cause: they being safe and gentle in their operation, and fit to be taken by all persons from two years old to threescore, and upwards, at any season of the year. And it is observable that these Pills, after four or five times taking, keep the Bowels open for a month together, whereby diseases seem to melt away, almost insensibly.

X. This medicine is of an admirable and friendly Quality, performing all its operations, as nature herself requires, they sometimes purge gently, sometimes work gently by vomit, and sometimes by Urine, and sometimes by all those ways, according as nature herself is disposed to the action, though chiefly by stool, so that they are not bound to any particular way of Operation, but that which may best serve natures end in restoring health.

Hence

Hence it is, that they not only cure diseases of the humours, as the *Scurvy, Gout, Surfeits, ease all manner of pains, &c.* but they rectifie distempers of the Spirits, taking away *heaviness, dulness, melancholy and the like*, performing all their operations with great safety, speed and ease, being fitted for all persons of what *Age, Sex, or Constitution*, so ever. If there be but little corruption in the body, they bring forth but little; if much, they bring forth much; and in persons perfectly well they will scarcely work at all, because in such they have no enemy to meet with.

XXI. These Pills are cheap, safe, easy, approved helps, and free from the least danger, yet very effectual to all the aforementioned intentions, performing what is here spoken of without hazard of body, money, or expectation, as some thousands in this Kingdom, can upon their own knowledge testify: they will keep many years good, and work all their good effects, as well after a length of time as now.

XXII. The way of using them. *These Pills may either be swallowed down alone, or taken in the pap of an Apple, or Honey, or a stewed Prune, or in a little Syrup, or bruised and taken in a little Beer, Ale, Wine, or Broth, as every one likes best, and so taken early in the morning, or late at night going to bed, without observation of any other Order; only taking heed of Cold. From two years old to three or four you may give one pill: from four years old to ten, you may give two or three pills: from ten years to sixteen, you may give three or four pills: and from sixteen years of Age to threescore and upwards, you may safely give five or six pills: you may begin with a little dose first, and so encrease it, as you find the body is in strength. They are to be had in most market Towns in England. Price twelve pence a Box, or five shillings an ounce.*

C H A P. XLV.

Balsamum de Chili, Or, Natural Balsam of Chili.

I. **T**Here is lately brought from *Chili*, a Province in *America*, a most excellent Natural Balsam, differing (but not much) from those of *Peru* and *Tolu*, but no ways inferiour in Vertues and excellency, as the severall experiments lately made of it, by severall learned Physicians, in the curing of diseases, has given evident demonstration.

II. It is a remedy that no man under the Sun can compose, being a natural Balsam, distilling from a small Tree in *Chili*, bearing a leaf something differing from an Olive leaf. It is without doubt the most precious of all Natural Balsams, by reason of its great Vertues, and admirable odour, excelling all others, even the most fragrant.

III. It eases all manner of pains in any part of the body, coming of cold or Wind, chiefly pains of the Stomach, Indigestion, and want of Appetite, corroborating, and strengthening of it, after a wonderful manner. It cures all Ulcers of the Breast and Lungs, Reins, Bladder, or Womb, inward Bruises, spittings of Blood and such like. It helps shortness of Breath, Coughs, Consumptions, Wheefings, Hoarsness,

Hoarsness, Asthma's, and other diseases of those parts.

IV. It is excellent against the Falling-sickness, Apoplexy, Convulsions, Palsie, Lethargy, Tremblings, old Head-achs, Megrims, Vertigo's, and other cold and moist diseases of the Brain and Nerves, being inwardly taken, as shall be hereafter directed; and outwardly also anointed upon the Part. It strengthens the Brain, comforts the memory, and fortifies all the senses both internal and external, beyond any other natural Balsam.

V. It kills worms whether in old or young, cures Ruptures, although of many years standing, and dissolves the Stone and expels it, as also Sand, Gravel or Slime, or any other thing which may obstruct the Urine, or stop up its Passages: so that its believed there is scarcely a better remedy for that purpose upon Earth; for it gives ease in the most vehement pain, and being constantly taken for some time, perfects the cure.

VI. It cures all Colick pains, Gripings, wind in the stomach or Bowels, and perfectly cures all sorts of Fluxes, bloody Fluxes, excoriations, and such other like distempers of the Guts. It cures Deafness, pain and noise in the Ears to a wonder, a drop or two, being put into the Orifice of the Ear, and kept in with a little Cotton dipt in the same.

VII. It cures the Green-sickness in Virgins, and provokes the Terms in Women, being taken from ten to twenty, thirty, or forty drops, in a glass of white Wine, (as shall be anon directed) morning and night for a week together. It cures also Barrenness, promotes conception, and causes easy and speedy deliverance to Women in Travel (for all which purposes it is said the Indian Woman constantly takes it:) and in a great

measure it prevents or takes away those After-pains, being taken to the quantity aforesaid in a glass of *Juniper* or *Cinnamon-water*.

VIII. It heals all manner of Green wounds, rotten Ulcers, Fistula's, new or old running sores, in any part of the body: as also Punctures or hurts of the Nerves and Tendons, Aches, pains, Lameness, weakness of the Limbs or Joynts, being dropt into the Wound or Puncture, or otherwise applyed thereupon, with a Tent, Lint, or Leather, &c. and so bound up, and not stirred in twenty four hours. It commonly cures at four or five times dressing; sometimes at two or three times, and sometimes at the first dressing, though the wound be very deep, confused or large. This I speak upon my own experience.

IX. It is an assured remedy in the cure of the Palsy (if not inveterate) trembling, Gouts of all sorts, and any weakness of the Nerves and Joynts, coming of a cold and moist cause, by anointing the afflicted parts therewith, and taking it inwardly, as shall be immediately directed; for it does greatly, and by degrees (as it were) carry off the morbidick cause and matter, almost beyond belief.

X. This marvelous Balsam, opens all obstructions of the Liver and Spleen, being taken morning and evening for a month together in a little *Syrup*, or other convenient Vehicle (as shall be presently directed:) It is held by the Natives for a great Treasure, and has many other singular Virtues, not here necessary to be named, lest we should prejudice its worth and excellency.

XI. And

XI. And as it is certain, that this *Balsam* is one of the greatest *Specificks* in the cure of the *Palsy*, *Scurvy*, and *Gout* that is; so it transcends most other medicaments for those purposes. But it ought to be constantly given, and in a due dose, and with those advantages that it may not nauseate the stomach. So taken, it performs more than any other natural *Balsam*: it cleanses the whole body of all impurities; mundifies the whole Mass of Blood, heals all inward bruises, Wounds, Ulcers, or Excoriations, whether in the Bowels or Lungs; and restores decayed nature to a Miracle, carrying off all its *Fœculencies* by Urine and Stool.

XII. *The Dose and manner of taking it.* In diseases of the Head, Brain, and Nerves, give it in *Rosemary* or *Cinnamon* Water, or in *Canary*. For the Stone, and other diseases of the Reins and Bladder, you may give it in White or Rhenish Wine. For the Colick, and diseases of the Bowels, you may give it in *Juniper water*. For Palsies, Gouts and weakness of the Nerves and Joynts, you may give it in some Antiparalytick Wine. If the Sick cannot take it in any proper Wine or Water, it may be mixt with any proper Syrup, and so swallowed, drinking a glass of the said Waters or Wine after it.

XIII. If it cannot be so taken, it may be made up into a Bolus with some Conserve or Electuary; or into Pills with some fit powder, as of *Bay-berries*, *Cinnamon*, *Cubebs*, *Nutmegs*, *Zedoary*, or what the Physician shall think more proper, and so gilded: for by this means it will be taken without nauseating. You may

give it from half a dram to two drams, yea to three drams, according to age and strength, but then you ought to encrease the dose by degrees; and it may be given morning and night for a month, or two or three, as you shall see occasion, and that without any prejudice.

The Merchant that has brought it over, has only intrusted it to be sold with Mr. Thomas Passenger, at the three Bibles on London-Bridge, where it may always be had in any quantity, ready put up in Glasses, sealed with the Balsam Tree. Price twenty four shillings the pound, or eighteen pence the ounce.

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skips, which seem afar off; and it is good for such a purpose, because it is inclining to blew. 3. *Sap-Green.* It is a dark dirty Green, never used but to shadow other Greens in the darkest places; or to lay upon some dark ground behind a Picture, which ought to be of a dark Green: but you may do without this Colour, for Indico mixt with yellow Berries make just such another Colour. 4. *Copper-Green.* It is an excellent transparent Colour, of a shining nature, if thickned in the Sun, or over a gentle Fire. It is most used of any Green in washing of Prints or Maps, especially in colouring of Trees, Ground, Grass, &c. for it is a most perfect *Grass-Green.*

XXXIX. *Observations on YELLOW Colours.*

1. It is a deep Yellow if it stands long, and is principally to shadow yellow Berries with in stead of Red Lead; but is somewhat a brighter shadow: Red Lead and yellow Berries make just the like Colour. 2. *Masticote.* It is a light Yellow, just like yellow Berries mixt with White: it is used to colour a light Ground in a Picture, and then to shadow it with the Water, viz. the thinnest part of the Colour of burnt Umber or Red Lead. 3. *Yellow Berries.* It is most used in washing of Maps, Pictures, &c. of all other Colours it is bright and transparent, fit for all uses, and sufficient without the use of any other Yellow.

XL. *Observations on BLEW Colours.*

1. *Blew Bice.* It is the most excellent *Blew* next to Ultramarine, and may serve in stead thereof. It is too good a Colour to use upon all occasions: and for more ordinary uses, you may use *Smalt* in stead of either of them, but it will not work so

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well as *Bice*, when you intend to bestow some cost and pains upon a piece, you may use *Bice*; otherwise you need use no other Blew in your Work than *Blew Verditer*; with which in ordinary Works, you may make a pretty good shift, though all the other *Blews* be wanting. 2. *Indico*.

It is a dark Blew, and principally used to shadow with upon other Blews. Mixt with yellow Berries, it makes a dark Green, to shadow other Greens with in the darkest places. 3. *Blew Verditer*. It is a very bright pleasant Blew, and the easiest to work with in Water: it is somewhat inclining to a Green, and the Blew which is the most of all used, mixed with yellow Berries it makes a good Green.

XLII. Observations on WHITE Colours.

1. *Ceruse*. It is the best White, next to Spanish White, and better than white Lead, if it be good and finely ground, as you may have it ready prepared at the Colour-Shops; being only white-Lead cleansed and made more pure. 2. *White Lead*. It will serve in place of the former, if washt as before is directed; either of them will serve the same occasion, and being mixed with another Colour, they make it lighter, the which you may vary in proportion as you see occasion.

XLII. Observations on BLACK Colours.

1. *Lamp Black* or *Printers Black*. It is the most used, because it is the easiest to be had, and is good in Washing. But you must never put Black amongst other Colours, to make them dark, for so they will become dirty; neither shadow any Colour with Black, unless it be *Spanish Brown*, when you would colour an old Mans Gown, which ought to be done of a sad Colour; all other Colours shadowed with

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with Black, look dirtily, not bright, fair or beautiful.
2. *Ivory Black.* It is the deepest Black that is; and is thus made. Take pieces of Ivory, put it into a Furnace till it be thoroughly burned, then take it out, and let it cool; pare off the outside, and take the blackest in the middle.

XLIII. A glorious Colour of East-India Cakes.

In using of these Cakes, you may take one, or a part of one of them, and put it into a Horse-Muscle-Shell, which is very clean, adding a little fair Water; just enough to wet it all over, letting it lie so about a quarter of an hour: then squeeze it hard against the Shell, or wring it out between your Fingers, and there will come forth an admirable transparent Colour, which will serve in stead of *Lake*, if your *Red Cake* be good. These Cakes are commonly counterfeit and good for little, but you may know them by cutting a little way into them: if they be good they are as red within as they are without; if naught, they look pale and whitish within.

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XXVII. **T**O make a Purple Colour.

Take Log-wood, boyl it in Vinegar and Beer, in a glased earthen Vessel, adding thereto a little Alum, till you tast it to be strong on your Tongue: being sufficiently boiled, strain out the Liquor through a Cloth, and keep it in a Glass close stoppt for use.

XXVIII. *Another Purple Colour.*

Mix *Blew-Bice* and *Lake* together; or if you want *Bice*, take *Blew Verditer* (but that is not altogether so good:) mix them well together and it is done. If you want *Lake*, you may in stead thereof use *thick red Ink*, which will do as well as *Lake* in *Washing*.

XXIX. *To make a Flesh Colour.*

Mix with *White* a little *Lake* and *Red Lead*; a very small quantity of each; you may make it as light or as red as you please, by putting more or less *White* in it. If you would have a swarthy Complexion, to distinguish a Mans Flesh from a Womans, put a little *yellow Oaker* among your *Flesh Colour*; and for your shadow put a little more *Lake*, and a small quantity of *burnt Umber*.

XXX. *To make Cloud Colours.*

You may sometimes take *Blew Verditer*; or *White* shadowed with *Blew Verditer*: sometimes *light Masticote* shadowed with *blew Verditer*; or *Lake* and *White*, or *red Ink* and *White* shadowed with *blew Verditer*, as afore said.

XXXI. *To*

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XXXI. *To make Sky Colours.*

Mix *White* with light *Masticote* or yellow *Berries* for the lowest and lightest places: *red Ink* not thickened and *White*, for the next degree: *blew Bice* and *White* for a higher degree: and *blew Bice* alone for the highest of all. In stead of *Bice* you may use *Verditer*; all which must be laid on, and so wrought one into another, that there be no sharpness or sensible beginning in the edge of your Colours, but that they be as it were one drowned in another.

XXXII. *To make Colours of all kinds of Metals.*

Take a piece of *Crystal*, beat it by it self in an *Iron* or *Brass* Mortar, and grind it dry, on a *Marble* or *Porphyry Stone*, till the Powder be very fine; then grind it again on the same Stone with good *Glair of Eggs*, and lay it on the Work with a *Pen* or *Pencil*; being well dried rub it over with *Leaf Gold*, or any other *Metal*, and it will be of the same Colour that the *Metal* is of. If *Quick-Silver* two ounces be amalgamated with *Tin* one ounce, then melted, and after ground on a *Painters Stone* very small, it will be a powder of a *Silver Colour*.

L I B. III. C H A P. XII.

After Sect. 3. Pag. 192.

IV. **I**F your painting be Wainscoting, or any other Joynery or Carpentry Work, you may take the Wood-ashes (at Sect. i.) and mixing them somewhat thick with Water, rub them over the Painting, with a stiff Bristle Brush, as a Shoo Brush, and so scour, wash and dry it, as aforesaid, and then varnish it with common Varnish.

V. But if the Painting be more curious, as Figures of Men, Beasts, Landskips, Flowers, Fruits, &c. then take Smalt only, and with a Sponge wet in Water, cleanse it as aforesaid gently, which wash after with fair Water, then dry and varnish it, so will the lustre and glory of your Painting be much recovered.

VI. This cleansing of Paintings, ought not to be practised but seldom (*viz.* when it is very much soiled) because often and too frequent cleansings in this kind, will by degrees wear off part of the Colours: And therefore endeavour to preserve their first Beauty, by keeping them from smoak, dust, flies, &c.

VII. All Pictures, (chiefly those performed with mixtures of white Lead) are apt to grow tawny, to tarnish or grow rusty, as may be seen in all old pieces: To prevent this, expose them to the hot Sun three or four days in *May* or *June*: so will the
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ill colour be much drawn off, and the Painting appear more fresh and beautiful: thus doing yearly, you will wonderfully preserve them.

L I B. III. C H A P. XVI.

After Sect. 7. Pag. 199.

Of fitting up and Painting Sun-Dials, Timber-work, &c.

VIII. **I**F the Dial be not drawn upon the Wall it self; you must have a Dial Plain, which you may make of the firmest and clearest Oak, and thoroughly dry, so as that it may be free from shrinking. Cut your Board to such a length, as you intend the length of the Dial to be of, and so many of them, as may make up the designed breadth; joynt and plain them on both sides, then set them to dry (for though they have lain in a House never so long, and are never so dry, yet being thus shot and plained, they will shrink afterwards beyond belief:) when they are dry enough, and will shrink no more, shote them again with good Joynts, which fasten together in the glewing with Pins or Pegs, as Coopers do the bottoms of their Tubs: being thus glewed and dryed, let it be well plained, and tryed every way, that it may be both smooth and true: let the edges be shot true, and all of a thickness, that they may fit into the Rabets of the Moulding, put round it, just as a Pannel of Wain-scot doth in its Frame: this will give the Board liberty

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berty to shrink and swell without rending, whereas mouldings, nailed round the edges, as the vulgar way is, doth so restrain the motion of the Wood, that it cannot shrink without tearing; but made this way, they will last a long time, without either parting in the Joynts, or splitting in the Wood.

IX. The colours chiefly made use of in painting Dials are chiefly 1. Ceruse, 2. white Lead, 3. Lamp-Black, 4. Char-cole or Sea-cole, 5. Spanish-brown, 6. Red-lead, 7. Vermilion, 8. Cinnaber Lake, 9. Smalt, 10. Blew Bice, 11. Blew Verditer, 12. Indico, 13. Umber, 14. Verdigrise, 15. yellow Oaker, 16. yellow Pink. But for a Plain Sun-dial, these four Colours will serve, viz. 1. *Spanish Brown*, for the priming Colour, 2. *Vermilion*, for drawing the Lines, 3. *Lampblack*, for drawing the Figures, 4. *white Lead*, for the last Colour to be laid upon the Plain.

X. But if you will have your Dial more rich, you must have, 1. *Leaf Gold* for gilding, 2. *Gold Size*, to make the Figures to lay Gold on, 3. *Smalt or Blew Bice* for the Margin and inner Table. And for curiosity sake, you may use such other Colours, as your fancy shall direct you to be most suitable to the design. To these things add *Linseed Oyl*, to temper your Colours with: and *Oyl of Turpentine*, to mix a little of it with your Colours, to make them dry the more speedily.

XI. *Ceruse* and *white Lead*, are easie to be ground fine; and the only white Colours used in Painting in Oyl; these are the last Colours to be laid on the plains of Dials: and with them Posts, Pails, Palisades, Gates, Doors, Windows, Wainscoting, &c. are often coloured both for beauty and preservation, they

they resisting the Weather well. They dry well, but to make them dry more speedily, some in tempering put Oyl of Turpentine to them; but then without doors they resist not the Weather so well.

2. *Lamp-Black*, is a fair Colour, and may be tempered with Linseed Oyl: But it must be first burnt, then ground, afterwards tempered with the Oyl: a little of this with much *White*, makes an *ashcolour*; and according to the proportion of either, it gives several delightful varieties. 3. *Charcole*, is a good Black for ordinary uses, but it must have good labour in grinding to make it fine; it dries well.

XII. *Spanish Brown*, the best is of a deep bright colour and free from Stones; it grinds well with pains, and is the only colour used in *priming* all manner of Timber-work, 1. because it is cheap: 2. Because it dries kindly, yet gives the Oyl sufficient time to pierce into the Wood. 3. Because it freely receives all other Colours which are laid upon it. This of it self is a perfect horse-Flesh colour, and a natural shadow for Vermilion: being mixt with white, it gives sundry varieties, according to the various proportions. 2. *Red-Lead*, it is not to be ground very fine on a Stone, but you may make it fine by washing: it is a great dryer and binder, for which cause it is mixed with some other Colours, to make them dry speedily: and it notably resists the weather, as well as any Colour whatsoever. 3. *Vermilion*, It is a rich Colour, and of a good body, if it be fine ground, otherwise it is as bad a Colour as any: but being ground as soft as Oyl, no Colour works better. You had best to buy it in the Stone, lest it be sophisticated with red Lead. It is a perfect Scarlet, and mixt with white, it gives a *Carnation*, in divers varieties, according to the proportions. Its shadow

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is Spanish Brown. With this we commonly draw the Hour Lines on Sun-dials. 4. *Cinnabar Lake*, It is a rich Crimson colour, and is to be ground very fine. Mixt with *Bice* it makes a *purple* of divers varieties, according to the proportions. Mixt with *White*, it makes a *Crimson Carnation* in divers Varieties, which *White* and *Red-Lead*, a fresh colour. It is used in Ornaments of Dials, and in several Flowers. A Margin of a Dial with Gold Figures, is beautiful.

XIII. *Smalt*, it is a delicate Blew at a distance, if strewed on: if you will work it in Oyl, it must be made fine with washing, and mixt white-Lead, but even then it works not well, but in time will be apt to turn Black. The best way therefore is to strew it on, and then there is scarcely a more glorious Blew: it is a good colour for the Margin of a Dial, if it be figured with Gold, as also for other purposes. If you buy it to work in Oyl, the finest is best, which they call *Oyl smalt*. 2. *Blew Bice*, It is a pale colour, and fine enough for almost any use, and works well, though a little sandy. It is used for a Margin ground in Dials, to gild Figures in small Plains, that are near the Eye. Mixt with *Pink*, it makes a *Green*: with *Lake* a *Purple*: with *white* a light *Blew*; and in each several varieties according to the proportions. 3. *Blew Verditer*, It is sandy, apt to change and turn greenish. It may serve in Dial Painting where *Bice* and *Smalt* are wanting, but not so good as either of them. Mixed with yellows, it makes a good green: with Whites or Yellows, or both, many other varieties. 4. *Indico*, It is a very dark Blew, and seldom used without a mixture of White, unless to shadow with. It grinds fine, works well, and is much used in common Painting for the last colours of Posts, Pales, Rails,

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Rails, Pallifadoes, Doors, Windows, or any other Timber work, for that it resists the weather well. It is dear, and therefore many Painters use *Blew-Balls*, which is almost like it, but not so good a colour either for beauty or lasting, mixt with White, it makes a *Led-Colour*: and it is excellent to marble *White* withal or to shadow it.

XIV. *Umber*. It is a perfect hair colour, it may be ground very fine with much labour, and dryes and binds exceedingly, and therefore very well resists weather. It is much used in Painting for the many varieties it gives. Calcin'd in a Crucible, it is the natural shadow for Gold, and some other colours. 2. *Verdigrise*; It is a perfect Willow Green, and therefore for some uses must be corrected with yellows. 'Tis very foul, and therefore ought to be cleansed thus. Grind it fine, and put to it eight times its weight of spirit of Vinegar; digest till the Vinegar is tinged very Green: then decant the colour, cast away the Faces, and evaporate the Vinegar in a brass Vesica, so have you a glorious *Verdigrise* at the bottom, of which one ounce is worth ten of the former. It dries speedily: mixt with Pink yellow, it makes a pure lively *grass Green*: with White, many varieties of light Greens, &c. 3. *Yellow Oker*. It is either English or Foreign. The one is of a Wheat straw Colour, the other somewhat deeper, with much labour it may be ground very fine. It is much used in vulgar Painting, and to make Gold size withal. 4. *Yellow Pink*. It is a yellow inclining to Green, and grinds well. It is a good colour for some uses, but chiefly to mix with other colours, to make *Greens* withal.

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XV. The aforegoing Colours are now to be either *Burnt, Ground, or Washd,* as they severally require, and as we have taught in Chap. 22. aforegoing of this Book: this done you are to grind them with Oyl, thus. Take about two spoonfuls of the colour you intend to Grind, and put to it a little Linseed Oyl, (but see you put not too much) mix them together, and grind them well upon your stone with a Muller: add Oyl by degrees, till it comes to the thickness of an Oyntiment, for so it grinds much better than when it is so thin as to run about the stone: oftentimes as you grind, bring the matter together with a piece of Lanthorn horn, and as much as may be keep it together in the middle of the stone, till it is ground fine enough, then take it off, and put more colour upon the stone, grinding as before, which work continue till you have Colour enough to serve your occasion. This done, if you grind other colours after it, cleanse the stone first by grinding Sand and Water upon it, then washing it, and drying it.

XVI. The Colours thus ground will be too thick for use, without adding more Oyl: therefore when you use them (whether simple or compounded, as your occasion requires) you must add more Oyl to them, till they be so thin as to run free with the Pencil, yet not to let the ground on which they are laid, to be seen through them, or to run about when it is laid on; for so, you must be forced to go over it the oftner, before your work will be substantial; whereas, if your Colour be as stiff as it can well be wrought, your work will be done with more speed; and once doing will be more substantial, than three times

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times with the thin Colour. This is the cheat of common Painters who do work by the yard, at a certain price; they do it with such thin Colour that all their three times doing over, is not so substantial as one time would be, if the Colour had been of a thick and strong body: and three times colouring with such a thick and well bodied Colour will last ten times as long, as that which is wrought thus slightly by common Painters.

XVII. Observe also, that if the Colour to be mixt, be your *priming Colour*, viz. *the first colour you lay on*, it ought to be made so much the thinner, that it may have Oyl enough to pierce into the Wood, which is much for its durability; but after your first Colour is laid on, let your next be thicker, as before is taught.

XVIII. But if your Colour to be mixt be for the drawing of Hour-lines, or making the Figures in a Sun-dial, then let it be tempered as stiff as is possible to use it, that it may not presently decay, but may be capable by the quantity laid on, to last as long as any colour on the Dial; to which purpose its being wrought in *Fat Oyl* will much conduce: how this fat or thick Oyl is made, we now come to teach.

XIX. *How to make the said fat or thick Oyl.* Take Linseed Oyl what you please, put to it a sufficient quantity of Red-Lead (the more, the better) so as it hinders not the boyling. This Red-Lead, adds a drying quality to the Oyl: let them boyl gently, over a Charcole fire without flame, till it is boyled enough, which you may know by taking a little of it out and cooling of it; if it roaps like thin Treacle, or a Syrup, it is enough: then with a
lighted

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lighted paper set it on fire that it may take away much of its greasiness, let it burn a minute or two, more or less as your Oyl is in quantity: then extinguish it, by covering it close over with a Cloth, and letting it cool and settle, decant the clear Oyl, and keep it in a bladder for use.

XX. *To make the Gold size.* Take *Yellow Oker*, grind it on a stone with water, till it be very fine, and lay it on a chalk Stone to dry: *Or thus.* First grind it fine as aforesaid, then wash it (by Sect. 6. Chap. 22. of this Book) and thereby separate the pure fine part of the Colour, which dry as the former. Take of this prepared *Oker*, what you please, add to it a little of the former prepared Oyl, and grind them together as you do other oyl Colours: this work will be laborious, for it must be ground very fine, even as the Oyl itself; and the finer it is, the greater luster will your Gold carry that is laid on it. Where note, that you put so much of the prepared Oyl to the Oker, that it may be of a good stiffness to work well, and of such a fit body, that after it is laid on, it may settle itself smooth and glossy, but not so weak as to run. See Chap. 21. Sect. 5.

XXI. *How Colours are to be set off.* 1. *Blews* set off best with *Yellow* and *Whites*: indifferently with *Blacks* and *Reds*: not at all with *Greens*, *Purples*; or *Browns*. 2. *Greens* set off best with *Whites* and *Yellows*: not at all with *Blacks*, *Blews*, or *Reds*: 3. *Reds* set off best with *Whites* and *Yellows*: indifferently with *Blews* and *Blacks*. 4. *Yellows* set off best with *Blacks*, *Blews*, and *Reds*: indifferently with *Greens*, *Purples*, and *Whites*. 5. *Whites* and *Blacks* set off well with any Colour, because they so much differ from all others.

XXII. *The*

XXII. *The manner of Painting Sun-dials.* Having the draught of your Dial on paper, your Plain or Board fitted, and your Colours prepared, proceed thus. Take *Spanish Brown* well ground, mixed, and somewhat thin, and with a large Bristle Brush, colour therewith your Plain all over, on every side, so that no part be left undone. This is called the Priming of your Dial. When it is dry, do it over again with more of the same Colour, tempered somewhat thicker, which when dry also. You may do it over again a third time, with the same colour, so will your work be the stronger, and last longer.

XXIII. When this last time of colouring your Plain is dry; then go over it with *White-Lead Colour*; which when dry, go over it again three or four times successively after each drying: so will the face of your Plain be defended against the fury and violence of the weather for many years.

XXIV. *To transferr the Draught of your Dyal upon the Plain.* The last Colouring being dry, draw on the Plain (with a black Lead Pencil) a Horizontal Line, so far from the uppermost edge of your Dial, as your Reason shall think fit, or best convenes with the Plain: then set out the margin of the Dial, with sundry Lines for the hours, half hours and quarters: after, take the Draught, and place it on the Horizontal Line, observing to place the Center, according as the Situation of your Plain requires: if the Dial be a direct South Dial, let the Center be exactly in the middle of your Plain; if your Dial declines Eastwards or Westwards, place the Center of the Draught, between the Center of the Plain, and the Eastern or Western side thereof: If it declines but little, place the Center of the Draught,

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but a little from the Center of the Plain : if it declines much, place the Center of the Draught the more out of the Center of the Plain : for by thus doing you gain a greater distance for those Hour-lines, which in declining plains fall nearer together on one side than they are on the other; and you ought to do it in all declining Plains, except they decline far, as between eighty and ninety degrees, for then they are best to be drawn without Centers, to gain the more distance for the Hour-lines.

XXV. The Draught being thus placed on the Plain, and fastned with Pins or Tacks; transfer it upon the Plain, by laying the Ruler over every hour, half hour, and quarter division; and where the Ruler shall intersect the boundary lines in the Margin, there make marks, by drawing lines with a Black Lead Pencil of such length as each division requires, drawing the hour and half hour lines quite through the Margin, for the guiding you in the right placing the Figures. Then draw the *Sub-stile* Line, as it lies in the Draught, that it may guide you in right placing the *Stile* of your Dial.

XXVI. This done, take the Draught off, and with *Vermillion* well ground and prepared, draw the boundary lines, as also the hours, half hours, and quarters : let the colour be as thick and stiff as you can work it, so as to draw a clear and smooth Line: the Lines being drawn, then with Lamp-Black delineate the Figures; and in the Margin at the top of the Plain, you may put the date of the year, or some proper Motto; lastly fix in, the *Stile* of your Dial, and paint it in like manner as you did the Dial before : thus is your Dial compleated.

XXVII. *To gild the Figures of Sun-dials.* Draw the Figures or Letters you desire to have gilt with the

the Gold size (at Sect. 20. above) which let dry so long, till that by touching it with the end of your finger, it will stick a little, yet not come off: then take leaf Gold, lay it upon your gilding Cushion, and with a very sharp and smooth-edged knife, cut the Gold into such pieces as may best besit your work; then with a flat stick lin'd with Cloth, take up your cut pieces of Gold, and transfer it to your size, upon which clap it down, and your Gold will leave your lin'd stick, and cleave to the size, which then press down with Cotton, or a Hares foot. Thus do till all your size is covered with Gold: and when it is perfectly dryed, with your Hares foot, brush off all the loose Gold, and the gilding will remain fair and beautiful: then if you please, Diaper on your plain with thin *Umber*, whatsoever shall be suitable to your design.

XXVIII. *How to lay on your Smalt.* When you design to make the Margin of your Dial Blew, you must do it thus. After the figures are gilt, take white Lead, stiffly tempered with fat Oyl (at Sect. 19. above) and therewith cover over your whole Margin: and then with a small fine sarse sift on your Smalt; or otherwise with a Goose quill Feather, cover your Margin over with it, and with a piece of Cotton dab it down close, that it may stick fast to the ground laid under it: when it is all throughly dry, wipe off the loose colour with a Feather, and blow the remainder off with a pair of Bellows; so is your work finished: the square of the Dial may also be coloured Blew (if you so please) after the same manner.

XXIX. *To Paint Wainscot Doors, Windows, Posts, Rails, Pails, Gates, and other Timber work.* This differs not much from the former method of Painting

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Sun-dials; you may proceed thus. Prime (the thing to be painted) first with *Spanish Brown*, as you did your Dial Plain, two or three times. Then take *White Lead* well tempered, or *Umber* and *White* or *Blew Balls*, or *Indico* and *White*, or any other Colour you intend your work shall be done with; and that Colour (what ever it be) let it be laid over your former Priming, four or five times successively after each Drying: for the oftner it is gone over, the longer it will last: you may do it with variety of Colours, or Marble it as you please, so shall your work be finished according to your desire. *But here note*, that Wainscoting, and other Paintings within Doors, need not be done above twice over, with the last Colour; 'tis only that Painting which is exposed to the Air and Weather, that requires so many times running over it: and indeed, if it be not well and often done, it will not last long, or be of any considerable service.

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after Sect. XIV. Page 222.

XV. **V** *Ernix Italica*, The Italian Vernish.
Take Venice Turpentine pure and clear eight ounces, evaporate it over a gentle fire, till the Turpentine is very hard and brittle: make it into a subtil powder, put upon it by degrees Oyl of Turpentine, and digest them so long together till the powder is dissolved: then pour off the clear from the Faces, and keep it for use.

XVI. *The Mastick Vernish.*

Take Oyl of Turpentine as much as you please: put it over the fire and make it boyl; then by degrees put in Grains of Mastick, so long till the Oyl will dissolve no more: the solution being cooled, separate it from the Faces, and keep it for use. After the same manner you may make Vernish of Gum Sandarach.

This Vernish is of good use for the preserving and setting off of Pictures: and being laid upon things Gilded or Silvered over, or laid over with the leaves of any Metal; it so preserves them, that they lose not their Colour or Gloss. This differs not much from that at Sect. 1.

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XVII. *The Amber Vernish.*

Take Amber in powder, as much as you please: moisten it with Linseed Oyl, or Oyl of Wall-nuts: melt them together, till they acquire a black Colour: then pour them forth upon a Wet Marble. This mass beat into Powder, and put it by degrees into Linseed Oyl (prepared before-hand by boyling:) put as much in, as the Oyl will dissolve; then keep it for use.

It is of great use for the Vernishing of Sticks, Fans, Pots, Cups, Tables, Stones, Statues, Cabinets, &c. being laid on with a hard Pencil, the better to spread it over, &c.

To prepare the Oyl of Linseed, or other the like Oyls, for the aforesaid Vernish. Take Linseed Oyl what you please; then put into it a piece of Bread, and presently there will be made an effervescence or fermentation, by means of the Aqueous particles: afterwards put in some Alkali, as Lime, Chalk, Whiting, and several Calces of Lead, that the Acid may be absorbed: this done, let it settle, decant the clear, and clarify it: so is it prepared for the aforesaid use. Take of this prepared Oyl, put it over the fire, and put in per vices, the aforesaid Powder of Amber, Sandarach, &c.

XVIII. *Vernix Japonica, The Indian Vernish, by another process.*

Take the best Gum Lacca in fine Powder eight ounces: The best rectified spirit of Wine sixteen ounces: mix them well, by strongly shaking them in a Glass, so long till the spirit of Wine has dissolved the Lacca; digest it two days, and the Vernish will be finished.

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Where note. 1. That thin Vernish, being laid upon any thing, immediately dries. 2. That it ought to be continually laid on, till it is thick enough, and the superficies is equal and smooth. 3. That it be chiefly used in April, or May, in a clear Sun-shining day, and then afterwards dried in a gentle heat for six days. 4. That the vernished things be made smooth and even, by rubbing them with Pumice stone and oyl Olive. 5. That their superficies be then polished by farther rubbing them with Chalk, or Putty, so will they shine, and look as clear as Glass. 6. That it may be laid over any Colour you please, by which means the colour will look much more Glorious. 7. That otherwise you may mix the Colour with the Vernish, being first made into a subtil Powder, and either moistned with rectified spirit of Wine, or its Tincture extracted therewith, if it will yield a Tincture, and so mixed with the Vernish. 8. That Sanguis draconis, Red Sanders, and other coloured Bodyes which will yield to a Tincture, may be first mixed with the Lacca, and so the Vernish be made coloured at once, by mixing with the said rectified Spirit. 9. That being put upon leaves of Metal, as of Gold, Silver, Tin, Brass, it makes them look infinitely more Glorious, and preserves them so. 10. That it ought to be used before the fire, or in the heat of the Sun, otherwise it will be apt to chil, and your work will be cloudy and opacous, not clear and bright.

XIX. A Vernish to preserve Timber or Wooden works from rotting.

Take the best and hardest Rosin; purify it well; add to it a sufficient quantity of Linseed Oyl, so much as may conveniently serve to toughen it: melt and well incorporate them together on the fire; then take Umber ground very fine and mix it therewith: which being well mixed together, and whilst hot, you may Vernish Timber or other wooden work therewith at pleasure. (c 4) Where

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Where note, 1. That 'tis an excellent Vernish to preserve Timber or Wooden work, lies like the China Vernish; and will endure ten times as long as any Painting, if well done. 2. That it is good Vernish to preserve the border Boards in Gardens, or any other thing which you would have last long in wet or Moisture, as the Pillars of Horizontal Sun-dials, Wooden Pails, or Rails, Arbours, &c. 3. That being spread on Cloth with a Trowel, it will make a most excellent covering for Tents, Huts, Turrets, Houses of Pleasure, Pent houses, &c. 4. That 'tis an excellent thing to prime Hogsheads or Barrels, which you use to keep water in; you may do them both within and without side, for thereby they will last a very long time. 5. That though burnt Umber is the best Colour to mix with it, yet you may mix other Colours therewith, in the same manner, as Verdigrise, Red Lead, &c. but these two last Colours some object against by reason of their corrodng quality. 6. Lastly, that the best way to lay this Vernish on, is to heat it hot before you Vernish therewith, for so it will stick the closer and firmer to the Wood.

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XI. **T**O make the best and strongest Glem, for gleming the Joints of Boards.

Take scummed milk, which has stood so long, that no more Cream will arise from it; scum it very clean, and set it over the Fire in a Leaden Pot, letting it boyl a little; and if any Cream arise, take it off: then put into it a sufficient quantity of Glem, cut into small bits, which will soon melt: boyl it to a good Body, that it may be neither too thick nor too thin, (for in this boyling lyes much of Art;) then take it from the Fire, and use it as you do other Glem.

Where note, 1. That this Glem binds beyond belief, and will not be subject to resolve with any ordinary moisture of the Weather; and the reason is, because the curdy part of the Milk, freed from its oyl, is joyned with the Glem. 2. That you take care that it burn not to the sides of the Pot, for then it will be deprived of its strength: to prevent which (both in its first making, and in your after melting of it) you had best both to make and melt it in Balneo Mariæ; so will you prevent burning, and by that means you may the more safely boyl it to what body you please, without danger of hurting the Glem.

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XII. *An exceeding strong and lasting Cement, to make a Dial plain on a Wall.*

Take Lime and Sand, which temper with a sufficient quantity of Linseed-Oyl: this spread upon the Wall will harden to the hardness of a Stone, and not decay in many Ages.

Where note, That this is the strongest and best Plaster for this purpose: but if you cannot get oyl, you may temper your Lime and Sand with scummed Milk, and this you will find to last six times as long as the common or ordinary Plaster made of Lime and Hair with Water.

L I B. V. C H A P. XXXIV.

After Sect. xii. Pag. 478.

The process of the said grand Elixir.

XIII. **T**AKE Mineral Q. S. three pounds; *viz.* made neither of Lead nor Tin: and cause an earthen Pot to be made, well burned the first time; glaze it all over, except the bottom, the which anoint with Hogs Grease, and it will not glaze. This is done that the Earth of the Q. S. may sink into the bottom of the Pot, which it would not do, being glazed, nor become Earth again. The Pot must be made a good foot long, of the fashion of an Urinal, with a Pipe in the midst of it.

XIV. The Furnace must be made on purpose, that the Pot may go in close to the sides of the Mouth of the Furnace Set on the Pot a good great Cap or Head with its Receiver, without luting of it: give

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give it a good Fire of Coals, till the Pot be all on Fire and very red; then take the Fire out quickly, and put in the Q. S. at the Pipe, and then with as much hast as you can, stop it close with Lute. Then will the Q. S. by the heat and force it finds, both break and work; a part thereof you shall see in the Water, as it were a few drops; and a part will stick to the bottom of the Pot in black Earth, and so let the Pot cool within the Furnace, as it is; then open it and you shall find the Q. S. in it all black, which you must take out and wash very clean and the Pot also.

XV. As for the Water which does distil out of it, put it aside, or cast it away; for it is nothing worth, because it is all flegm. Set the Pot into the Furnace again, and make it red hot; put in the Q. S. lute well the Pipe, and do as you did the first time: and do this so often, until the Mercury becomes no more black, which will be in ten or eleven times. Then take it out, and you shall find the Mercury to be without flegm, but joyned with Earth, of which two qualities it must be freed, being enemies to Nature: Thus the Q. S. will remain pure, in colour, Celestial like to Azure, which you may know by this sign, *viz.* Take a piece of Iron, heat it hot, and quench it in this Mercury, and it will become soft and white like Luna.

XVI. Then put the Mercury into a Retort of Glass, between two Cups, so that it touches neither bottom nor sides of the Cups, and make a good Fire under it, and lay Embers on the top, the better to keep the heat of the Fire; and in forty hours the Mercury will distil into a slimy Water, hanging

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hanging together, that it will neither wet your hands, nor any kind of thing but Metal only.

XVII. This is the true *Aqua Vita* of the Philosophers; the true Spirit so many have sought for; and which has been desired of all Wise Men, which is called the *Essence*, *Quintessence*, *Powers*, *Spirit*, *Substance*, *Water* and *Mixture of Mercury*, and by many other the like names, without strange things, and without offence to any Man. Save well this precious Liquor or Water, obscured by all Philosophers, for without it, you can do no good or perfect work: let all other things go, and keep this only: for any one that sees this Water, if he has any practice and knowledg, will hold to it, for it is precious and worth a treasure.

XVIII. Now resteth to make the *Soul*, which is the perfection of the *Red*, without which you can make neither Sol nor Luna which shall be pure and perfect: with this Spirit you may make things apparent and fair, yea most true and perfect: all Philosophers affirm that the *Soul* is the substance, which sustaineth and preserves the Body, making it perfect as long as it is in it.

XIX. Our Body then must have a *Soul*, otherwise it would neither move nor work; for which Reason you must consider and understand, that all Metals are compounded of Mercury and Sulphur, matter and form: Mercury is the matter, and Sulphur, is the form. According to the pureness of Mercury and Sulphur, such is the influence they assume. Thus Sol is ingendred of most pure fine Mercury, and a pure red Sulphur, by the influence of the Sun: and Luna is made of a pure fine Mercury and a pure white Sulphur by
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the influence of the Moon. Hence it is that Luna is more pure than the other fine Metals, which have need of cleansing: being cleansed, they need but only the pure Sulphur, with the help of Sol and Luna. Sulphur is the form of Sol and Luna, and the other Metals; their other parts are gross matters of Sulphur and Mercury.

XX. Husbandmen know many times more than we do: they when they reap their Corn growing on the Earth, gather it with the Straw and Ears. The Straw and Ears are the *matter*, but the Corn or Grain is the *Form* or *Soul*. But when they sow their Corn, then they sow not the *matter*, which is the Straw and Chaff; but the *Soul* or *Form*, which is the Corn. So, if we will reap Sol or Luna, we must use their *Form* or *Soul*, and not the matter.

XXI. The *Form* or *Soul* is made by Gods help after this manner. You must make a good Sublimate, that is seven times sublimed: the last time of the seven, you must sublime it with Cinnabar without Vitriol, and it will be a certain Quintessence of the Sulphur of that Antimony. When this is done, take of the finest Sol one ounce; or of the finest Luna as much: file it very fine; or else take leaf Gold or Silver: then take of the afore-said sublimate four ounces: sublime them together for the space of sixteen hours; then let it cool again, and mix them all together, and sublime again: do this four times; and the fourth time it will have a certain Rundle, like unto the matter of the White Rose, transparent and most clear as any orient Pearl, weighing about five ounces. The Sublimate will stick to the Brims and Sides of the Vessel; and in the bottom it will

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will be like good black Pitch, which is the corruption of Sol and Luna.

XXII. Take the Rundle aforesaid, and dissolve it in most strong distilled Vinegar (*i. e.* Spirit) two or three times, by putting it into an Urinal, and setting it in *B. M.* for the space of three days, every time pouring it into new Vinegar (*i. e.* Spirit) as at the first till it be quite dissolved: then distill it by a Filter, and save that which remains in the Pot, for it is good to whiten Brass. That which passed the Filter with the Vinegar, set upon hot Ashes, and evaporate the moisture and Spirit of Vinegar with a soft Fire, and set it in the Sun, and it will become most *white* like unto white Starch; or *red* if you work with Sol, which is the *Forme, Soul* or *Sulphur* of Luna and Sol, and will weigh a quarter of an ounce, rather more than less; save that well.

XXIII. Take in the name of God, an Urinal half a foot high; and take of the firm Body five ounces: of the Soul or Sulphur of Sol or Luna, a quarter of an ounce: and of the Spirit four ounces: put all of them into the Urinal; and put on its Head or Cover, with a Receiver well closed or luted. Distil the Water from it with a most soft Fire, and there will come off the first time almost three ounces: put the Water on again, without moving the Urinal, and distil it again, until no more Liquor will distil, which do six or seven times, and then every thing will be firm. Then set the same Urinal in Horse-Dung seven days, and by the vertue and subtlety of the heat, it will be converted into Water.

XXIV. Distil or filter this Water with stripes or shreds of Woollen Cloth: a gross part will remain

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main in the bottom, which is nothing worth: all that which is passed through the Filter congeal; which will be about four or five ounces; and save it. When you have congealed it three times, melt ten ounces of most fine Sol or Luna, and when it is red hot, put upon it four ounces (some says thirteen ounces) of this Medicine, and it will be all true and good Medicine. Likewise melt Borax and Wax, *ana* one ounce, to which put of the former Medicine one ounce: put all these upon Mercury, or any other Metal, three pound, and it will be most fine Sol or Luna, to all judgments and assays. Thus have I ended this Process, in which if you have any practice or judgment, and know how to follow the Work, you may finish or compleat it in forty days.

E R R A T A.

PAg. 6. lin. 21. for *Rice* read *Bice*. P.
101. l. 18. for *Cap. 6.* read *Cap. 4.*
What other Faults you meet with, correct
also with your Pen.

