

Blackness of the Cork proceeded from nothing else, but that it was steep'd in Sea-Water instead of fresh Water.

The Use of this is too well known to need any further Account of it, I shall only tell you it is of some small Use in Medicine, as to stop Bleeding, being reduced to Powder, or thrown into some astringent Liquor, or to hang about the Neck to dry up Milk in Nurses Breasts; and the same burn'd, and mix'd with a little fresh Butter and Sugar of Lead, is very proper for the Piles. The Spaniards burn Cork into an extraordinary Black, which is what we call *Spanish-Black*, and us'd for several Sorts of Work.

There are besides a great many Sorts of Barks, in which we have no Trade; as the Bark of the Root and Trunk of the Tree call'd *Macer*, the *Corn*, *Hivorabe*, and others, which we have but little of, and nevertheless are reckon'd good Medicines, as may be seen in *Coffus* and other Authors, who have wrote Histories of *Indian* Druggs, to which the Reader may have Recourse; but as many People make use of Mace in Bloody-Fluxes, some sell this Mace in the Room of that, believing it to be the same Thing, tho' there is a vast Difference, this being the Bark of a Tree, but Mace the Covering of the Nutmeg.

Suber Latifolium the broad-leav'd *Lemery*. Cork, according to *J. Baubin*,

Gerard and Parkinson, or the *Suber Latifolium perpetuo Virens* of *Tournefort*. The broad-leav'd Cork that is always green, is a Tree of a moderate Height, very much resembling the Oak, but the Trunk is thicker, bearing fewer Boughs, and the Bark is a great deal thicker, very light, spongy, of an ash Colour, tending towards a Yellow, which is taken from the Tree first, and afterwards freed from an inner Bark; the Leaves are like the Oak, but much larger and longer, softer, greener on the Outside, sometimes a little indented; the Cups and the Acrons are also like those of the Oak. This Tree grows in the hot Countries, as *Spain*, *Italy*, towards the *Pyrenees*, and in *Gascony*: That which grows in *Spain* is different from those that grow about the *Pyrenees*, and in *Gascony*, in that the Bark is black on the outward Surface, and the Leaves continue green all the Winter, whereas they fall from the others at the End of Autumn.

The Acorn of the Cork is astringent and proper in the Wind-Cholick; the Dose is from about a Scruple to a Dram; it contains a great deal of Oil and little Salt, but the Bark has less of the Salt and more of the Oil; it is deterfive and astringent; it stops the Hemorrhoids and Belly-Aches, being beat to Powder, it is proper to heal the Piles, being burn'd and applied outwardly.

BOOK the Fifth.

Of LEAVES.

THE Plants here to be treated of are only those whereof the Leaves are the most useful and essential Part, setting aside those Trees, or Shrubs, in which

the Branches, or Flowers, are the Parts for which they are chiefly considerable: Of this Class are Tobacco, Tea, Maiden-Hair, and such like.

R: Mill

i. Of

1. Of Dittany of Crete.

The Dittany of Crete, or *Candia*, *Pomet.* is a Plant of two or three Foot high, whose Leaves are of the Size and Shape of the Nail of a Man's Thumb, white and woolly without and within; after which rise long Flowers in Spikes, of a Violet Colour. This little Plant, which is very beautiful to look upon, grows plentifully in the Isle of *Candia*, from whence it takes its Name.

Chuse your Dittany fresh and new, with fine, white, large, thick, soft, woolly Leaves, of a sweet aromattick Taste, and prefer such as is furnish'd with the deepest blue Flowers you can get, and refuse such as has small Leaves, not hairy, and where you meet with it fuller of little Sticks than Leaves. This *Dittany* is of some little Use in Physick, because of its warm aromattick Quality, and is an Ingredient in the Treacle and some other Preparations.

Origanum Creticum latifolium to *Lemery.* *mentosum*, seu *Dictamnus Creticus* of *Tournefort*, is a Kind of *Origanum*, or a fine white Plant agreeable to the Eye, the Stalks grow about two Foot high, hairy, a little purplish, divided into Branches or Twigs; the Leaves are the Bigness of the Nail of the Thumb, roundish and pointed, by a small End, cover'd on both Sides with a white Down, odoriferous, and of an acrid pungent Taste: The Flowers grow Spike Fashion on the Top of the Branch of a purple Colour; when the Flower is gone there follows four Seeds that are almost round, enclos'd in a Covering that serves as a Cup to the Flower: The Roots are small and numerous; it grows in *Candia*, on Mount *Ida*, from whence it is brought dry. The Leaves are aperitive, cordial, proper to provoke the Terms in Women, to hasten Labour-Pains, to open and remove Obstructions, to resist Poison, and drive away malignant Humours by Transpiration. It is given in Powder for all the same Purposes. Dose to a Dram, and half an Ounce of the Decoction, or Tincture, in White-Wine, for Sickness at the Stomach.

2. Of Poley Mountain.

Poley Mountain, call'd *Polium Montanum*, is a Plant of the *Pomet.* Height of half a Foot, having small, thick ended Leaves, garnish'd above and below with a fine yellow Down, inclining to a gold Colour, and the Flowers around, which blow in little Stars, of a gold Colour, very fine to look upon. This little Plant grows plentifully upon the Mountains and high Hills about *Provence* and *Languedoc*; it is brought to us in little Bunches with that which grows in the Plains, or along the Lanes, chiefly in sandy and other dry Places, being, notwithstanding, very different from the other, in that the Leaves of this are much less, and more woolly, bitterer, and altogether white: They are used in several Compositions of Treacle, and are counted alexipharmack and cordial.

Polium Montanum, or *Poley Mountain*, is a Plant whereof there are *Lemery.* two Sorts, one Yellow and the other White. The First is call'd *Polium Montanum Luteum*, by *Tournefort*; or *Polium Montanum Vulgare*, by *Parkinson*. It is of a small Height, very hairy and woolly, bearing a great many slender, round, hard, woody Stalks; the Leaves are small, oblong, thick and indented; the Flowers, says Mr. *Tournefort*, are divided into five Leaves, as the *Germander* Flower; when that is dropp'd, small round Seeds follow, that are enclos'd in a Covering, which serves as a Cup to the Flower: This Plant grows on mountainous and rocky Places in *Languedoc*, *Provence* and *Dauphine*.

The second Sort is call'd *Polium Montanum Album*, by *Tournefort*, &c. and the *Poley Mountain* of *Montpellier*, by others. It differs from the Former, in that the Stalks lie upon the Ground; the Leaves are less, and not so full of Cotton; the Flowers are whiter, and less scented. This Plant grows not only on the Mountains and hilly Places, but likewise in the sandy dry Plains, by the Road Sides, in *Languedoc* and *Provence*. The Yellow is the best and most valued in Physick: This Plant yields a great deal of ex-
alted



Ditanny of Crete



Mountain Poloy Hair.



Marum.



The Indian Leaf.

alted Oil, and volatile Salt; the Tops are chiefly that which they call in Latin, *Coma Polii*, seu *Polium Comatum*, or *Poley-Hair*.

They are aperitive, cephalick, sudorifick, vulnerary, provoke Urine and the Terms, resist Putrefaction, fortifie the Brain, and expel malignant Vapours from the Head and Heart.

3. Marum, or Herb Mastick.

THE *Marum* is a little Plant that looks pretty to the Eye; the Leaves are greenish, and very small, of the Shape of Iron Spikes, the Taste very bitter and disagreeable, and therefore it is called *Marum quasi Amarum*, as being bitter. After the Leaves come Flowers in Spikes almost like those of Lavender, which are of a purple Colour, and strong scented.

This Plant grows plentifully in the Isles of *Hyeris*, near *Tboulon*, from whence those who cultivate it have it brought; chuse it fresh, odoriferous, furnish'd with Flowers, and as green as possible; it is little used in Physick, only in the Composition of some Troches, and the like: But as this Plant is scarce, the Apothecaries substitute *Amaracus*, which is what they call sweet *Marjoram*.

Marum is a Plant that has two Species; the First is call'd *Chamaedrys Maritima incana frutescens foliis lanceolatis*, according to *Tournefort*, which is the hoary Sea shrub by *Germander*, with Spear-pointed Leaves. It is a Sort of *Germander*, or a little Plant which grows like Thyme, with a great many Branches, or little round Twigs, woody and whitish, cover'd with Leaves larger than those of Garden-Thyme, and liker wild Thyme: The Flowers like those of *Germander*, of a purple Colour: When the Flower is gone it bears in its Place four Seeds that are almost round. The whole Plant has an odoriferous Smell, and a picquant biting Taste; it grows in the hot Countries, but is introduced now into most Gardens.

The second Kind is the *Marum Vulgare*, which is a Plant whose Stalks, Branches and Leaves, are like *Marjoram*, but something higher; for this grows near two or three Foot, being woody, and extending its

Branches large, it has some Resemblance to the first Sort of *Marum*, but a little larger, whiter, and of a bitter, smart Taste. The Flowers and Seeds are like those of Thyme; the Root is woody, and all the Plant of a strong Smell, that is aromattick and agreeable enough: The best is that which grows in *Spain* and other hot Countries, it requires a dry, stony Ground: Both Sorts abound with Plenty of Oil and volatile Salt, with a little Phlegm; the *Marum* is cephalick, stomachick, sudorifick, vulnerary and uterine, being good against all cold and moist Diseases of those Parts, Cramps, Convulsions, Burstings, Strangury, and the Bitings of Mad-Dogs, Serpents, or other venomous Beasts, being a famous Alexipharmack. It is likewise useful in all Manner of malignant and pestilential Fevers; Dose from a Dram to two Drams; the Herb is of the Nature of *Origanum* and sweet *Marjoram*, and has all their Vertues. The destill'd Oil may be given from two Drops to six, against cold Head-achs, Megrims, Vertigo's, Apoplexies, Lethargies, Palsies, Weakness of the Nerves, &c.

4. Of the Indian Leaf.

THE *Folium Indum*, *Thamalapatra*, *Malabatbrum*, or *Indian Leaf*, comes from a large Tree that commonly grows in the *East-Indies*, about *Cambaja*.

This Leaf was not unknown to the Antients, any more than many other Druggs, one having writ that it was found swimming upon several Lakes in the *Indies*; but the most rational Opinion is, that this Leaf comes from a Tree of the Size of the Lemon. After the Leaves, grow small Berries, very like those of Cinamon, except that they are less. We find Leaves underneath, where there is something in the Nature of a little Bladder, of the Bigness of a Pin's-Head, which some People will have to be the Seed.

I cannot understand for what Reason the Antients made use of this Leaf in the Composition of Treacle, since it is without Smell or Taste, notwithstanding, when it is fresh gather'd, it is said to have both; but I never could find that it had any sensible Quality

lity at all: Therefore, as I am not able to prevent the Use of it, or hinder its Sale, I shall direct you to chuse such as has the fairest Leaf, that is large, green, and as little broke as may be.

Folium Indum, seu Malabathrum, Lemery. or the Indian Leaf, is of the Size of one's Hand, like the Lemon-Leaf, of a pale Green, smooth, and shining, having three Nerves that run lengthways upon it: It grows upon a Tree that is found in *Cambaja*, from whence it is brought dry'd. Authors advise us to chuse the freshest, having a weak Smell, when bruis'd, like Cloves, and of an aromattick Taste; but none of the Leaves that are brought to us, have any-thing of these Virtues, but appear perfectly insipid and tasteless. By a Chymical Distillation, it affords an Oil and a flegmatick Spirit, which contains some little Salt in it. This Leaf is hot and dry, agreeing in Nature and Virtues, as some will have it, with *Spiknard*; or, as others, *Mace*: It is warming, digesting, and strengthening; comforts a cold Stomach, and helps Digestion. The Powder of the same is diuretick, stomachick, alexipharmack, and an Antidote against the Plague. Dose, from half a Dram to a Dram. A Tincture of it in Wine or Brandy, causes a sweet Breath; bathed on the Eye-lids, it strengthens the Eyes, stops the Rheum, and abates the Inflammation.

5. Of Tea.

Pomet. THE Tea which the People of *China* and *Japan* call *Cha* or *Tcha*, is the Leaf of a little Shrub, which grows plentifully about *Pekin* and *Nankin* in *China*, and in several Parts of *Japan*, which is reckon'd the best, and, from its excellent Qualities, is call'd the Flower of *Cha* or *Thee*. It is a slender, green Leaf, pointed at one End, and divided at the other, and a little cut or indented round about; and in the Middle of each Leaf, there runs a Filament or String, from whence proceed a Number of little Fibres. In a Word, it is of the Shape of the Figure represented in the Plate, which was taken from the Life. After the Leaves, grow several Cods, which are each of the Size of one's Finger's End, of

a very particular Shape, like the *Arca*; in each of which, is found two or three Berries, of a Mouse-colour'd Grey without, and within having a white Kernel, very subject to be worm-eaten.

The *Japan Tea* differs not from that of *China*, but only as the Leaves are much smaller, and the Taste and Smell more agreeable; it is usually of a finer clear Green. This Variety of Smell, Taste, and Colour, has rais'd the Price; so that the *Japan Tea*, as describ'd before, which is the true Sort, of the fine Violet Flavour, will sell for a Hundred and Fifty, and Two Hundred Livres a Pound, which is betwixt Twelve and Fifteen Pounds Sterling.

The Tea which the *Dutch*, *English*, and other Nations bring us, is in little curl'd or twist'd Leaves, as it is now sold among us, and is thus prepar'd by the Natives of the Country; who, after they have gather'd it, dry it gently before the Fire, and the Leaves, in drying, curl up just as we now see them: And that the Buyer may not be impos'd upon in this Commodity, which always bears a considerable Price, let him chuse that which is the greenest, the best scented, and which is as little broke into Dust or small Powder as possible, and to prefer such, as I have observ'd, that comes from *Japan*, before that of *China*.

The Tea is so much in Vogue with the *Eastern* People, that there are very few who do not drink it; and the *French*, some Years ago, had it in universal Esteem; but since *Coffee* and *Chocolate* have been introduc'd into that Country, there is nothing near the Quantities us'd as were before. I shall say nothing of its Virtues, but refer you to such Authors as have treated particularly of it, especially the *Sieurs de Four* and *de Blegny*.

I cannot pass over this Article, without saying something of the Flower of *Tea*, which is what the Person who gave me the Leaves, made me at the same Time a Present of, and which is entirely different from the common *Tea*, in that it is of a blackish brown Colour, and more of the Shape of a Flower than a Leaf; and, whether this be a Leaf or a Flower, it is so valu'd by the *Dutch*, that they sell it Weight for Weight with Gold, which is about Four Pound an Ounce, as well by reason of the small Quantity they get of



6



6



of it, as from its agreeable Smell and Taste, above all, when it is new; so that it abundantly excels the true *Japan Tea*.

The chief Reason that this is become such a Commodity throughout all *Europe*, is because the *Dutch*, &c. change it for *Sage*, which the *Japanese* and *Chinese* are great Lovers of; which is not without Probability, since we have not a Plant that is endow'd with more Virtues than *Sage*, especially that Sort, which, for its singular Goodness, is call'd *Sage of Virtue* among us, and is the same with the *French Sage*, or that of *Guernsey* and *Fersey*; and it is certain, that if it grew in *India*, it wou'd be much more valu'd; but because it is common, we make no Account of it, notwithstanding the *Latin Proverb*, *Cur morietur homo cum crescit salvia in horto*? Why will anybody die that has *Sage* in his Garden? So that we need not wonder if the *Chinese*, &c. exchange *Tea* for it.

I have thought it proper, in this Place, to refute the Error into which the Author of one of those Treatises, I have mention'd before, has fallen, when he says that this *Tea* produces a blackish Seed, which he saw brought into *France*, and was preserv'd with all the Care imaginable. But this Author was wrong inform'd, since the Fruit, or rather Berry of the *Tea*, as I have said before, is of the Shape of the *Areca*, and the Size of an Acorn cut in two, and is cover'd trebly with a thin Shell, of a Chestnut Colour. This Author observes, that there is a Febrifick Syrup made of *Tea*, to which he attributes great Virtues, which those that desire to know farther of, may consult his Treatise for.

The, or *Tsia*, is a very little Leaf, *Lemery*. which is brought dry'd from *China*,

Japan, and *Siam*: It grows upon a small Shrub, from whence it is gather'd in the Spring, at which Time it is little and tender: The Figure or Shape of it is oblong, pointed, thin, a little indented on the Sides, of a green Colour: The Flower is compos'd of five white Leaves, form'd like a Rose, and some *Stamina*; which, when gone, is succeeded by a thick Cod, like a Hazle-Nut, of a Chestnut Colour, in which is found two or three Nuts or Berries, which contain in each a little luscious Almond, of an ill Taste. The Root is fibrous, and spreads upon the Surface of the Earth. This Shrub flourishes

equally in rich or poor Ground. The Leaf is more us'd for Pleasure in the Liquor we call *Tea*, than for any Medicinal Purpose; but it has a great many good Qualities, for it lightens and refreshes the Spirits, suppresses Vapours, prevents and drives away Drownings, strengthens the Brain and Heart, hastens Digestion, provokes Urine, cleanses or purifies the Blood, and is proper against the Scurvy.

6. Of *Sena*.

THE *Sena*, which some call the *Eastern Leaf*, comes from a *Pomet*. Plant, or rather a Shrub, of about a Foot high, which grows in several Parts of the *Levant*, and other Places in *Europe*. This Plant, or Shrub, bears Leaves which are more or less green, and of different Shapes, according to the different Places where they grow. After the Leaves, come little Flowers, of a purple Colour, in Form of Stars; and after them, thin flat Pods, in which are contain'd five or six small Seeds, likewise flat, and broad at one End, and sharp at the other; and these Pods are what we call *Sena Husks*.

As *Sena* is a Leaf that is very common among us, from the great Sale of that Commodity, I must inform you there are three Sorts that are brought to the Market, which we distinguish into *Alexandrian Sena*, *Tripoly Sena*, and *Moca Sena*; and under these three Kinds there are several Sorts, which have no other Difference than from the Places where they are cultivated, tho' the same Species may have a Variety in the Leaves, Flowers, and Fruit, from the Nature of the Soil where it is cultivated: Likewise the finest Sort, and best in Quality, is the *Sena* that comes from the *Levant*, which pays a Tribute to the Grand Seigneur, which the *Turks* call *Palte*.

Chuse this *Sena* with narrow Leaves, of a moderate Size, of the Shape of a Spear Point, yellowish colour'd, of a strong fragrant Smell, in a manner sweet, the least broke, full of Sticks or dead Leaves, or any other Filth that may be. This Description of *Sena*, will undoubtedly appear ridiculous to some People who have no great Knowledge of it, who will have it, that the best

Sena

Sena has great, broad, green Leaves: But I am satisfy'd that no-body that understands *Sena*, will contradict what I say, and the rather, because I must be allow'd to be a Judge of it, from the vast Quantities of this Drugg that have pass'd thro' my Hands; besides, I have by me the entire Plant, from whence the Figure is engrav'd, as it was brought to me from *Aleppo*. The Use of *Sena* is so common, it wou'd be needless for me to say any more, than that it is a very good Purgative.

The second Sort of *Sena*, is that of *Tripoly*, which is a green *Sena* sold sometimes, but very rarely: It comes next in Virtue to the *Alexandrian*, but is usually more churlish, and has very little Smell; notwithstanding which, it is bought up by those who understand little of it.

The third Sort, is the *Moca Sena*, which the Hawkers call *Spike Sena*, because the Leaves are long and narrow, that is to say, one Half longer than the true *Sena* from the *Levant*. The ill Quality of this *Sena* is sufficient to warn you against the meddling with it at all; for as it is good for nothing, you ought to have nothing to do with it.

As to the *Folliculi*, or *Sena Shells*, their Excellency obliges the Physician to prescribe them more frequently, because they purge very gently, and scarce give any Taste or Smell to the Medicine; otherwise than the Leaf, which gives so bad a Taste, that most People refuse to take that Physick, because of the Offensiveness of *Sena*. Chuse these Shells thick, large, and of a greenish Colour, so that the Seed which is within, be plump, well fed, and almost like the Stones of Raisins, only that these are flat. Throw such away as are blackish and dry'd, and not fit for internal Use. You may make an Extract of *Sena*, by means of Fire and Water, and also a Salt, to which some People assign great Virtues, and pretend, by this way, to make Infusions of *Sena* of greater Force and Efficacy. Some Authors have writ, that there is Plenty of *Sena* to be found in *Italy*, especially in *Tuscany*, and about *Genoa*; but I believe that these Kinds of *Sena* are rather the Leaves of that Plant which the Botanists call *Colutea*, or, improperly, the wild or bastard *Sena*; an Account of which, may be seen at large in Botanick Authors.

There is a Plant found in *France*, which

the Botanists call *Gratiola*, or the Grace of God, which purges more than *Sena*. There is, besides, another Plant, which the Simplers call *Alypon montis Ceti*, because it is found plentifully at *Cette* near *Montpellier*, which purges more than *Sena*: Some call this *Alypon*, White Turbith.

Senna, Folium Orientale, or *Sena*, is a little longish Leaf, which is brought dry'd from several Parts of *Europe*: It grows on a small Shrub, and is of two Kinds; the first is call'd *Senna Alexandrina*, *sive foliis acutis*, the *Alexandrian Sena*, or that with sharp-pointed Leaves, by *Baubine* and *Tournefort*; it carries its woody Stalks a Foot and half or two Foot high; from whence comes Leaves that are oblong and narrow, pointed, of a yellowish Green. The Flowers are made up of five Leaves each; after which come flat crooked Pods, which some call *Sena Pods*.

The second Sort is call'd *Senna Italica*, *sive foliis obtusis*, by *Baubine* and *Tournefort*, or *Italian Sena* with blunt Leaves. It differs from the former, in that the Leaves are larger, more nervous, broad, and blunter at the End. We are furnish'd by the Merchants with three Sorts of *Sena*; the first and second of which are call'd the *Levant Sena*, and the last *Moca Sena*, as *Pomet* has describ'd them. The Leaves and Pods of all the Sorts afford a good deal of Oil and Salt.

Other Accounts of *Sena*, distinguish it into True and Bastard. The True has three Sorts of it; first, the *Alexandrian*, with sharp-pointed long Leaves, fresh Smell, good Scent, free from Stalks, smaller or narrower than the other Kinds, of a lively Colour. This is the best of all. 2dly, That of *Aleppo*, which is generally fuller of Stalks and Dust, and has a shorter and blunter Leaf, than the former. Chuse that which has a good strong Smell, of a pale Green Colour, well cleans'd, and not musty. This is next in Goodness to the former. 3dly, The *Indian Sena*, which is much like that of *Aleppo* in Form, is the courtest Sort of all, and the worst, and becomes something worse and weaker by reason of its long Carriage from the *Indies* hither, being often heated in the Hold of the Ship, where it is spoil'd. The *Bastard Sena*, is the *Colutea*, or *Wild Sena*, spoke of before.

The



Book 5.
of Leaves.

7



The white Maidenhair of Canada



Ceterach of Shops.



Polipodi



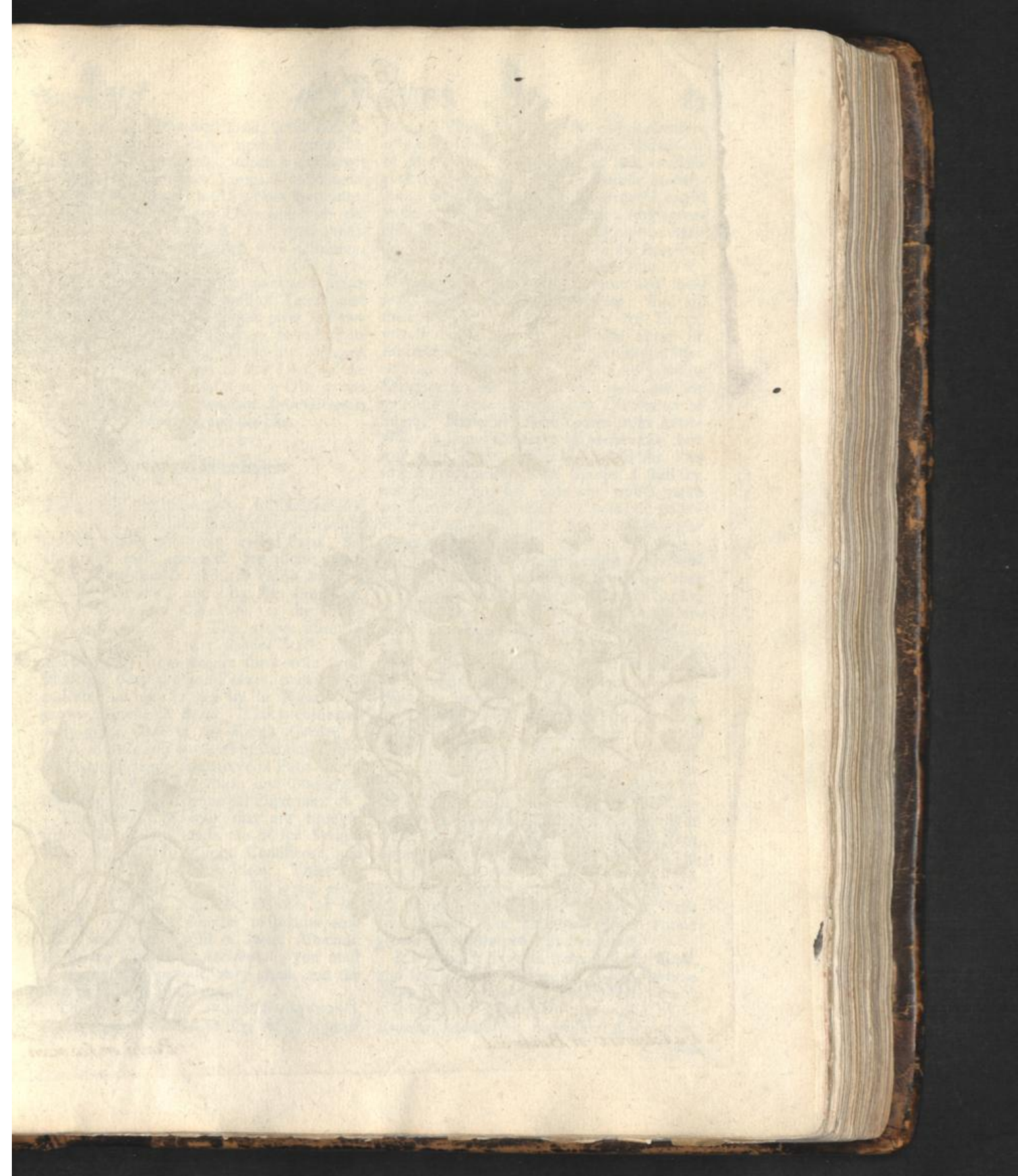
Salvia Vitæ or Wall Rue.



Scolopendrium.



Maidenhair of Montpellier.



7



Golden Maidenhair.



Common Maidenhair.

8



Sea Clewrt or Bindweed.



Pinla or Sea green.

The Leaf of the best *Sena*, is the most famous and common Purge against ferous Humours and Melancholy, which it discharges from the Head, Stomach, Lungs, Liver, Spleen, Womb, and Joints; but it gripes sometimes, by reason of the sharp Humours from the Body that joins with it, and upon which they act. It is corrected with Cinamon, Cloves, Galingal, Ginger, &c. It is a general Purger, and may be quicken'd in its Operation by *Sal Gem*, Salt of Tartar, and Tartar Vitriolate: It is seldom given in Powder, but in Infusion or Tincture, from half an Ounce to two Ounces. There are eighteen or twenty Preparations of this Leaf, in the most common Dispensatories, in Use, as the *Extract Benedictum*, *Decoctum Senae Gereonis*, *Quercetan's*, *Cathartick*, and the like.

7. Of Maiden-hairs.

Pomet. THE *Capillaries*, or *Maiden-hairs*, are little Plants that are brought entirely whole to us from several Parts; the chief and most esteem'd, are those which come from *Canada*, and are call'd *Maiden-hair of Canada*, and, by the Botanists, *Adiantum album Canadense*, or the *White Canada Maiden-hair*. This grows about a Foot high, with a very slender Stalk, hard and blackish; from whence there arise small Branches, bearing green Leaves, pretty deep ended, as may be seen by the Figure: It grows likewise in *Brasil*. This is cultivated with great Care in the King's Garden at *Paris*, as well as other Sorts of Exotick Plants, which are brought from several Parts of the World, by *Messieurs Fagon* and *Tournefort*, the King of *France's* principal Physicians.

The other *Capillaries* that are brought from *Canada*, are made use of for Syrups, which are boil'd to a good Consistence, and have *Ambergriſe* added to them. There are many Virtues attributed to this Syrup, especially for Coughs, Catarrhs, Diseases of the Breast, and to administer to Infants new born, with a little Oil of Sweet Almonds. As to the Choice of *Maiden-hair*, you must take such as is newest, very green, and the least broke that you can get.

Other *Maiden-hairs*, and the Syrup thereof, are brought from *Montpellier*, which is made

from a Plant the Botanists call *Adiantum album Monspeliense*, or the *White Maiden-hair of Montpellier*. The Syrup of this, is different from that made of the *Canada Maiden-hair*; which, when faithfully prepar'd, ought to be of an Amber-Colour, and a very agreeable Taste. There are other Syrups of *Maiden-hair*, and the like, prepar'd in the Southern Parts, as of *Black Maiden-hair*, *Venus Hair*, *Scolopendrium*, and *Ceterach*; some add *Poly-pody*, *Salvia vite*, and *Liquorice*: And all these Plants together make a red Syrup, which they sell as well as the Syrup of *Maiden-hair*. Some Apothecaries distill a Water from the *Maiden-hairs*, and make a white Syrup of it; which sells very well, but has no more Virtue than a plain Dissolution of Sugar. Sometimes there comes from *Montpellier*, a liquid Conserve of *Maiden-hair*, but it is very scarce, and little enquir'd for. As to the Preparations of the Syrups, I shall say nothing further, but those who wou'd make the Syrup of *Maiden-hair of Canada* or *Montpellier*, may consult such Books or Dispensatories as treat of them.

Adiantum, or the true *Maiden-hair*. *Lemery.* Hair of the Shops is a Plant that bears several slender, blackish Stalks, of about half a Foot, or a Foot high, divided into fine delicate Branches, which are adorn'd with little Leaves, like those of *Coriander*, almost triangular, fragrant, and of an agreeable Taste: This Plant bears no Flowers; its Fruit, according to *Mr. Tournefort's* Observations, is produced in a Folding of the End of one of the Leaves; which after it is stretch'd out, it encloses several spherical Coverings which are caked to the said Foldings, and cannot be discover'd but by the Assistance of a Microscope: These *Capsule*, or Coverings, are furnish'd with, as it were, a Purse-String, which by its Contraction opens it; they contain some little Seeds in 'em that are almost round: The Root is fibrous and black; it grows in shady, moist, or stony Places, against Walls, or Sides of Wells and Ditches: The Best they have in *France* grows about *Montpellier* in *Languedoc*.

It is brought likewise from *Canada*, *Brasil*, and several other Parts of *America*, where there is a Sort of the dried *Maiden-Hair*, a great deal larger then ours, call'd by *C. Baubine*, *Adiantum fruticosum Brasiliannum*,

and

and is the same with the Maiden-Hair of *Canada*: The Stalk is slender, hard, and of a brownish red, or purple Colour, tending to black, divided into many Branches, which bear little Leaves, almost like the common Sort, long, and indented on one Side, but whole on the other, soft, tender and fragrant; this is what is most valued, as being the best scented of all the Maiden-Hairs. It is common in several Parts of *America*, and especially in *Canada*; so that the Traders pack up their Goods with it instead of Hay, when they wou'd send it to a distant Country; 'tis by this Means we have such Quantities of it; but it wou'd be much better if they wou'd pack it up in Papers, or Bags, that wou'd preserve the Scent and Virtue of it: Chuse such as is fresh, green, well scented, whole and soft to the Touch. This Plant contains little Phlegm, a good deal of Oil, but not much Salt; they are pectoral, aperitive, and raise the Spittle, sweeten the Blood, and provoke Womens Courses. They give the Name of Maiden-Hair to four other Kinds of Plants, which in some Measure resemble the *Adiantum*, and to which they attribute the like Vertues, viz. *Filicula*, *Ceterach*, Wall-Rue, and *Polytrichum aureum*, or Golden Maiden-Hair.

Adiantum Aureum Minus, and *Polytrichum Nobile*, vel *Primum*. This is a little Plant about the Length of a Man's Finger, bearing many Leaves, on Stalks almost as fine as Hair, of a yellowish Colour; the Stalks bear on their Tops little longish Heads, the Roots are very little like small Threads: This Plant grows in the Woods, and against old Walls, Bogs and marshy Places; is a good Sudorifick and Antipleuritic, being infus'd half a Handful in a Pint of boiling Water, as you make Tea, and use it after the same Manner.

Polytrichum Vulgare, or the *Polytrichum* of the Shops, Mr. *Tournefort* has discover'd with his Microscope, that this Plant, as well as the *Adiantum*, bears a little Seed, roul'd up in the End of the Leaf, which is very small, and almost round, cover'd on the Ribs with a great many light Particles like Dust; the Roots are very small and stringy; it grows like the other Sort, and is reckon'd a good Pectoral, Aperitive, and proper for Obstructions of the Liver and Spleen, and in Womens Cafes.

Ceterach of the Shops, or the true *Scolopendrium*, is a Kind of Maiden-Hair, or a Plant whose Leaves resemble, in some Manner, Polypody, but they are much less, cut in almost round; their Back Parts are reddish, or yellow, hairy, and cover'd with a little scaly Matter: Mr. *Tournefort* has made a Discovery of a Seed, or Berry, in this Plant, unknown before: This grows in wild Places in the hot Countries; and those of *Languedoc* call it, usually, *Goldy-Locks*, because of its near Approach to Hair and its golden Colour: It is Pectoral, and particularly appropriated to the Diseases of the Spleen, and is a good Aperitive.

8. Of Sea-Colewort or Sea-Bindweed.

Soldanella, or *Convolvulus Maritimus* *Pomet.*
mus Nostras of Mr. *Tournefort*:

The Sea Bindweed is a small Plant, whose Roots are slender, and the Leaves like those of the *Aristolochia* or Birthwort, except that they are less and something thicker; after which grow Flowers, very much resembling those of the common Bindweed, of a purple Colour. This Plant is brought to us entire from maritime Parts, where it grows in Abundance; 'tis of very little Use in Medicine, tho' very good to purge off dropical Humours; upon which Account M. *Brice Bauderon* mixes it very properly in hydragogick Powders: You need take no further Care about the Choice of it only that it be new, and as little broke as possible. There is another Sort of *Soldanella* we sell, and call *Pyrola*, Sea-Green, or Winter-Green.

The *Pyrola* so call'd, because the Leaves something resemble those of the Pear-Tree, from whence it takes its Name, and Winter-Green, because it preserves its Verdure all Winter, in Spite of the hard Season; is a Plant pretty common in some Places, as *Germany* and other cold Countries. And as this Plant is something scarce in these Parts, our Herbarists sell to those who fancy this, the common Pear-Seed, and sometimes the young Pear-Leaves for those of the *Pyrola*, which is not easie to detect, because of the great Likeness, betwixt the One and the Other: 'Tis pretended the Decoction of this is a very great Astringent, and that it is very proper
for

for the Cure of Ulcers, and other Maladies of the like Nature.

The *Pyrola* bears several little Stalks, at the End of each of which is a small roundish Leaf of a brownish Green; from the Middle of the Leaves arises a Stem, whose Top is adorn'd with many little white Flowers, of a very good Smell, and the whole Plant is not above a Foot, or a Foot and an Half high; it delights much in the Northern Countries, which makes it very rare in France and other warm Climates.

Soldanella, *Brassica Marina*, *Sea Lemery*. *Colewort*, or *Convolvulus Maritimus nostras*, according to *Tournefort*, *Sea Bindweed*; is a Species of *Bindweed*, or a small Plant that sends forth slender, winding, reddish Stalks, that creep upon the Ground; the Leaves are almost round, smooth, shining, like those of the lesser *Celandine*, but thicker, full of a milky Juice, tied together by long Tails; the Flowers are in Form of a Bell, with the Mouth turn'd upwards, as other Kinds of *Bindweed*, and of a purple Colour: When these are gone, they are succeeded by Fruit that is almost round and membranous, which contain a corner'd Seed, black or white; the Roots are small and fibrous: The whole Plant has a bitter Taste, and is a little salish; it grows near the Sea-Side, and flowers in Summer. They dry it entire with the Root, and so it is transported: Chuse such as is fresh or new, as little broke as may be; it yields a great deal of essential Salt and Oil, purges violently, and is used in Dropsies, Palsies, Diseases of the Spleen, Scurvy and Rheumatism: The Dose is from a Scruple to a Dram.

Pyrola, *Winter-Green*, or *Sea-Green*, is a Plant of which there are several Kinds; I shall only take Notice of Two that have some Use in Physick: The First is call'd *Pyrola nostras vulgaris*, by *Parkinson*, or *Pyrola rotundifolia major*, by *Tournefort*, the greater round-leav'd *Winter-Green*: It bears from the Root five or six Leaves, supported each by a long separate Foot-Stalk, by which they trail upon the Ground; from among these rises an angular Stem, about a Foot high, furnish'd with several little pointed Leaves, which bears on the Top sweet-scented Flowers that are very beautiful to the Eye, compos'd each of many Leaves, in the Shape of

a Rose, of a white Colour, having something rising in the Middle that resembles an Elephant's Snout, which after the Flower is gone becomes an angular Fruit, divided into five Cells, fill'd with a Seed that is as small as Dust; the Root is thin, fibrous and winding, all the Plant of a bitter Taste, and very astringent.

The second Sort is call'd *Pyrola Minima*, or *Pyrola rotundifolia minor*, by *Tournefort*, the lesser round-leav'd *Winter-Green*: It differs not from the Former, but only as it is less in all its Parts. These Plants grow in mountainous Places, in Woods and Shades about *Geneva*, in *Germany*, *Bohemia*, *Moravia*, and other Northern Countries, from whence the dried Leaves are brought, but they are very scarce at *Paris*: Take Care lest the Merchant, too greedy of Gain, mix young *Pear-Tree-Leaves* with them, which it is not easie to distinguish: They are both very astringent, vulnerary, cooling, proper in Fluxes of the lower Belly, Hemorrhoids, and Inflammations of the Breast, being taken in Infusion or Powder; they are likewise used externally in Plaisters and Oynments, to stop Blood, and to dry up Wounds.

9. Of Anil, whereof Indigo is made.

THE *Indigo* Plant grows about two Foot high, with round *Pome.* Leaves, of a Green, inclining towards Brown on the Out-side of the Leaf, and Silver-colour'd underneath, pretty thick; after which come Flowers, almost like those of Pease, of a reddish Colour, from whence come long, crooked Pods, resembling a Sickle, or Hook, which enclose a little Seed in them, like the Radish-Seed, of an olive Colour.

When the *Americans* sow this Plant they first dress the Ground, and afterwards make Holes in it about a Foot distance one from another, and into each Hole they throw ten or twelve Grains of the Seed which they cover lightly with Earth, and in three or four Days time this little Seed will be sure to appear, especially in a wet Season; and in two Months, or six Weeks, sometimes this Plant will be ready to cut and make *Indigo* of, as the Sequel will show; and if it is left in the Ground three Months, it will yield both

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the Flower and Seed; but what they fear most, upon Account of this Plant, is a Kind of Caterpillar, which in *St. Christophers* they find sometimes to breed in a Night, and ruine all the promising Hopes of the Inhabitants: The Way they have to remedy this is, immediately to cut down all the Plant, and throw it into the Fat or Tub, with the Caterpillars and all, which yet proves of little or no Use: The other Way to remedy this Misfortune, is to clear a large Space betwixt what they have eat, and what they have not touch'd; this Havock, nevertheless, is not made in *Martinico*.

Indigo is a Meal or Flower made by Means of Water and Oil-Olive, out of the Leaves of the *Anil* or *Indigo*-Plant; for there is a Difference betwixt that made of the Leaves, and of the small Branches. The choicest of the former Sort is that which bears the Sur-Name of *Serquisse* from a Village of that Name, which is twenty-four Leagues from *Surat*, and near *Amadabat*. It is made likewise about *Biana* of *Indoua*, and *Cossa* near *Agra*, also in the Kingdom of *Golconda*; the *Dutch* bring it from *Brampour* and *Bengal*, but that is the least valuable of all.

When the Inhabitants of the Places above-nam'd wou'd make the Flower or Meal of *Anil*, in order to make *Indigo* of it; they cut the said Herb with a Sickle, when the Leaves begin to fall upon touching them; and after they have stript them from the Branches, they put 'em into a sufficient Quantity of Water, which is in a Vessel call'd the steeping Fat, there letting them infuse thirty-six Hours; after which they turn the Cock, in order to let the Water run off, which is ting'd of a green Colour, inclining towards blue, into a Vessel of the Nature of a *Churn*, which is work'd by the Labour of several Men, by Means of a Rouller, or Turner of Wood; the Ends of which run pointed, and are hoop'd with Iron; this they work 'till the said Water abounds with a Lather, then they cast into it a little Oil-Olive; to wit, one Pound into such a Quantity of the Liquor as will yield seventy Pounds of *Indigo*, which is the Quantity now sold in one Barrel; and as soon as the said Oil is thrown in, the Lather separates into two Parts, so that you may observe a Quantity curdled, as Milk is when ready to break; then they

cease churning, and let it stand to settle; which when it has done some time, they open the Pipe or Cock of the Churn, in order to let the Water clear off, that the Meal which is subsided may remain behind, at the Bottom of the Vessel, like Clay or Lees of Wine: Having decanted it thus, they put it into straining Bags of Linnen, to separate what Water was left, then they convey it into Chests or Boxes that are shallow, to dry it; and being dried, it is what we call *Indigo*, and that Name is given to this, in all Appearance, because it comes from *India*. Sometimes the *Indians* make their *Indigo* in a Sort of Ponds, made in Form of a Basin, which they prepare with Lime, that becomes of an equal Hardness almost to Marble.

We have no Sort of Commodity lyable to more various Ways of being sophisticated, or counterfeited, than *Indigo*, when it bears a good Price, which if I shou'd attempt to relate, it wou'd make a small Volume of it self; but I do not think it necessary, since it is easie to distinguish that that is good from the Bad, by what I shall tell you.

We have another Sort of this *Indigo*, call'd *Agra Indigo*, which is almost as good as the *Sequisse*; but as the Form does not fit, or recommend it to all the World, it is only in Use with the Dyers: There come to us, beside this, several other Sorts of *Indigo*, which have no other Difference, than as to the Places where they are made, and according to the different Seasons and Age of the Herb from which they come; for the *Indigo*, made of the Plant of the first Gathering is better than that of the Second, and the Second better than the Third; and the younger the Leaf is which is used, the finer the *Indigo* is, being of a more lively, shining, violet Colour.

The Use of the *Indigo* is for the Dyers and the Whiteners, serving the Last to put among their Linnen to whiten it: The Painters use it to grind with White, for painting in Blue; for if it is us'd alone, and neat, it turns Black, and ground with Yellow it makes a Green. Some Confectioners and Apothecaries very proposterously employ this to colour Sugars to make Conferences with, and Syrup of Violets, by adding some Or- rice, which they sell at an under Rate, and cheat honest People.





The Negroes cutting y^e Indigo.

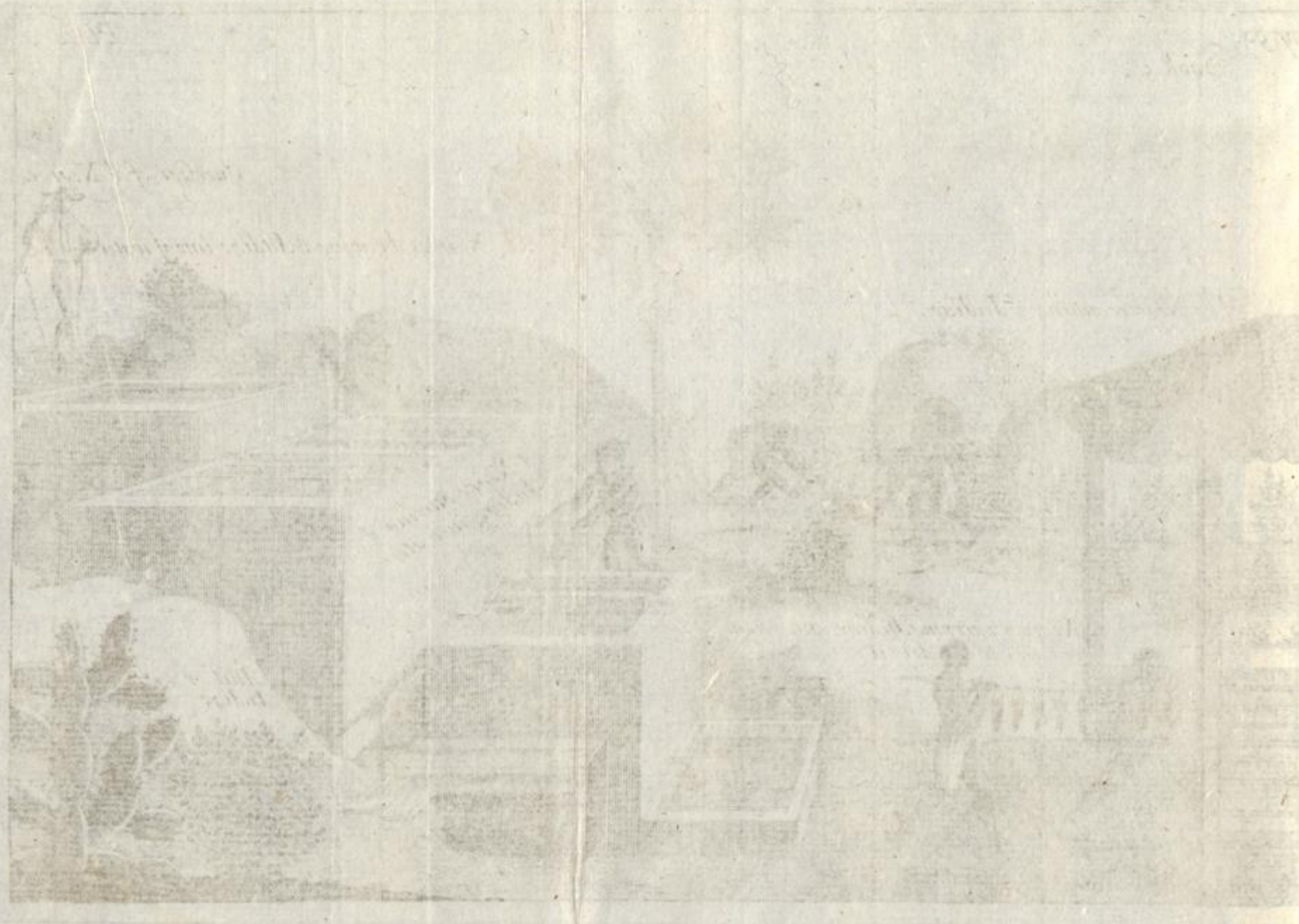
Negroes carrying Indigo into Chests or Cases to dry it.

The Negroes throwing y^e Indigo into y^e water.

A Negro stirring y^e Indigo in water.

Overseer of y^e Negroes

Anil or Indigo.



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 cheat honest People,





Woad or dyers-herb.



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Woad.



Woad.



Curriers Sumach.



13

Turnsole.

10. Of the other Sort of Indigo.

THIS *Indigo* is also the Meal, or Flower, made from the *Anil*, which differs not from the Former, but as it is made of the whole Plant, Stalk and Leaf; the Best of which Kind is that which bears the Name of *Gatimalo*, which comes from the *East-Indies*, and whose Excellencies are discover'd in its being lighter, less hard, and in boiling, that it swims upon the Water.

The second Sort of this *Indigo* is that of *St. Domingo*, which differs not from the *Gatimalo*, only that it is not of so lively a Colour. The Third is the *Jamaica* *Indigo* that is brought to *England*. The Fourth is that of the *Leeward Isles*, and all the Sorts, which are better or worse, according as they are more or less neat and pure; for those who make this mix it maliciously, sometimes with Sand and Dirt; but the Cheat is easie to discover, in that the *Indigo* which is fine and neat, will burn like Wax; and when the *Indigo* is burnt, the Earth or Sand will be left behind. *M. Tavernier* observes in his Book, Page 242, that the *Indigo* Dust is so subtil, and so penetrating, that those who sift it are oblig'd to have their Face covered, and drink Whey very often; and to confirm this, and make good the Penetration of the *Indigo*-Powder, he says, having put several times an Egg, in the Morning, near the Sisters of *Indigo*, and at Night breaking it, the Inside shou'd be all stain'd thro' with a blue Colour; this is us'd only by the Dyers.

Anil, Gali, sive Nil, herba rosifmarini facie, or *Indigo*-Herb resembling *Rosmary*, is a Plant of *Brazil*, about two Foot high, the Leaves round and pretty thick; the Flowers are like those of *Pease*, reddish, and succeeded by long crooked Pods, containing in them Seeds like *Radish*-Seed, of an olive Colour; all the Plant has a bitter piquant Taste; of this they make *Indigo* [as describ'd by *Pomet* before]. The Leaf is reckon'd to be vulnerary, and proper to deterge and cleanse old Ulcers, being applied to the Part in Powder; likewise there may be a Frontal made of it to affwage and abate Pains in the Head.

The *Indicum*, so call'd, because this is pre-

pared only in the *East-Indies*, is a blue Flower, or Meal, brought from thence, made only of the Leaves of the *Anil*, by the Means of Water, and a little oil Olive, [as taught before;] there are several Kinds of it, but the Best is that of *Serquisse*, call'd so from a Village of that Name, where it is made: The next is that of *Agra*, made in Shape of a *Chestnut*, from whence it is called so.

There is a Meal made of *Anil*, that is only distinguished from the *Indicum* spoke of before, as being made out of the entire Plant; chuse such of this as is the lightest, neat and clean, moderately hard, and of a fine bright Colour, and that will swim upon the Water, and flame in the Fire 'till it is almost all consumed.

11. Of Woad or Dyers Herb, &c.

THERE is cultivated in *France*, especially near *Tholonse*, a Plant *Pomet*, which is call'd, in Latin, *Isatis*, or *Woad*; and by the *French*, *Pastel*, *Gresde* and *Sereob*; they make a Merchandize of this Plant, which bears some Resemblance or Affinity to *Indigo*, not with Regard to the Plant from which 'tis taken, but as it is made from the Leaves prepared into that which is call'd *Pastel*, as the *Indigo* is made from *Anil*.

This *Pastel*, or first Kind of *Woad*, is very heavy and like unto Earth when fit for the Dyers Use: For making of it, the young Leaves are cut at the End of *February*, or at the Beginning of *March*, and then put into Places to heat and rot, or to consume 'em away, by moistening them with Water, and stirring them twice a Week, and when the Herb is reduced in a Manner to Earth, and is become dryed; it is dispos'd, or rang'd along with Leaves of the same Plant from whence it was taken; and after having prepared it in the like Manner again, it is repeated by mixing, as the first Time: So that from the End of *February*, to that of *September*, they cut the *Woad* four times, which makes it appear in that Nature, and fills it so with Dirt; for the *Pastel*, made of the first Cutting, is much more efficacious than that cut in *September*; as well because it is mixed, as that the Leaves are much harder, and fuller

ler of Sand and Gravel, occasion'd by the Winds and Rain which last during that Season.

The Dyers that spend this Commodity, dry the Drofs or Scum of it; after which it bears some Resemblance, in Colour, to *Indigo*, and is also sold by the Name of *Indian Flower*, or *Indigo*, and which has given Occasion to Authors that understood not the Commodity, to take this for true *Indigo*, as *Dalechamp*, and others, did. One may see, by the present Description, how it is possible, of the young or first Leaves of this Kind of *Wood*, to make a blue Flower or Meal, like the *Indigo*. There is another *Pastel* comes from *Picardy*, made of an entire Plant, which the Dyers call *Yellow*, and the Latins *Luteola*. We make another Sort that comes from *Provence*, for the Use of the Dyers, the Leaves and Stalk whereof are green; which is what the *French* call *Serech*, from the *Arabian* Word *Serech*. This Plant is likewise call'd *Yellow Herb*, or *Small Broom*, and, by the Inhabitants of the *Canaries*, from whence it first came, *Orifel*.

All the other Plants already mention'd, we bring from *Portugal*, especially from a Place or Sea-Port call'd *Porto*. We have a certain Commodity, which is nothing else but Leaves and young Branches of a Tree we call, after the *Arabs*, *Sumach*, beat or pounded; and is the same that is often call'd, by the *Leather-Dressers*, *Yellow*: This Commodity is in great Use among the *Tanners*, *Dyers*, and *Curriers*, to dye *Green* with.

The best *Sumach* for dying, is that which is greenish, and new: This Commodity obtains the Name of *Port of Porto*, from the Place it comes from being *Porto*. There is another *Sumach* of great Use among the Dyers, made of the pounded Leaves, which serves instead of the Fruit, which, in the Berry, is of a very fine Red, and a sharpish Taste; likewise a pleasant Cure for the Flux of the Belly, being boil'd in Water with the *Pomegranate* Bark. The Fruit, ston'd and dry'd, are what we call *Sumach Berries*, and have the same Physical Virtues, except that they are not so strong, because of their being dry'd: They will not keep good above a Year, because their Sharpness and Astringency are then lost.

12. Of the Dutch Turnsole in Paste and in the Cake.

THE *Dutch Turnsole* is a Paste made with the Fruit or Berry of a Plant which the Botanists call *Heliotropium Tricoccum*, or *Turnsole*, which grows plentifully in several Parts of *Holland*, of *Perelle*, or a dry'd Earth that is brought from *Auvergne* in *France*, *Lime*, and *Urine*; and after having mix'd these four Druggs together, they are put into little Barrels, that hold about Thirty Pounds. Those that make the *Turnsole* in Paste, do not sell it altogether soft, but in Form of square Cakes of Bread, which, after it is dry'd, is what we call *Turnsole* in the Cake; and, as it is mix'd in the Paste when new made, so it is sold: But the *Dutch*, and others, seldom fail to throw in a Quantity of Sand, as well to encrease the Price, as to make it go off well, and that's the Reason that the *Turnsole* in Cake, or that that is dry'd, is reckon'd better than the soft: Besides, this Kind of *Turnsole* in Cake, being well dry'd, strikes a blue, upon the *Violet* Tinge; and, being rub'd upon Paper, dyes it blue, being much better than that which makes it red.

13. Of Turnsole in Rags.

THIS *Turnsole* is so call'd, because it is such as gives a Tincture or Dye to Rags that are dip'd in it. What is commonly sold in the Shops, is nothing but old Rags, or old Linnen, dipp'd either in the Juice of the blood-red Grape, or that of Mulberries, and so dry'd in the Sun; but this is a Cheat, or an Abuse of the first Design, for the true *Turnsole* ought to be dipp'd in the Juice of the Berry of the Herb call'd *Turnsole*. This Plant, which we call *Turnsole*, the Greeks call *Heliotropion*, the Sun Follower, because its Flower always turns to the Sun. It bears Berries always three set together, not much unlike the *Palma Christi*; whence it is call'd by *Pliny*, *Heliotropium Tricoccum*, the *Turnsole* with three Berries, which, when they are at their full Maturity, have within them, between the outward Skin, and the Kernel or Seed, a certain Juice or Moisture, which being

ing rub'd upon Paper or Cloth, at first appears of a fresh and lively green Colour, but presently changes into a kind of bluish Purple upon the Paper or Cloth; and the same Cloth afterwards wet in Water or White-wine, and wrung forth, will strike the said Water or Wine, into a Red or Claret-wine Colour; and these are the Rags of Cloth, which are the true *Turnsole*, and ought to be sold in the Druggists Shops, wherewith People colour Gellies, Conserves, Tinctures, &c. as they please: But the chief Use of these stain'd Rags, is to colour Gellies or Tarts, or such like Things, which are frequent at Feasts and Entertainments; as also to colour all Sorts of Tinctures, Spirits, and the like, that are void of Colour.

Of the Turnsole Rags from Lyons.

That of *Lyons* is compos'd as the other, of *Perelle*, quick Lime, and Urine, to which some add a Tincture of *Brasil Wood*, in order to give it a finer Gloss, and to make it of a deeper Red. This is made frequently about *Lyons* and in *Auvergne*, it being much deeper colour'd; so that, when rub'd upon Paper, the Colour is very lively.

The *Isatis domestica*, sive *Glastum*, *Lemery*. or the *Latifolium* of *Tournefort*, in *English* the broad leav'd Woad, or *Dyer's Weed*, is a Plant that bears its Stalks three Foot high, as thick as the little Finger, round, hard, smooth, reddish, divided towards the Top into abundance of Branches, cloath'd with a great number of Leaves dispos'd without Order, that are oblong and large as those of *Hounds-tongue*, without Hair, of a deep green Colour, and sometimes tending to a Sea-Green. The Branches are furnish'd with a great many little Flowers, compos'd of four yellow Leaves, like a Cross, ty'd by a slender Foot or Stalk: When the Flowers are gone, there arise in their Places little blackish Fruit, divided into Tongues, flat on the Sides, containing each two oblong Seeds. The Root is about a Foot and a half or two Foot long, an Inch thick at the Top, and growing smaller by degrees downwards, white and woody: They are cultivated in the hot Countries, but particularly in *Languedoc*, near *Toulouse*: The Taste is bitter and astringent: It yields abundance of Oil

and fix'd Salt. There is made of this Plant a dry'd Paste, in the Nature of an Extract, which is call'd *Pastel*, or *Indian Flower*, which they sometimes colour with *Indigo*, for the Dyers. This Plant is vulnerary, drying, astringent: Some People apply it to the Wrist, after stamping it, to cure an Ague or intermitting Fever, in the shaking or cold Fit.

The *Rhus*, or *Sumach*, is a Shrub which grows sometimes the Height of a Tree: The Leaves are longish, large, indented on their Sides, and reddish; the Flowers dispos'd in Bunches, of a white Colour, each of which makes a little Rose of several Leaves, which being gone, there succeeds a flat *Capsula*, or Husk, that is almost oval, membranous, and red, containing in it a Seed of the same Figure, which resembles, in some degree, a *Lentill*, of a reddish Colour: The Fruit has an acid, astringent Taste. This *Sumach* grows in stony Places, and is us'd sometimes instead of Salt, to season Provisions with; from whence it is call'd *Rhus culinaria*, or *Kitchen Sumach*. The Tanners make use of the Leaves to tann Skins, thence it is call'd *Rhus Coriaria*, Tanners or Curriers *Sumach*. The Leaves and Fruit are both us'd in Physick: They are very astringent, proper in the Dysentery, menstrual Courses, and Hemorrhoides, to stop Gonorrhoea's, and the like, being us'd in a Decoction, or in Powder.

Tornesol, or *Turnsole* in Rags, is made of Linnen Cloth dyed at *Constantinople*, with *Cochineal* and some Acids. The Cotton *Turnsole*, call'd *Portugal* or *Spanish Wool*, is made from Cotton that is flatted the Size of a Crown, and dyed in *Spain* or *Portugal*, with *Mastic* *Cochineal*. Both Sorts are made use of to colour Liquors, Fruits, and Gellies.

There is another Kind of *Turnsole* that is made with Rags dipp'd in a red Tincture, prepar'd with the Juice of the Berry, and a little acid Liquor: It comes from *Holland*, *Languedoc*, &c. and is us'd to tinge Wines of a red Colour.

The *Turnsole* in Paste, or in Cake, or *Stone Turnsole*, call'd likewise *Orseil*, is a dry'd Paste made up with the Fruit *Perelle*, Quick Lime and Urine; the Colour of the Paste will be blue. The Dyers use that that comes from *Holland*, and they make it at *Lyons*, but it is not so good.

14. Of Tobacco.

Pomet. Tobacco, is so call'd, because it is met with plentifully, in the Isle of *Tabago*; and, by some, it is call'd *Nicotiana*, because *Mr. F. Nicot*, a French Embassador in *Portugal*, was the first that brought it into *France* to the Queen Regent; upon which Account it was likewise call'd the Queen's Herb: It is also call'd *Antartick Bugloss*, because this Herb grows much in those Isles; and *Holy Herb*, from its great Virtues; last of all, *Petum*, which is the Name that the *Indians* give it, and which was the first, and is the true Name for Tobacco.

This Plant, at present, is very common in *France*, there being few Gardens where it does not grow: But I shall not entertain you with a long Account of it, it having been writ upon by so many Authors, who have esteem'd it more or less, according as this Commodity has been agreeable to them.

If the Trade of Tobacco had been free, as it was some Years ago, I could have said something more satisfying upon this Subject; but as we are not permitted to buy any but at the Office, it is for that Reason I shall treat of it only under those different Names it is there call'd by. We buy two Sorts of Tobacco of the Farmers, to wit, in Roll and in Powder. That in Roll is distinguish'd by several Names, as the *Brasil Tobacco*, which is a black Tobacco, of the Size of one's Finger: The second is in a dry reddish Leaf, roll'd the Thickness of a large Cane, and is call'd *Sausage Tobacco*, from being like a *Sausage* in Shape. There is another Sort in this Form, that comes from *Holland*. The third Kind is that call'd *Dieppe Tobacco*, and is a little black Roll, of the Thickness of a Child's Finger, or thereabout. There are several other Sorts of Tobacco, as those of *Virginia*, *St. Domingo*, &c.

As to the Tobacco in Powder or Suuff, scented and unscented, there are so many Sorts, it is impossible to treat of them all; for which Reason I shall say nothing of them, but content my self to relate what *Father R. P. du Tertre* has writ about it; which is, That the Inhabitants of the Islands commonly cultivate four Sorts of *Petum* or Tobacco, namely, *Green Tobacco*, *Tongue Tobacco*,

Amazonian Tobacco, *Musk Tobacco*. The *Savages* call all Tobacco, without Distinction, *Toly*. The *Green Tobacco* is the most beautiful, and of the finest Figure: The Leaves are a Foot broad, and two Foot long, commonly very subject to decay, and not reckon'd of any great Account. The *Tongue Tobacco*, is so call'd because the Leaves grow in the Shape of a Tongue, and is very much esteem'd, because it is not at all subject to waste away and damage. These two first Sorts are what are most commonly sold. The *Venice*, or *Musk Tobacco*, is much less than the two former; the Leaves are a little rougher, more wrinkled, and pointed at the End, than the others: It is, in Proportion, the least of all, and most inclinable to decay, but most valu'd, and the dearest, because the Leaves have not only a Musk Scent, but the Smoke is perfum'd in the burning of it, with a very agreeable Odour, as that of the other Tobacco is insupportable to a great many People in the World: But what is further remarkable is, that one Plant of this Musk'd Tobacco will communicate its Virtue to four others, to make it pass for the same; which is usually practis'd in the Places from whence it comes. Tho' the Manner of cultivating, and afterwards making Tobacco, be common among the Inhabitants where it grows, it may yet be satisfactory to a great many curious Persons in these Parts of the World, to have as succinct an Account writ of it as may be.

First of all, Sow the Seed, which is mix'd with five or six times as much Ashes as Seed. After you have sown your Seed well, and that it begins to rise or spring out of the Ground, cover it every Morning with Branches of Trees, to defend it from the scorching Heat of the Sun, which would burn it up, before it was ready to transplant. Make ready your Garden where you design to raise your Tobacco, that is to say, your Crop, by clearing, stubbing, cutting, and burning the Wood that is upon the Ground, and freeing it entirely from all Sorts of Weeds. When your Garden is ready, remove your Plants in a rainy or wet Season, and plant them down again in about three Foot distance from each Plant to another every way, that it may have room to spread, without the Leaves touching one another, so as to make them

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 The *Alcanet*, or *Cypus*, are the Leaves of
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Sage, *Rosemary*, *Succory*, *Scurvy-grass*, *Benn*,
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namely, *Green Tobacco*, *Tongue Tobacco*, Leaves touching one another, so as to make
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them rot and corrupt. After the *Tobacco* is thus planted out, Care must be taken, from Time to Time, to prevent the Weeds from over-powering it. When the Plant is ready to flower, stop it short, by cutting it about Knee high; then pull off the Leaves underneath that hang on the Ground, so that you leave behind about 10 or 12 Leaves upon a Stalk, which being weeded or howed diligently every seven or eight Days, all that Time cleansing away all decay'd Leaves in such a manner, that the ten or twelve remaining may be prodigiously encreas'd, and become as thick as a good Skin. To know and try whether it be ripe, rumple or fold a Leaf in your Fingers, which, if it fall in rouching, it is ready to cut: Being cut, they leave it spread upon the Ground; after which they string it upon certain Cords, in little Knots, so that the Plants may not touch one another; and so they leave it to dry in the Air Fifteen Days or Three Weeks: And when it is rightly prepar'd, they roll it into what Form is best lik'd by the Buyer.

They make, by Distillation of *Tobacco* with Flegm of Vitriol, a Liquor that is emetick, or very vomitive, and proper to cure Itch and Scabs, by rubbing lightly with it. There is a black ferid Oil distill'd from it, by means of a Retort, which is much of the same Nature. There is likewise a Salt made of it that is sudorifick, to be given from four Grains to ten, in any convenient Liquor.

There are several other Sorts of Leaves, as *Betel* or *Tembul*, which are the Leaves of a creeping Plant, and of which the *Indians* make a kind of Comfit with *Areca* and burnt Oyster-Shells. The *Coca*, which is the Leaves of a small Shrub, pretty like those of Myrrh, which the *West-Indians* use the same way as the *East-Indians*, mixing it with *Betel* as the *Europeans* do with *Tobacco*. The Inhabitants of *Peru* use the Leaves of *Coca* two different ways; the first, in making a Comfit of it with burnt Shells, to secure them from Hunger and Thirst in a Journey; the second, in mixing it with Leaves of *Tobacco*, which serves them for a thousand Extravagancies.

The *Alcanes*, or *Cyprus*, are the Leaves of a Plant which grow plentifully in *Egypt*, and in the *Levant*, and which the *Indians* employ in painting their Nails and Hair yellow,

infusing of it in Water; and to paint red, putting it in Vinegar, Juice of Citron, Alom-Water, or any other Acids. The *Egyptians* make an Oil of the same Berries, which is call'd *Cyprus Oil*, very fragrant, and proper for relaxing and softning the Nerves. Several Persons have assur'd me, that the *Alcanes*, or *Egyptian Cyprus*, is that which the Botanists call *Ligustrum Egyptiacum*. It is here observable, that there are several other Sorts of Herbs which the Druggists do not sell in *Paris*, because the Herbarists furnish the Apothecaries with what they have present Occasion for, which the Druggists, in other Towns in *France*, are oblig'd to sell, having no People that deal in Herbs to supply them; so that it is no little Trouble sometimes to them, when they are obliged to send three or four Leagues for a Handful of fresh Herbs: But, in Recompence for that Trouble, they understand them better than they do at *Paris*, which makes the Herb-Sellers sometimes impose upon them one Thing for another.

Besides other Things, we sell a great deal of a small Seed, of a deep red Colour, no bigger than a Pin's-Head, which is found upon the Root of the large *Pimpernel*, which the Dyers use by the Name of Seed of *Cocheneal*, and sometimes Wood and Wild *Cocheneal*. This *Cocheneal* shou'd be chose fresh, dry, large, high in the Colour, and the cleanest that can be got.

The Plants of *France*, that come under the Catalogue of Druggs, are *Scordium*, Mountain *Calamint*, *Germander*, *Chamæpitys*, White *Hore-bound* or *Marrubium*, *Southern-wood*, the great and small *Wormwood*, *Ceterach* or *Spleenwort*, *Betony*, *Avens*, *Camomil*, *Periwinkle*, *Hemlock*, *Hart's-tongue*, *Hound's-tongue*, *Agrimony*, *Rupture-wort*, *St. John's-wort*, the great and lesser *Centaury*, *Melilot*, *Mugwort*, *Mint*, *Baum*, *Basilicum*, *Origanum*, *Savory*, *Hyslop*, *Scabious*, *Thyme*, and several other Herbs, treated of so largely by all Botanists, it will be unnecessary to say any-thing further. We do not sell these Herbs in the Druggists Shops, because of the Herb-Sellers; but we sell the fix'd, essential, and volatile Salts, especially those of *Carduus*, *Wormwood*, *Mugwort*, *Centaury*, *Baum*, *Sage*, *Rosemary*, *Succory*, *Scurvy-grass*, *Benn*, and several other Sorts. But as to the Choice of these Salts, that honest People may not be cheated in the Purchase of them, which is

too frequently done by the Chymist and Druggist, who instead of any of these Salts, give 'em either Salt-Peter, Salt of Tartar, or Sal-Polychrest, which they put into so many different Bottles, and write the Names of the several Salts upon them: Therefore, Ifay, to hinder them from being cheated, let 'em throw any of these Salts upon lighted Charcoal; and if they fly off, or sparkle in the Flame, it is certain they are mix'd with Salt-Peter; but it is not so easie to discover the Tartar, but only that this Salt is not so soft to the Touch, as the other vegetable Salts mention'd.

Nicotiana, in *English*, Tobacco, is a *Lemery*. Plant whereof there are principally three Kinds; the First is call'd, by *C. Baubinus* and *Tournefort* *Nicotiana Major latifolia*, the broad-leav'd Tobacco, and by *Parkinson*, *Tobacco latifolium*, the same Thing. There are a great many other Names more curious than instructive, which I shall pass by: This first Kind bears a Stem of about five or six Foot high, as thick as a Man's Thumb, round, hairy, full of white Pith; the Leaves are broad, and larger than those of *Enula Campana*, without Stalk, a little pointed, stringy, of a pale, green Colour, glutinous in touching, of a sharp burning Taste: Mr. *Tournefort* says, that the Top of the Stem is divided into several Sprigs, that sustain Flowers made like Bells, cut or separated into five Parts, of a purple Colour; when the Flowers are gone, there is a husky, oblong Fruit succeeds, that is partition'd into two Cells, containing in them a good deal of small, reddish Seed: The Root is fibrous, and of a very biting Taste; the whole Plant is of a strong Smell.

The second Sort is call'd *Nicotiana Minor angustifolia*, the great Narrow-leav'd Tobacco, or *Hyoscyamus Peruvianus*, in Opposition to the First, call'd *Hyoscyamus latifolius Peruvianus* the *Peruvian Henbane*. It differs only from the other, in that the Leaves are narrower, sharper pointed, and hang to the Stem by longer Tails or Stalks.

The third Sort is call'd *Nicotiana Minor*; the small Tobacco, by *Baubinus*, *Tournefort*, and *Ray*, and by *Parkinson*, *Tobacco Anglicanum*, the *English Tobacco*. It bears a Stalk a Foot and Half, or two Foot high, round, hard, hairy, the Thickness of one's Finger,

sometimes branchy, glutinous to the Touch, and carries its Leaves, rang'd alternately, oblong, thick, and of a brownish, green Colour, hanging upon short Stalks; the Flower, Fruit and Seed, are like the first Sort, but the Flowers more inclinable to a yellowish Purple; the Root about a Finger's Thickness, and sometimes divided into white Fibres, that spread themselves round in the Ground. Tobacco is cultivated in fat, rich Land in Gardens, and yields Abundance of a sharp, biting Salt, both fix'd and volatile.

It purges upwards and downwards with a great deal of Violence in the Apoplexy, Palsy, Lethargy, Suffocations of the Womb, and in the Asthma taken by the Mouth, or being fomented with it; applied outwardly to the Part, or smoak'd, it relieves the Tooth-ach; in Powder or Snuff it purges the Nostrils, and excites Sneezing, and is a very good Vulnerary, the Leaf, Oyntment, or Powder, being applied to the Wound.

15. Of Coral.

CORAL, according to Mr. *Pomet.* *Tournefort*, is a Plant that grows at the Bottom of the Sea; it has neither Leaf, Flower, nor Seed; nevertheless it sticks to the Rocks in the Nature of a Root, and is cover'd with a Bark that is adorn'd with Pores like Stars, which descend to the Bottom; it is divided into Branches, which discover Rays that have some Analogy to Fibres: In short, it is undoubtedly increas'd by its Seed, which is the Opinion countenanc'd by all those that rank *Coral* among the Number of Plants. It is agreed, at this Day, that it is hard in the Sea; the Softness of the Bark or Crust, which is otherwise smooth, and almost oily, has, perhaps, deceiv'd those who have asserted that this Plant was soft. The Bark is a tartarous Crust, red upon the red Coral, and white upon the White: The Extremities, or Ends of the Branches, are soft, and also produce little Balls, the Size of a red Goosberry, divided commonly into six Cells, fill'd with a white Humour like Milk, which makes it a Sort of Tithymal; it is fat, acrid, and astringent. These little Balls are commonly call'd Flowers of Coral, but ought, with more

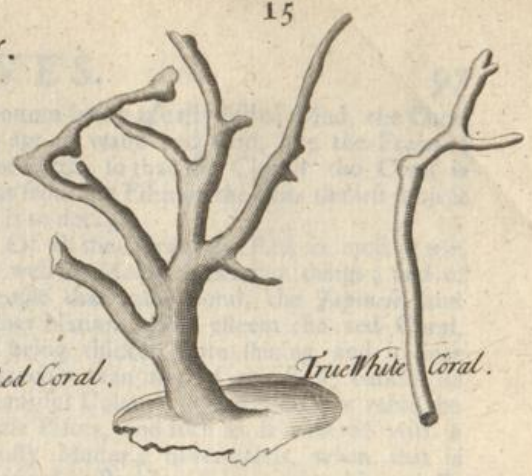
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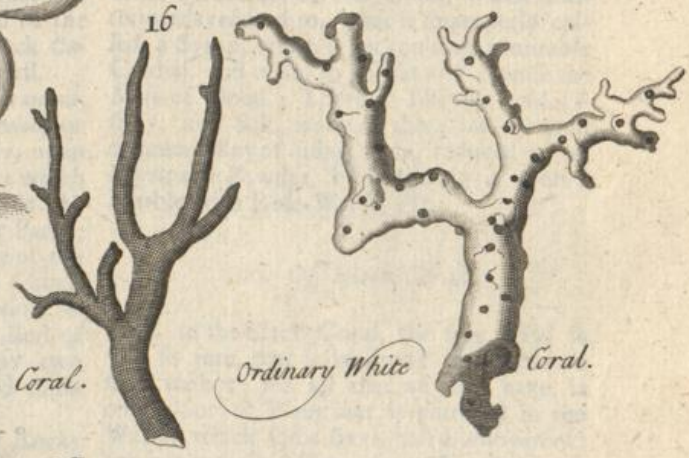
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Red Coral.

True White Coral.

16



True Black Coral.

Ordinary White Coral.



False Black Coral.

Sponge . 18



Coraloides.

17



Coralline or sea moss.

more Reason, to be nam'd the *Capfule* of the said Plant: For our Modern Authors have observ'd, that the white Juice which they yield, produces the Coral Plants on any Bodies upon which it falls; and besides the Coral they show at *Pifa*, which sticks naturally upon a Human Scull: I have seen a pretty large Piece that grew upon a broken Piece of Earthen-Ware.

There are properly but three Sorts of Coral us'd in Physick, namely, the Red, the common white Coral, which has some Resemblance to the red or flesh Colour: The true white Coral, which differs not from the Red but in Colour, is the scarcest and dearest: They use commonly that Sort for the White, which *J. Bauhinus* calls *Coralium Album Officinarium Oculatum*, the white Coral of the Shops, that is conceal'd; the false black Coral, call'd *Antipathes*, is of no Use at all.

They fish for Coral in the *Mediterranean*, on the Coast of *Provence*, near *Toulon*, or *Cape Creuse*, betwixt *Colioure* and *Roses*, upon the Coast of *Catalonia*, in the *Streights* which are betwixt *Sicily* and *Italy*, towards the *Bastion of France*, and in some other Parts; as on the Coast of *Sardinia*, and those of the Isles of *Corfica* and *Majorca*. The Coral-Fishing, according to *Mr. Tavernier*, is from the Beginning of *April* to the End of *July*, in which they usually employ two hundred Barks, some Years more, and some Years less.

As the Coral grows in the hollow Rocks where the Sea is deep, it is a great Piece of Artifice to get it up. The Coral-Fishers tye two Beams of Wood a-cross, and hang a good Piece of Lead in the Middle, to sink it; then they tye Tufts of Hemp about the Beams, which are slightly or carelessly twist-ed, about the Thickness of one's Thumb, and tye the Beams with two Cords; the One to hang at the Prow, and the other at the Stern of the Bark; so that the Pieces of Wood are left at the Bottom to run along the Rocks, and catch hold of the Coral in their Passage: It is necessary, sometimes, to make use of five or six Boats to get up the Beams; and during that time, if one of the Cables happen to break, all the Branches are in Danger of being lost; for it is a great Risk in the Taking the Coral out, that some does not fall into the Sea; and the

Bottom being usually full of Mud, the Coral is apt to waste and spoil, like the Fruits of the Earth; so that the Clearer the Coral is got from the Filth of the Sea, the less subject it is to decay.

Of all the Corals the Red is most in use, as well for Medicine as other things; and of People that value Coral, the *Japonefe*, and other Nations, most esteem the red Coral, as being thicker, more shining, and in finer Branches than any of the Rest, besides its beautiful Colour; and they do not value the little Pieces, and such as is covered with a crusty Matter; nevertheless, when that is reduced to Powder, it is every whit as efficacious. By Means of certain Acids, they make a Tincture of red Coral, which is afterwards reduced to, what is improperly called, a Syrup, which is reckon'd an admirable Cordial, and useful to purifie and cleanse the Mass of Blood. There is likewise a Magistery, and Salt, made of this; but the most common Way of using it is, reduced to an impalpable Powder, by lavigating it upon a Marble with Rose-Water, &c.

16. Of Black Coral.

AS to the black Coral, the true Kind is so rare, that it is almost impossible to meet with it; for all that we now have, is only a Sort of Plant that is petrified in the Water, which some have call'd *Antipathes*; but it is entirely different from the true Coral, being very light, and more like Horn than Coral; whereas the true Sort is heavy, of a reddish black Colour, and very rough; and with the utmost Diligence I have met with some, but in very little Pieces, no bigger than the End of one's Finger; but I have a Piece of the common black Coral, of about two Foot long. As to the *Coraloides*, it is nothing else but white Coral that is not brought to its Perfection, and is of no manner of Use, but is sometimes sold instead of the White, tho' it eafie to distinguish, it being large, light, and imperfectly form'd.

17. Of Coraline, or Sea-Moss.

THE Coraline, or Sea-Moss, is what is gather'd from Rocks, or Shells, in the
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Sea, to which it is apt to cling; there are several Sorts of it to be met withal; but that which is used in Physick comes from *Bastion* in France, and other Parts of the *Mediterranean*, which is only what is in Practice. *C. Baubinus* calls it, *Muscus Coralloides Squamulis loricatus*.

This Moss, or Coraline, is of some small Account in Medicine, as it is pretended to have a Quality to destroy Worms: As to the Choice, it ought to be greenish, and the most free of Dirt and Filth that can be got.

18. Of Sponges.

Sponges are a Kind of *Fungus*, or *Sea Mushroom*, which are found sticking to the Rocks in the Sea. I shall not detain the Reader to give an Account of what a Multitude of Authors have said concerning Sponges; some saying that they are Male and Female, others that they are neither Plants nor Animals, but both, that is, *Zoophytes*, which partake of the Animal Kind, and that of Plants too; there are two Sorts of Sponges sold, namely, the Fine, which are those the Ancients call'd the Male; and the Course which are the Female. The greatest Part of the Sponges that are sold, comes from the *Mediterranean*, and there is a certain Island of *Asia*, that yields a very large Quantity of Sponges. This Isle is call'd *Icarus*, or *Nicarus*, where the young Men are not allow'd to marry, 'till they can gather a sufficient Quantity of Sponges from the Bottom of the Sea; and for this Reason, when any one wou'd marry his Daughter, a Number of young Fellows are strip'd and jump into the Sea; and he that can stay longest in the Water, and give the best Account of, or gathers the most Sponges, marries the Maid, so that he pay a Tribute, out of his Sponges, to the Grand Seigneur.

The finer the Sponges are, the more they are esteem'd, and they are reckon'd best that are fairest, clearest and lightest, whereof the Holes be small, and the least full of Stones, that may be, as to the course Sort, the nearest they approach to the Fine, the more they are valued.

The Use of Sponges is so well known, it wou'd be unnecessary to give any Description

thereof; but after they are prepar'd, by cutting into sizeable Pieces, and put into melted, white Wax, and afterwards press'd to make them extend themselves; they are sold to Surgeons, and other People, by the Name of prepared Sponges. They are likewise calcin'd to make a Powder for the Teeth: The large or course Sponges have a Sort of little Pebbles, and other extraneous Bodies in them; to which, when reduced to Powder, by Calcination, they assign a Property of curing the Gravel: Some Authors call these Stones by the Name of *Cystheolitos*, and affirm that such of 'em as are to be found in Shape of an Almond, being pounded and mixed in any proper Vehicle, are useful to destroy Worms in little Children.

Corallium, *Lithodendrum*, or *Coral*, is a stony Plant, that is found *Lemery*. growing to Rocks, at the Bottom of the Sea, and crufted over in the Nature of Stone; the Chief of what is sold comes from several Parts of the *Mediterranean*; There are three Sorts of it, Red, white and Black. The *Corallium Rubrum*, or red Coral of *C. Baubinus*, grows commonly three or four Fingers high, but such Corals as are found of any considerable Length, are kept in the Cabinets of the Curious; it bears several Branches without Leaves, that are very hard, smooth, shining, and of a fine Red; the Root is rocky, and of the same Hardness: This Coral is the most used and esteem'd in Physick; chuse such as is all of a Piece, polish'd, shining, and of the highest Colour.

The second Sort is white Coral that grows much about the same Height; there are two Kinds of this, one call'd *Corallium Album Oculatum*, which is a little stony Plant as the Former, the Ends of whose Branches are round, and represent, in a Manner, little Eyes. The other is call'd *Corallium Asperum*, the *rudded Coral*; this is a little strong Shrub, about a Hand high, that is ramous, rough, white, full of Pores, or little Holes, and much lighter than the Former; this last grows not only in the *Mediterranean* but in the red Sea, and is of small Account in Physick.

The third Kind of Coral is call'd by *C. Baubinus*, *Corallium extra rubens intus nigrum*, or Coral red without, and black with-

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in, but this is very scarce; and there is substituted in its Stead a false, black Coral, call'd *Antipathes*, which is a stony Sea Plant, which is usually cover'd in the Sea with a Sort of Bark, or tartarous Crust, of the same Colour: When they are young and tender, the Ends of their Branches are found divided into little Balls, of the Size of a small Gooseberry, that are soft, and distinguish'd usually into six little Cells, full of a milky Liquor, that is of an acrid, styptic Taste, and these are call'd Coral Flowers.

Others say that Coral, while under Water, is green and soft; but once come into the open Air, it changeth both its Colour and its Nature; and from its Greenness becomes of a very delightful, beautiful Red; and from its Softness, of a compacted Firmness, that is hard and durable; it springs up naturally, resembling a Plant or Shrub, adorn'd with many pretty Branches: The Red is best, and of that, the Redest, the Palest being of less Use; but in Medicines a small sprig Sort is taken for Cheapness. The White is next in Goodness; the Best of which is that which is pure, white and clear, almost transparent, free from Dross, and something resembling white Wax; the Black is not valued, yet the greatest Rarity of them all. It is observable, that red Coral, infused two or three Days in white Wax, melted upon hot Embers, and pour'd an Inch over it, looses its Colour, and the Wax becomes yellow. Fresh red Coral put into the same Wax, in the same Manner, it becomes Brown; and fresh red Coral put in like Manner, into the same Wax, the third Time, makes the Wax become red; for the Wax dissolves, and draws forth Part of the red, sulphureous Particles, lying on the Surface of the Coral.

Coral is prepared by levigating it on a Marble, into a fine, subtil Powder; it is cooling, drying and binding; strengthens the Heart, Stomach and Liver, absorbs Acidities, purifies the Blood, resists the Plague, and the Force of putrid and malignant Fevers; stops Fluxes of the Belly, and is profitable in the Gonorrhœa and Whites. It is said to prevent the Epilepsy in Children, being first given in the Mother's Milk as soon as the Child is born; it stops Bleeding, helps in Difficulty of Urine, and is prevalent a-

gainst the Stone in the Bladder, and the bloody Flux: Dose from a Scruple to a Dram, in any proper Liquor: Outwardly it helps Ulcers, filling them with Flesh and Cicatrizing. In Collyries it helps the Eye-Sight, stops the Weeping of the Eyes, and absorbs the watry, sharp Humours.

Of this there is a Tincture made with Spirit of Vinegar, or Juice of Lemons; and from thence a Syrup, Magistery and Salt prepared, but they are all forced, unnatural Preparations: And crude Coral, reduced to such an impalpable Powder as aforesaid, is far Superiour to all the other Preparations of it.

Corallina, call'd Coraline, or hard Sea Moss, is of several Kinds; that which we now use in Physick, is call'd *Muscus Marinus*, five *Corallina Officinarum*, Sea-Moss, or the Coraline of the Shops; this is a little bushy Plant, which grows about three Fingers high, bearing a great many little Stalks, that are as fine and slender as a Hair, stony, and furnish'd with very little Leaves, of an ash-colour'd Green, and a fishy Smell, the Taste being salt and disagreeable, cracking or crackling betwixt the Teeth like small Stones, and being subject easily to be bruised betwixt the Fingers; chuse such as is whole, clear, of a whitish green Colour, and very strong Smell; it yields a good deal of Salt and Oil; it is proper to kill Worms, suppress Vapours, provoke Womens Courses, and stop Fluxes of the Belly. Dose in fine Powder, from half a Dram to a Dram.

The *Coralloides* is a Plant that is but petrified in Part, having the Appearance of a little Shrub, but without Leaves: There are several Sorts of it which vary in Size, Shape, Hardness and Colour; they are all usually astringent, as to Passage by Stool, and aperitive by Urine, but of no great Vogue in Physick; it is call'd *Coralloides*, as being something like Coral in Figure and Hardness.

Other Authors say, the *Coralline* is a hard, stony Moss, growing usually on Rocks, in or near the Sea, rising either from the Stones thereof, or from the Shells of Scallops, Oysters, and the like; it grows scarce a Hand high, spreading forth several small Branches, like a green Herb, with many small, short Leaves like Hairs. It is gather'd on all the

Western Coasts, and the Northern Parts of Europe, and is found growing in little white Threads, fastned to the Rock or Shell it springs from, as Moss to a Tree; and if good, is very white, in little Strings, like the Unravelling of course Linnen Cloth, some an Inch long, some shorter, some longer, of an unpleasent Taste and Smell.

The *Sponge* is a Kind of Mushrome, which grows to the Rocks, in the Sea, of which there are two Kinds, [according as *Pomet* has describ'd 'em already:] But tho' it is taken from the Sea, Authors have nor yet determined in what Class to place it; some thinking it to be neither Vegetable, Mineral, nor Animal; others, that it participates of them all: Some again place it between Animals and Vegetables, and think it partakes of both of them, for that it has an active Quality to dilate it self, and shrink up together, when in the Sea, and therefore they will have it to be a Plant-Animal; because, in its Nature, it comes near, both to that of an Animal, and also to that of a Plant.

The most Part of Sponges that we use are brought from *Smyrna*, *Aleppo*, and other Places in the *Levant*: Those which are fine, smooth, soft, and not too full of large Holes in them, are said to grow in the Archipelago; those which are large, fine, close, and lively colour'd, whether White or Yellow, are accounted the Best; the worse Sort are of a dirty Colour, rugged on the Surface, and hard, with small, gritty Stones sometimes in them. The *Sponge* is of an alkalious Nature, and is good against Pains of the Stomach, Gripings in the Bowels, and the Cholick; and is suppos'd to be a Specifick against the Stone and Gravel, in the Kidnies or Bladder, or any Obstructions in the urinary Passages; the chief Use of it, is either in a Powder calcined or crude.

The *Sponge-Stone* is found in those Places where Sponges are found, and is made of the Matter of Sponges petrified or hardned. *Schyoder* saith, that it also grows in Sponges, and is a brittle Stone, white or gray. It is attenuating without much Heat, and is good to break the Stone in the Kidneys and Bladder, and to discuss Tumours of the King's Evil, being drunk every Morning in Urine; or in Wine, with Sal gem and Tartar: The levigated Powder absorbs Acids, destroys the

Matter breeding the Stone and Gout, cures Heart-Burnings, and violent Pains in the Stomach.

19. Of Squills.

Squills are Sea-Onions, which are brought from *Spain*, &c. where *Pomet.* they grow plentifully, especially on the Sea Shore; great Quantities also come from *Normandy*, especially about *Rouien*; they are of different Sizes and Colours; but those we commonly have, are the red Squills, which the Ancients call'd the Female; the White were known by the Name of the Male Squill, but we meet with very few of them. These Onions bear broad, large, long, green Leaves, and Flowers like Stars, of a fine, white Colour.

Chuse such Roots, or Bulbs, as are found heavy, fresh, and full of Juice, and beware of those that are decay'd towards the Head, to which they are subject: They are made use of in the Shops for making Vinegar and Honey of Squills, and Troches for Treacle, and likewise in some Ointments and Emplaisters; as Ointment of Marsh-Mallows, and the Plaister call'd *Diachylum Magnum*, several Persons have assur'd me, that the Squills which we have from *Normandy*, are they that the *Botanists* call *Pancreatium*.

The Squills are reckon'd, especially the Heart, to be Poison, which is the Reason why, when they split them in two, they throw away the dry Leaves, and the Heart, and the middle Part, betwixt both they expose to the Air to dry; and being thus prepar'd, they make use of it, as aforesaid, to make Vinegar, Honey, Wine, Syrup, Loc-hoch, &c.

Scilla, or the Squill, is a Kind of *Lemery.* *Ornithogalum*, or a Plant, whereof there are two Sorts; the First is the *Scilla Major*, or *Scilla rubra magna Vulgaris*, the great, common, red Squill, call'd by *Tournefort*, *Ornithogalum Maritimum*, seu *Scilla radice rubra*, the Sea-Onion, or red-rooted Squill, and by *Parkinson* the true *Pancreatium*; it bears Leaves of above a Foot long, almost as broad as a Man's Hand, fleshy, very green, full of a bitter, viscus Juice; from the Middle rises an upright Stalk, of about a Foot and a Half high,



The White Squill.



The Red Squill.



Pancratium.



Pot-ashes or Kali.

20



high, bearing on the Top, Flowers compos'd of six white Leaves, that are form'd round; which, when gone, are succeeded by a Sort of roundish Fruit, rais'd with three Corners, and divided within into three Partitions, which are fill'd with black Seed. The Root is an Onion or Bulb as big as a Child's Head, compos'd of thick Coats or Spheres that are red, juicy, viscous, and encompassing one another, having at the Bottom several thick Fibres.

The second Sort is call'd *Scilla mascula*, the Male Squill, or *Scilla minor*, seu *Scilla radice alba*, the lesser Squill, or that with the white Root: It varies from the former, in that the Roots and Leaves are not so large and big; besides, this is white, and less common. Both Sorts grow in sandy Places, near the Sea, in *Spain*, *Portugal*, *Sicily*, and *Normandy*. We have them brought to us of all Sizes. They contain a great deal of essential Salt, some Oil and Flegm, and a little Earth.

They are hot and dry, sharp, bitter, attenuating, inciding, absterging, discussing, alexipharmack, and diuretick; powerfully cleanse the Stomach, open Obstructions of the Liver, Spleen, Gall, Mesentery; provoke Urine and the Terms, carry off slimy tartarous Matter from the Lungs; for which Reason they are accounted good against Colds, Coughs, Wheezings, Hoarseness, Difficulty of Breathing, and are singular against the Scurvy, Gout, and Rheumatism. The Root is prepar'd by rolling it in Dough, or putting it in Pye-crust, and baking it in an Oven, then taking it out and drying it: Being thus prepar'd, it is fit to make Vinegar of Squills, by infusing it in Vinegar; Dose, from one to four Spoonfuls: Or Wine of Squills, by infusing it in Wine; which is emetick, and good against Asthma's, Phthisicks, Falling-Sickness, &c. given from an Ounce to two, or more. There are several other Preparations of the Root to be met with in every Dispensatory, especially *Quercetan's*, *Swelfer's*, the *Augustan* and *London* Dispensatories.

20. Of Pot-Ashes, Kelp, or Kali.

Pomet. THIS is a grey Salt, which we bring from *Alicant* and *Carsagena* in *Spain*, cast into Loaves or Cakes of

different Sizes. This Salt is made from a Plant that grows along the Sea-coast, which the Botanists call *Kali*, and we *Salt-wort*, *Soap-wort*, *Glass-weed*, *Kelp*, *Sea-thongs*, *Sea-wrack*, and many other Names. This Plant bears a Stalk a Foot and a half high, or thereabouts, furnish'd with small narrow Leaves, as is express'd in the Figure. They sow this Herb, and when it is come to a due Height, they cut and manage it like Hay.

When it is dry'd, the *Spaniards* make large Holes or Pits in the Ground, in the Nature of a Lime-Kiln; after which, they throw therein a Bundle of the said dry'd Herb, to which they have put Fire; and when they have cast that in, they throw in another Bundle upon that; and when it is well lighted, they fill it full of the dry'd Herb; and when they have fill'd it, they stop it up, and leave it all together for some time, that it may not only be reduc'd the better to Ashes, but likewise incorporate, and be capable to form into a Stone or Cake, in which Form it is now brought to Market; and when they have open'd the Pit, they find the said Herb burnt into a hard Stone, which they are oblig'd to break and raise up just as they do Stone out of the Quarry.

We sell at *Paris* four Sorts of *Pot-Ashes*; the first and most valuable of which, are those of *Alicant*, which, when they are right, ought to be dry and clean, of a bluish grey without and within, having little Holes made like a Partridge's Eye, and when spit upon and held to the Nose, have no offensive Smell; and beware the Stones be not enclos'd with a greenish Crust, or full of Pebbles, for the first will stain and spot your Linnen, and the second, by encreasing the Weight, will enhance the Price, besides spotting the Linnen, according to the Nature of the Stones that are found within: Likewise take heed that the Bales be not open'd, and the Commodity that was good, chang'd for that which is nought. This is very much us'd by the Glass-makers, to make the best Glass, and the Soap-boilers likewise use it considerably in the making of white and marbled Soap; but the greatest Part of that which comes from *Spain*, is consum'd in *Paris*, and the neighbouring Villages, by the Scourers or Whiteners, who use it to whiten their Linnen.

They

They make this Salt, which the *French* call *Soude*, by the Assistance of common Water, a white Salt call'd Salt of *Kali* or *Alkali*, which is as much as to say *Soude Salt*, because *Al* is an *Arabian* Word that signifies Salt, and *Kali, Soude*. Thus there are several Salts of Herbs, call'd *Alkali Salts*, as Wormwood, Centaury, and the like. There are those who pretend that the true *Alkali Salt* is the Glass Salt, but they deceive themselves, as they may be satisfy'd in the Chapter concerning the Glass Salt.

The second Sort is that of *Cartagena*, which only differs from that of *Alicant*, in not being so good; neither is it of the bluish Cast, but more crufted, and the Bales are much larger. The third Sort of Pot-Ashes, is that nam'd the *Bourde*, which is to be entirely refus'd, as being so bad, that it is fit for nothing but to deceive those that buy it: This is usually moist, of a blackish green Colour, and very fetid. The fourth Sort is that of *Cberbourg*, which is made of an Herb found along the Sea-Coasts of *Normandy*: This is likewise of a very ill Property, being extremely humid, of the same Colour and Smell with the last Sort, and altogether fill'd with Stones. These two Sorts are good for nothing but to impose upon the unwary Buyer, and cheat the poor Whiteners.

21. Of Sandiver, or Glass Salt.

THE *Glass Salt*, which the Workmen call *Sandiver*, or the Scum of the Glass, is a fat Drofs that floats upon the Glass Mettle when it is in Fusion: And this Froth comes from nothing but the Pot-Ashes, which they use in making their Glass; for the Flints that they make use of, will afford no such Scum.

Take such *Sandiver* as is in very large Pieces, white without and within, heavy, and the likeft Marble that can be; and throw away such as is fat, blackish, and moist. It is very much us'd by those that make your white Earthen-Ware, because it assists the Sand in its Vitrification. It is very odd that this should be of no Use to the Glass-makers, and the Earthen-Ware Workers wou'd be at a Loss without it.

It is to be had in all Places wherever Glass is made, being a Sort of a superabun-

dant Salt, thrown forth from the Metal while melting in the Furnace, and, by the Glass-Men taken off, as the Recrement of their Materials, with a Ladle. It is a very white Salt, and inclining nearest to a nitrous Taste, easily dissolving in the Air, or any moist Place; for as Glass is made of Sand and Pot-Ashes, the latter being put in to make the former melt into Metal, so this *Sandiver* is the Superabundancy of that Salt, more than is requisite to go into the Body of the Glass, which being in a Fusion, sends up to the Top whatever is more than requisite for that Purpose. This must be scum'd off, or else 'twill make the Glass unfit for working, very brittle, and no ways pliable.

The best Metal will yield, in a Pot of Two Hundred Weight, near a Quarter or Half a Hundred of *Sandiver*. The weaker the Salt or Ashes are, the greater is the Quantity of *Sandiver*; they yield some four or five Parts more than others do, for green Glasses. When the Ashes are bad, they are forc'd to fill the Pot four or five times with more fresh Ashes, by reason of the Quantity of *Sandiver* that is in them, before the Pot will be fill'd with Metal. Whilst any of it is in the Pot unscumm'd off, they dare not cast in any cold Water to hinder the boiling, for if they shou'd, the Furnace and the Pots would be blown up together.

This *Sandiver* serves to make Metals run; and a little thereof put into *Antimony* and *Salt-Petre*, for making *Crocus Metallorum*, encreaseth the Quantity of the *Crocus*, and it will therewith separate the better from the *Scoria*.

'Tis sold in *France*, and there us'd to powder their Mear, and also to eat instead of common Salt: Dissolv'd in Water, and pour'd upon Garden-Walks, it destroys both Weeds and Vermin. The more nitrous and fossile the Salts are, the more Unctuosity they have, and the more they run into *Sandiver*, to which Nitre comes somewhat near in Colour, Taste, and Fatness.

It is said wonderfully to dry and heal Scabs and Manginess, the diseas'd Part being bathed in Water in which it is dissolv'd. *Parkinson* says that *Sandiver* works much the same Effect with the Ashes of *Kali*, or Pot-Ashes; and is us'd often, being ground fine, either to be blown into Horses Eyes, or, being dissolv'd

dissolved, squirted into them with a Syringe, to take away any Skin, Film, Cloud or Pearl, growing on the Sight. It is also used to dry up running Sores and Scabs, Tetters, Ring-worms, and such like Vices of the Skin.

22. Of Crystalline Glafs, and many other Sorts, with the various Ways of Colouring them, &c. from Pomet, Lemery, and several other Authors.

GLASS is a Composition, or Mixture of Ashes, or some Alkalifate Salt, with Sand, Crystal, Flints, Pebbles, or other Stones, and melted together into one Body, by the Force of Fire. The first Ingredient going into the Composition of Glafs, is Pot-Ashes, call'd by the *French*, *Soude* & *Roquette*; and by the *Italians*, *Polverina*, *Birillia*, &c. there is little or no Difference in them, but as to the several Places they are brought from, for the best Ashes make the Salt, and the clearest and finest Glafs. Pot-Ashes, made of Kali, which comes from the *Levant*, make a far whiter Salt than *Barillia*, and by Consequence a more perfect and beautiful Crystal.

Some use Brass Boilers in making this Salt, which may do where green or blue Colours are to be made; for this strong Lye will fret off some Part of the Metal or Verdegriſe, which will damage a Crystalline Glafs: In this Case therefore, the better Way is to have the Copper, or Vessel doubly lined with Tin, because that emits no Tincture: Also, in Making the aforesaid Salt, you must mix a Quantity, more or less, of Tarrar calcin'd to Whiteness, with your Pot-Ashes, because it makes not only more, and a whiter Salt, and more beautiful Crystal, but likewise opens the Body of the Pot-Ashes, causes a speedier Dissolution, and a better Extraction of the Salt, just as Alum or Vitriol opens the Body of Salt-Peter, in making *Agua fortis*, or Spirit of Niter, which otherwise without such Addition wou'd not rise.

The second Ingredient that enters the Composition of Glafs is Glafs Stone, *Tarſo*, or Sand; and this is what gives Body Consistency and Firmness to Glafs, as Iron gives to *Engliſh* Vitriol, Copperas, and Copper to

Hungarian, *Dantzich* and *Roman* Vitriol, which otherwise wou'd run into Water, in moist Places and Seasons. Glafs Stone is properly all or most Sorts of Stones, which will strike Fire with a Steel; these are apt to vitrifie, and make Glafs and Crystal withal; those which will not strike Fire with a Steel will never vitrifie; whereby you may partly know the Stones which will, and which will not, be transmuted into a glassy Body.

The third Place is given those Stones which are white, but not transparent, of which Kind is *Tarſo*, which is a Sort of hard, white Marble found in *Tuscany*, at *Pisa*, *Seraveza*, *Carara*, the River *Arno*, above and below *Florence*, and in many other Places of the World; that is the Best which is without blackish or yellowish Veins in it like Rust. The Next is a Kind of Pebble, in Appearance like white Marble, something transparent, and hard as a Flint, which being struck gives Fire, and turns not into Lime: This, when first put into the Fire, becomes white and loses its Transparency, and afterwards it turns to Glafs.

Where fit Stones cannot be had Sand is made use of; and as some think, and affirm, with good Reason, was the first Material made use of in making Glafs; it must be small, white, and very clean, and well washed, before it be us'd, which is all the Preparation of it. This is usually met withal upon the Mouths and Banks of Rivers, and in many Places upon the Sea Shore, and sometimes upon Inland Sand-Hills. White Crystal Glafs requires a fine, clear, transparent Sand, but green Glasses a more coarse and brown.

The last Ingredient is *Manganese*, or *Magnesia*, so called from its Likeness in Colour, Weight and Substance to the Lead-Stone, and is accounted one of the Kinds thereof, which is found in *Germany*, *Italy*, *Piedmont*, &c. but of late Years, in *England*, among the Lead Mines, and where ever the Miners find it, they certainly conclude that Lead Oar lies under it. The Potters spend great Quantities of it, this being the only Material wherewith they colour their Black, as they do Blue, with Zaffer; that is best which has no glittering Sparkles in it, and is of a blackish Colour, but being powder'd of a dark

Lead

Lead Colour: 'Tis a Stone very hard and ponderous, and the deeper its Colour is, the deeper it colours the Metal in the Furnace, and is to be put into the melting Pot, together with the *Fritt*. This is the most Universal Material used in making of Glafs; and is that which only purges off the greenish, bluish Colour which is in all Glafs, and makes it not only clear and diaphanous, but also makes it dark, black, red, purple, according to the Proportion which is added. The Manganese of *Piedmont*, and that of *England*, which are the Best of all others, make a very fair Murray, and at last leave the Glafs white, and take away from it the Greenness and Blueness; the Reason of which Operation seems to be a Change in the Figure, and more Minute Parts of the Metal; for the Fire making the Manganese run, mixes it with the smallest Atoms of the Metal throughout; which by Boiling, and various Agitations and Revolutions of them, form those Reflections of Light, which we call White, Clear, or Diaphanous.

As much Manganese prepar'd must be used in common white Glafs, as in that made of Flint, or Crystal; the Quantity of the Manganese is uncertain, and is only known by Practice and long Tryal, and therefore cannot be positively determin'd, either by Weight or Measure, but must be wholly left to the Eye, Judgment, Tryal and Experience of the Artist. In putting of it in, you are to try whether it has enough of Manganese, or no; if it be greenish, give it more Manganese, with Discretion, and put it in by little and little; for otherwise, instead of a clear, white, diaphanous Colour, which in just Proportion it always gives; if too much be added, it will make a Murray, Purple, or Black, and take away the Splendor of the Metal, which otherwise wou'd be clear and shining; for it is the Property of Manganese, to take away the Foulness and Greasiness which Crystal has, and to make it resplendent, white and clear.

A fourth Ingredient also, has of late been added to the Composition of Glafs, which is Salt of Tartar: If the Proportion of twelve Pound of pure Salt of Tartar be added to an hundred Weight of Fritt, it makes it, without any Comparison, much fairer and pliable to work them Ordinary. This

Salt of Tartar must be very pure, and put in when the Fritt is made, and then be mix'd with the Glafs Stone, *Tarso* or Sand, together with the *Polverine*, *Rochetta*, or *Pot-Ashes* sifted and made fine, whereof the Fritt is to be made. Hitherto of the Materials, but to descend to the Instruments, and the Manner of working in the Glafs, wou'd be beyond the Scope and Intention of this Performance, therefore I shall proceed to shew you how to turn your Materials into Fritt, of which Glafs is made and fashioned.

Fritt is nothing else but a Calcination of those Materials which make Glafs; and tho' they may be melted, and make Glafs without Calcination, yet this wou'd require Length of Time, and occasion much Weariness, and therefore this Calcination was invented to calcine the *Fritt* in the *Calcar*; which when it is calcin'd, and the Proportion of the Materials, is adjusted to the Goodness of the Pot-Ashes; it presently melts in the Pot, and admirably clarifies. *Fritt* seems to be deriv'd from *frittare*, to fry; since, indeed, it is nothing else but Salt or Ashes mix'd with Sand, or Stone, in fine Powder, and so fry'd, or bak'd together; the *Englifs* call the whole Quantity, bak'd at a Time in the *Calcar*, a *Batch*: Then it runs into little Lumps, like *Fritters*, call'd often in *Italian* *Fritelle*, or little Fritts.

It is of three Sorts; First, *Green-Glass Fritt*, made of common Ashes, without any Preparation of them, other than Beating them to Powder, and a hard Sand fetch'd from *Woolwich* in *Kent*. Secondly, Ordinary white *Fritt*, made of Ashes of *Polverine*, or *Barilla*, without extracting the Salt from them, which makes common white Glafs. Thirdly, *Crystal Fritt*, made with *Polverine*, or Pot-Ashes, and Salt of Tartar, with white Crystalline Sand, Crystal, Pebbles or Flints. The Materials must be finely powder'd, washed, searfed, and then incorporated well together, which put into the *Calcar*, will exactly mix in the smallest Particles, and minutest Atoms; for otherwise the Salt and Sand will, in the melting Pot, easily separate one from another, which they are apt enough to do were they not stir'd with the Rake.

To make the second Kind, or common white Sort of *Fritt* for the white Glafs; searfe

searfe the pure Pot-Ashes, and what will not go thorow beat and searfe again; beat also finely, and searfe your *Tarso*, *Crystal*, &c. Take of the Ashes, &c. one hundred Weight, of the Stone from eighty to ninety; pure white Crystalline Sand, wash'd and freed from all its Filth, six Pounds; mix all together, then put them into the *Calcar*, or calcining Furnace when it is hot; at first mix and spread them well in the *Calcar*, with a Rake, that they may be well calcin'd, and continue this till they begin to run into Lumps, the *Fritt* will be perfectly wrought in five or six Hours, being stirr'd all the Time, and a sufficient Fire continued; when you wou'd see whether it be enough or no, take a little of it out, if it be white, yellowish and light, 'tis enough: The Calcining it more than five or six Hours is not amiss; for by how much the more it is calcin'd, by so much the better it is, and the sooner it melts in the Pot; and by standing a little longer in the *Calcar*, it looses the Yellowness and Foulness, which it wou'd communicate to the Glass, and becomes more clear and purified.

It is here to be noted, that in *Italy*, and other Places, when they take the *Fritt* out of the *Calcar*, they throw upon it a good Quantity of cold Water while it is hot, then see it in a Cellar, from whence a Lye will drop, which may be strengthen'd with calcin'd Tartar to be kept for Use, with which they now and then water the *Fritt*, which being heap'd up together in a moist Place, the Space of two or three Months, or more; the said *Fritt* grows into a Mass, like a Stone, and is to be broken with Mattocks; this, when it is put into the Pot, soon melts and makes Glass as white as *Chrystal*; for this Lye is thought to leave, upon the *Fritt*, its Salt, which produceth this Whiteness, and makes it easier to melt, and more *Crystalline*, as aforesaid.

To make *Crystal Fritt*, commonly call'd *Bollito*: Take of the best, clear Pebbles, *Crystal*, white Marble, *Tarso*, or Flint, ground small in a Mill, and sears'd as fine as Flower, two hundred Pounds; of pure Salt of Polverine, or Pot-Ashes, sifted also, one hundred and thirty Pounds; put them into the *Calcar* when it is well heated; for shou'd the *Calcar* be cold, the *Fritt* wou'd never be made: At first, for an Hour, make a tempe-

rate Fire, and always mix the *Fritt* with the Rake, that it may be well incorporated and calcin'd; then increase the Fire, always mixing the *Fritt* well with the Rake, for it is a Thing of great Importance, which you must continually do for five Hours, continuing a strong Fire; then take the *Fritt* out of the *Calcar*, being perfected, and put it in a dry Place, on a Floor, and cover it well with a Cloth, that no Filth, or Dust, may fall upon it; and you must take care of this, if you wou'd have good *Crystal*. The *Fritt*, thus made, will be white as the purest Snow. If the *Tarso* be lean, you may add to the Quantity ten Pounds, or more, of the aforesaid Salt; but this is to be done after making Tryal; you ought always to make Tryal of the first *Fritt*, by putting it into a Crucible, and setting it into the Furnace, if it grow clear suddenly, you will know whether it be well prepared or not, whether it be soft or hard, and whether any more Salt is to be added to it, or to be diminished. This *Chrystal Fritt* must be kept in a dry Place where no Moisture is; for by Moisture it will suffer Damage, grow moist, and run to Water, and the other Ingredient remain alone, which of it self will never vitrifie: This is not to be water'd as the Former, but may lye three or four Months; after which it will be much better to put into Pots, and sooner grows clear.

Green Glass Fritt, of which we have yet said nothing, is a Composition made of grosser Materials; to wit, of common Ashes, without any Preparation of them, or else of Gobbers ground to a fine Powder, and a hard Sand; this requires ten or twelve Hours baking, more or less, according to the Goodness and Softness, or Hardness of the Sand and Ashes. When the *Fritt* is put into the melting Pots, to be made into Glass, in the Second, or Working Furnace, whether it be green Glass, white Glass, or *Chrystal Fritt*, it is to be melted, and kept so long in Fusion till it is purified and refin'd, before it is wrought: It purifies it self by sending up a Scum to the Top of it, which is a superabundant Salt, cast forth from the Metal, and by the Work-men is call'd *Sandiver*, and is to be taken off with the Scumming-Ladle, as the Recrements of the Materials. This *Sandiver* damages the Metall, and

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makes

makes the Glass obscure and cloudy, being always very foul, and therefore is continually to be scumm'd off, and taken away, as long as any of it rises.

To reduce Glass again into its first Principles; take Glass in Powder, what Quantity you please, Pot-Ashes, as much; mix or melt them in a strong Fire, which immediately put into warm Water, so the Glass will dissolve, the Salt will melt and mix with the Water, and the Sand, &c. will fall to the Bottom; by which it appears, that the Fusion of Glass is not the last Fusion, or beyond any Reduction. *Helmont* saith, if you melt Glass in fine Powder, with good Store of *Sandiver*, and set them in a moist Place, all the Glass will soon be resolv'd into Water, whereunto, if you add as much *Aqua Regis* as will suffice to saturate the *Sandiver*, you shall find the Sand presently settle to the Bottom, in the same Weight in which it was first put in; for the Salt in the Glass is imbib'd, and taken up by the *Sandiver* and *Aqua Regis*, and so the component Parts, analiz'd into their former Principles.

As to the Way of making *Prince Rupert's Glass Drops*: They are made of green Glass, well refin'd, for otherwise they will not succeed, but crack and break presently after they are drop'd into Water: The best Way of making them, is to take up some of the Metal out of the Pot, upon the End of an Iron Rod, and immediately let it drop into cold Water, and lye there till it is cold; where observe, *First*, If the Metal be too hot when it drops into Water, the Drop will certainly frost, and crackle all over, and fall into Pieces in the Water. *2dly*, Every one of them that cracks nor in the Water, but lies in it till it is quite cold, is sure to be good. *3dly*, That the most expert Artists know not the just Measure of Heat requir'd, and therefore cannot promise before-hand that the Next shall be good, for many of them miscarry in the Making, and oftentimes two, or three, or more, prove ill for one that hits. *4thly*, If one of them be taken out of the Water whilst it is red hot; the small Part of the Tail or Thread it hangs by; so much of it as has been in the Water, will, upon breaking, fall into Dust, but not the Body of the Drop, tho' its Cavities are full as large. *5thly*, If one of them be cooled in

the Air, or on the Ground, hanging by the Thread, it becomes, in all Respect, like other Glass. *6thly*, The Outside of the Glass drops that are cool'd in Water, is close and smooth, like other Glass, but within it is spungy and full of Cavities or little Bubbles. *7thly*, The Figure of it is roundish, or Oval at the Bottom, nor much unlike a *Pear* or *Pearl*, wreath'd from the Beginning of the Neck as it grows smaller, and terminating in a long Neck, for the most Part bended or crooked. *8thly*, If a Glass Drop be let fall into scalding hot Water, it will crack and break in the Water, either before the red Heat is over, or soon after. *9thly*, If it be taken out of the Water before it be cold, it will certainly break. *10thly*, If they be drop'd into Vinegar, or Spirit of Wine, or Water in which Nitre, or Sal Armoniac have been dissolv'd, or Milk, they never miss to frost, crack, and break to Pieces. *11thly*, If drop'd in Oil-Olive, they do not so frequently miscarry as in cold Water, nor have so large Blebs or Bubbles in them, but some Part of the Neck, and small Threads break like common Glass; and if the Neck be broken near the Body, and the Body held close in the Hand, it breaks not into small Parts, nor with so smart a Force and Noise, as those made in cold Water. *12thly*, If you break off the Tip of the Thread, or Neck of one of those made in Water, the Whole will fly immediately into very minute Parts, which will easily crumble into course Dust. *13th*, A Blow with a small Hammer, or other hard Instrument, only upon the Body of one of those made in Water, will not break it. *14th*, One of them broke in the Hand, under Water, strikes the Hand more smartly, and with a brisker Noise than in the Air; but fasten'd in a Ball of Cement, half an Inch in Thickness, upon the Breaking off the Thread, or Tip of it, it breaks the Ball in Pieces like a *Granado*. *Lastly*, Some of them being ground upon a Tile, or other Stone, break when the Bottom is a little flatted, and others not till half is rubbed, or ground off.

To prepare white Glass, or Crystal Glass, Take *Fritt* of ordinary Pot-Ashes, to make a fair, white, common Glass; but *Fritt* of the best, whitest and hardest Pot-Ashes, in great Lumps, makes the Glass, which is call'd

call'd *Crystalline Glafs*, not Crystal itself: You must put as much *Manganese* in one Sort as to another, cast the White and Crystal-like Glafs, into Water, that you may have them clear in Perfection. You may make them without this Casting into Water; yet it is necessary, if you wou'd have them fairer than ordinary, and may be repeated, if you wou'd have them yet more resplendent, and then you may work them into what Vessel you please. To have the Glafs yet whiter, calcine them that they may purifie well, and have but few Blisters; and also add to a hundred Pounds of the *Fritt*, twelve Pounds of pure Salt of Tartar, which must be put in when the *Fritt* is made, and so mix'd with Sand, and Pot-Ashes sifted, and then make *Fritt* thereof, as before; and so will the Metal be fairer, beyond Comparison.

Of Colouring Glafs.

To calcine Copper or Brass variously, for various Colours: *First*, This is done by *Ferretto* of Spain, which is thin Copper-Plates laid in bits upon Sulphur *Stratum super Stratum*, cover'd, luted, and calcin'd for two Hours, then beaten small and sears'd: Or, *2dly*, It is prepar'd thus with Vitriol, instead of Sulphur. *3dly*, You may make a Calcination of Brass, with Sulphur, thus: Take thin Plates in Bits, which lay upon Sulphur *Stratum super Stratum*, which calcine for twenty-four Hours, then powder and searse it, and reverberate again for twelve Days; grind, searse, and keep it for Use to colour Glafs of a transparent Red, Yellow, Chalcedony. *4thly*, Calcine Brass by itself, by putting Bits of Brass Plates into a Crucible, and luting on the Top, which makes Glafs of a Sky-Colour and Sea-Green. *5thly*, Calcine Scales of Brass *per se*, which if well done will be red: Scales of Brass thrice calcin'd, become of a Ruffet Colour, and will make a Sea-Green, an Emerald, a Turchois, and a beautiful Sky, with many other Colours.

To tinge Glafs of a Sea Green; take *Crystal Fritt*, put it in a Pot, without any *Manganese* added; for tho' this makes the Metal clear as to Crystal, yet it gives a Quality in the Glafs which leaves the Colour black,

or very foul; melt it and take off the *Sandiver*: Being well and perfectly clarified, take of this Crystal twenty Pounds; Brass of the first, third, or sixth Preparation, six Ounces; *Zaffer* prepared, one Ounce and Half; mix these two Powders well, and put to the said Crystal at three Times; at First it makes the Metal swell very much, therefore mix the Glafs with the long Squares; then let it settle that the Colour may be incorporated for three Hours, then mix again, with the long Square, and take a Proof thereof; put in rather too little, than too much of the Colour, for then it may be easily heightened; at the End of twenty-four Hours, after it has had the due Colour, it may be wrought, mixing it first well from the Bottom of the Pot, that the Colour, may be equally mix'd and spread through all the Metall, and united with it, otherwise it settles to the Bottom, and the Metal at Top becomes clear. At *Moran* they take half *Crystal Fritt*, and half *Pot-Ash Fritt*, and proceed as before, whence arises a fair Sea-Green, but the Former is fairer.

For a Sky-Colour, or Sea-Green: Take *Fritt*, made of the best Pot-Ashes, which purifie from its *Sandiver*; and to twenty Pounds thereof add Brass, of the fourth Preparation, six Ounces, and put it in at three Times, as aforesaid. At the End of two Hours re-mix the Metal, and make a Proof, being well colour'd, leave it so for twenty four Hours, so will you have an excellent Sky Colour, varied with other Colours, then work it.

Another Sea-Green yet more excellent, is thus made: Take *Caput Mortuum* of the *Vitriol* of Venus, made without Corrosives, expose it to the Air for some Days, and draw from it, without any Artifice, a pale, green Colour, which being powder'd, to six Ounces of it add *Zaffer* prepar'd one Ounce and Half; *Crystal Fritt* purified, as before, twenty Pounds, work as in the first Green, so will you have the most beautiful Colour of the Three.

To make a Gold Yellow in Glafs, or a Kind of Amber Colour: Take *Crystal Fritt* two Parts, pure Pot-Ashes *Fritt* one Part, both made of *Tarso*, which is much better than Sand, but if of natural Crystal it is yet better; mix these well together, of which

take twenty Pounds; of *Tartar* well beaten, and sear'd fine, *Manganese* prepar'd, of each three Ounces; mix these Powders well together first, then with the *Fritts*, put them in the Furnace, and let them stand four Days on an ordinary Fire, because they rise much. When the Metal is purified and well colour'd, which is at the End of four Days commonly, it will be very fair and beautiful, and is then to be wrought into Vessels, &c. This Colour you may make deeper or lighter, by adding, or diminishing the *Powders* or *Fritts*. If you would have it yet fairer, and more beautiful, you must take all *Crystal Fritt*: Moreover, another thing is to be observ'd, you must put the Powder, at several Times, into the *Fritt*, not into the Metal, for then it colours not.

To make a black Colour in Glas: Take Pieces of broken Glas of many Colours, grind them small, and put to them Powder made of *Zaffer* prepar'd, two Parts; *Manganese* prepar'd, one Part; this Glas, purified, will be a most admirable Black, shining like Velvet, and will serve for Tables, &c. Another brighter Black: Take *Fritts* of *Crystal* and *Pot-Ashes*, of each ten Pounds; *Calx* of *Lead* and *Tin* two Pounds; mix all together, set them in a Pot in the Furnace, well heated; and when the Metal is pure, add six Ounces of Powder made of *Steel*, well calcin'd; *Scales* of *Iron*, finely powder'd, of each equal Parts; let them boil twelve Hours, now and then mixing the Metal, then work it. Another Black, yet clearer: Take of the best *Pot-Ash Fritt* twenty Pounds, *Manganese* prepar'd, one Pound and a Quarter, *Tartar* in fine Powder, six Pounds; mix them, and put them into the Furnace leisurely; let the Metal purifie, which will be at the End of four Days; mix again well, then cast it into fair Water, and it will be a Black beyond any of the Former.

To make a fair Milk-white, call'd *Lattimo*; Take *Crystal Fritt*, twenty Pounds; calcin'd *Lead* and *Tin*, three Pounds and a Half; *Manganese* prepar'd, one Ounce; mix all together, and put them into a Pot heated, let them stand twelve Hours, that the Materials may be melted, and at the End of eight Hours you may work it. It is a fair White, and to make a Peach Colour of it, add a suf-

ficient Quantity of *Manganese* prepar'd, and it will be a Peach Colour, but you must work it in time, otherwise it will fade again.

To make a deep Red; Take *Crystal Fritt*, twenty Pounds; *Tin* calcin'd, two Pounds; broken Pieces of white Glas, one Pound; mix these well together, put them in a Pot to run and purifie them; being melted, add leisurely, one Ounce of this Mixture; *Steel* calcin'd and ground, *Scales* of *Iron* finely ground, of each alike; mix them well together, and in about five Hours it will be perfected: Too much of the Powder makes the Metal black and opacous, whereas it ought to be transparent; if it be too black or deep, put in of the fourth Preparation of *Brafs*, about an Ounce, and mix them many times, and in about three or four Repetitions it will become as red as Blood: Make several Tryals, and when you find it right and good, work it speedily, otherwise it will lose its Colour, and become black; you must also leave the Mouth of the Pot open, else the Colour will be lost. Let it not stand above ten Hours in the Furnace, and suffer it not to cool, if possible: If you find the Colour fades, put in some of the *Steel* and *Iron scale Powder* aforesaid, and it will restore it again; 'tis a nice Colour, therefore speedily to be wrought.

For a transparent Red in Glas, like Blood; Take common white Glas, twenty Pounds, Glas of *Lead*, twelve Pounds, put them into a Pot glaz'd with white Glas; when the Glas is boil'd and refin'd, add *Copper* calcin'd to Redness, as much as you please; let them incorporate, mixing well the Glas, then add so much *Tartar* in Powder, as may make the Glas Blood-red: If the Colour be too pale, add more of the calcin'd *Copper* and *Tartar*, till the Colour is exact. Another transparent Red: Dissolve *Gold* in *Aqua Regis*, many Times, pouring the Water upon it five or six Times; then put this Powder of *Gold* in earthen Pans, to calcine in the Furnace, till it becomes a red Powder, which will be in about forty Days; add this Powder by little, in sufficient Quantities, to fine *Crystal Glas*, which has been often cast into Water, and it will give the transparent Red a Ruby Colour.

To

To make Glafs of Lead: Take of the Best red Lead what Quantity you please, suppose fifteen Pounds; *Crystal Fritt*, or common white Fritt, twelve Pounds; mix them as well as may be, and put them into a Crucible with a strong Bottom, which put into two other Crucibles of like Strength, one within another, and then put them into a Fire of Suppression; the Lead will pass thorow the first and second Crucible, and in the Third you will find the Glafs: or thus; Take *Minium*, fifteen Pounds, Salt of Pot-Ashes, eight Pounds, Sand the same Quantity; mix and put them into Crucibles as before, for fear of breaking, and make a Fire of Suppression, so will you have very good Glafs of Lead. To work the said Glafs of Lead: Before you take it upon the hollow Iron Pipe, let it be a little rais'd in the Pot, then take it out, and let it cool a little, and so work it on the Marble, being clean. At first let the Marble be well wetted with cold Water, otherwise the Glafs will scale it, and be its self also discolour'd, incorporating the Scales into it self, and continually wet the Marble, whilst you work this Glafs, otherwise it will lose all its Fairness and Beauty; and do this as often as you take the Metal out of the Pot. This Kind of Glafs is so tender and brittle, that if it be not cool'd a little in the Furnace, before it is wrought into drinking Glasses, Cups, or other Vessels, and taken a little at a Time, and held on the Irons, and the Marble continually wetted, 'tis impossible to work it.

To make a Gold Yellow in Glafs, of Lead: Take *Crystal Fritt*, calcin'd Lead, or *Minium*, of each sixteen Pounds; mix and searse them well, add to them Brass, thrice calcin'd, six Ounces; *Crocus Martis*, made with Vinegar, forty eight Grains; put

them well mix'd into the Furnace, let them stand twelve Hours, in which Time it will be clear, mix them and make a Proof; if it be greenish, add a little more *Crocus Martis*, till it becomes of a most fair Gold Colour.

A transparent Red in Glafs, is made thus: Take impalpable Powder of the best *Manganese*, refin'd Nitre, of each equal Parts, calcine and reverberate twenty four Hours; then wash away the Salt, with fair warm Water, and dry the Powder, which will be of a red Colour; add to it its equal Weight of Sal Armoniack, grind them together on a Porphyry, with Spirit of Vinegar; then in a Retort, with a large Body, and long Neck, sublime in Sand for twelve Hours; break the Glafs, and take what is sublim'd to the Neck and Body of the Retort, and mix it with what remains at Bottom, adding as much fresh *Sal Armoniack* as is wanted in the Weight of the first Sublimation; grind as before on a Porphyry, with Spirit of Vinegar, and Sublime also in the same Manner; repeat this Work so long, till the *Manganese* remains all at the Bottom, fusible.

A most excellent Blue to colour Glafs: Dissolve Copper in *Aqua fortis*, made with Nitre and *Hungarian*, or *Roman Vitriol*, which sharpens the *Aqua fortis*, and yields some Particles of Copper to it, then precipitate it with Spelter or Zink, and this has sometimes been done with the Refiner's double Water impregnated with Copper; by this Means you shall have a most incomparable Blue for Colouring of Glafs: There are almost an infinite Variety of Ways to colour Glafs, among which I thought these few might not be unacceptable, to give the Curious a little Insight into this Art, which has of late Years receiv'd such vast Improvement.

BOOK