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J. Overton

John Overton



T R E A T I S E

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F O R E I G N V E G E T A B L E S .

C O N T A I N I N G

An Account of such as are now commonly used in the Practice of P H Y S I C K .

W I T H T H E I R

Descriptions, chymical *Analyses*, Virtues, Doses, and various Effects.

Chiefly taken from the

M A T E R I A M E D I C A

O F

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L O N D O N :

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THE

P R E F A C E.

I N the following Abstract from *Geoffroy's Treatise on the Materia Medica*, I have given an Account of such Exoticks or foreign Vegetables as are contained in the new Catalogue of the College, and usually prescribed in Medicines.

Among foreign Vegetables I have ranked, not only those that are imported to us from Abroad, but some also that are produced in great Plenty in *England*; which notwithstanding, as they grow in other Countries spontaneously, and here by Culture only, are not to be accounted Natives of this Climate.

In treating of these the Order observed is conformable to the Plan laid down at the Beginning of the Book ;

whereby they are divided into separate Chapters, with respect to their Parts used in Medicines. The Chapters are subdivided into Articles: Wherein I have set down, 1. The different Names, ancient and modern, of each Drug; 2. A Description of it; 3. The Marks directing how to choose it; 4. The synonymous Names, and native Soil of the Plant to which it belongs, if yet ascertained; 5. Its chymical *Analysis*, when judged requisite; 6. Its Virtues, Doses, with sometimes its bad Qualities, and Reasonings upon the Manner in which it operates; and, in the last Place, are commonly subjoined some Forms, according to which it may be conveniently administered.

In short, I have translated whatever appeared to me in my Author necessary to be known by Gentlemen who are engaged in the Study, or Practice of Physick; and believe, or at least hope, that nothing, that might prove of real Advantage to them, is omitted.

I have

I have added, by way of Supplement, a few Plants upon which my Author has been silent; and have likewise adjoined the History of others, with us properly reckoned Exoticks, which he has treated of as domestick Plants; because, to furnish a more uniform Account of them, I have been obliged to alter his Method, and to borrow from other Writers on Botany.

Moreover, the Editor of the *Latin* Copy of this Treatise has made many Additions to it under the Direction of *M. Bernard de Jussieu*, a curious Naturalist; and these Additions being sometimes very pertinent to the Subject of our Inquiry, several of them are inserted in the following Sheets, and, to distinguish them, are included between Crochets, as in the Original.

Having now premised a summary View of what is done; it may perhaps be expected that something should likewise be said, before we conclude, relating to the learned Physician from whose

Writings the Work is taken : But I suppose it needless to mention any thing more than his Name ; since his Merits have been published in an *Elogium* by the ingenious *M. de Fontenelle* *, and his Character, as an Author, is well known. I shall therefore only add, that I have endeavoured to make an useful Branch of his Knowledge of more general Benefit ; and if my Endeavours answer this End, by conducing to the Improvement of the *English* Reader, it will be a Satisfaction to me that I have so employ'd them.

* *Histoire de l'Academie Royale des Sciences, Ann. 1731.*

An EXPLANATION of Authors Names
abridged in this TREATISE.

A.

ACTUAR. Actuarius.

Aët. Aëtius Amidenus.

Androm. Andromachus, de Medicamentis compositis ad affectus externos. Apud Galenum.

Avicen. Avicenna.

B.

Bellon. Observ. Bellonii Observationes.

Bont. de Med. Ind. Bontius de Medicinâ Indorum.

Breyn. Cent. Breynii Centuriæ.

Breyn Prodr. Ejusdem Prodromi duo.

Burm. Thes. Zeyl. Burmanni Thesaurus Zeylanicus, exhibens Plantas in Insulâ Zeylanâ nascentes.

C.

Cesalp. Cæsalpinus.

C. B. P. Caspari Bauhini Pinax Theatri botanici.

Casp. Hoff. Casparus Hoffmannus, de Medicamentis officinalibus, tam simplicibus, quam compositis.

Cat. H. L. B. & Hort. Lugd. Bat. Cat. Horti Lugduno-Batavi Catalogus, Auctore Paulo Hermanno.

Catesb. Hist. Catesby's natural History of Carolina.

Clus. exot. Clusii exoticorum, libri 10.

Clus. Hist. Ejusdem variarum Plantarum Historia.

Commel. Hort. med. Amst. Caspari Commelini Catalogus Horti medici Amstelodamensis.

Commel. Flor. Mal. ejusdem Flora Malabarica, sive Horti Malabarici Catalogus.

Corn. Cornuti Canadensium Plantarum, aliarumque nondum editarum, Historia.

Corol. Inst. R. H. Corollarium institutionum rei herbariæ.

D.

Dale Pharmacol. Samuelis Dalei Pharmacologia.

Dale Suppl. ejusdem Supplementum.

De Bry. Theodori de Bry Florilegium renovatum
& auctum.

Diosc. Dioscorides.

D. Shaw Catal. Tho. Shaw, Catalogus Plantarum
quas observavit in Africae & Asiae partibus.

E.

Ephem. Germ. Ephemerides Medico-physicae Ger-
maniae, sive Miscellanea curiosa Medico-physica.

F.

F. Hoffmannus. Fredericus Hoffmannus.

Fuchs. Fuchsius. De Historia Stirpium Commentarii
insignes, &c. Auctore Leonardo Fuchsio.

G.

Gal. Galenus.

Garz. Garzias ab Horto.

G. Camellus. Georgius Andreas Camellus, è Socie-
tate Jesu : Scripsit Historiam Stirpium Insulae Lu-
sonis, & reliquarum Philippinarum. Extat in Hist.
Plant. J. Raii. Tom. iii.

Ger. Gerardus.

Grim. Ephem. Germ. Grimmius in Ephemeridibus Ger-
manicis.

H.

H. Beaum. Herbertus a Beaumont. Horti Beau-
montiani exoticarum Plantarum Catalogus.

Herm. & Herman. Paulus Hermannus.

Herm. H. Lug. Bat. ejusdem Horti Academici Lug-
duno-Batavi Catalogus.

Herm. Mat. Med. MSS. ejusdem Materia Medica
manuscripta, deinde Typis mandata sub titulo
Cynosurae Materiae Medicæ.

Herm.

Herm. Mus. Zeylan. ejusdem Musæum Zeylanicum, five Catalogus Plantarum in Zeylana spontè nascentium.

Herm. Parad. Bat. Prodr. ejusdem Paradisi Batavi Prodrömus.

Hern. & Hernand. Hernandez. Nova Plantarum, Animalium, & Mineralium, Mexicanarum Historia.

Hippocr. Hippocrates.

Hist. Oxon. vide *Morifs.*

H. Amst. vide *Commel.*

H. Cliff. Hortus Cliffortianus, auctore Linnæo.

H. M. & Malab. Hortus Malabaricus Indicus.

H. R. P. Hortus Regius Parisiensis, Auctore Antonio Vallot.

I.

I. R. H. Institutiones Rei Herbariæ, Josephi Pitton de Tournefort.

Joan. And. Stiffer. Joannes Andreas Stifferus. Horti Helmstadii Catalogus. Ejusdem Botanica curiosæ.

J. B. Joannes Bauhinus. Historia Plantarum.

Jonst. Dendr. Jonstoni Dendrographia, five Historia naturalis de Arboribus & Fruticibus.

K.

Kæmpf. amœn. exot. Engelberti Kæmpferi amœnitates exoticæ.

L.

Lin. gen. Pl. Caroli Linnæi genera Plantarum.

Lin. H. Cliff. Ejusdem Hortus Cliffortianus.

Linsch. Linschotus. Itinerarium, ac Navigatio in Orientalem, five Lusitanorum Indiam.

Lob. icon. Lobelii Plantarum seu Stirpium icones.

Lob. Obs. Ejusdem Observationes.

M.

M.

Marcgr. Bras. Marcgravii Historia rerum naturalium Brasiliæ.

Matth. Matthioli Senensis Medici Commentarii in sex libros Pedacii Dioscoridis.

Mer. Surin. Metamorphosis insectorum Surinamensium, per Mariam Sibillam Merian.

Mon. & Monard. Monardus Medicus Hispalensis, Linguâ Hispanicâ composuit Medicamentorum simplicium, quæ in Europam ab Americâ transeuntur, Historiam; quam deinceps Latinè vertit Clusius; & tandem gallicè edidit Antonius Colin, Pharmacopœus Lugdunensis, unâ cum Operibus Garziæ ab Horto & Acoftæ.

Mor. Hist. Oxon. Roberti Morisoni Plantarum Historia universalis Oxoniensis.

N.

Nicol. Myrep. Nicolaus Myrepsus.

O.

Ovied. Oviedi Indiæ Occidentalis Historia generalis.

P.

Palud. Annot. in Linsch. Paludani Annotationes in Linschoti Historiam Indiæ.

Par. Bat. Prodr. Paradisi Batavi Prodrromus.

Park. Parkinson.

P. Ægin. Paulus Ægineta, Medicus Græcus insignis.

P. Herm. Paulus Hermannus.

P. Pom. Pierre Pomet. Histoire generale des Drogues Simples.

Pis. & Pison. Bras. Guillelmus Piso Batavus, Medicus Amstelodamensis. Historia naturalis Brasiliæ.

Pis. Mant. arom. Ejusdem Mantissa aromatica.

Plin. C. Plinius secundus, in Historia naturali.

Pluk. Almag. Leonardi Pluknetii, M. D. Almagestum Botanicum.

Pluk. Phyt. Ejusdem Phytographia, five Stirpium illu striorum, & minus cognitarum icones.

Plum. n. Plant. gen. Plumerii nova Plantarum Americanarum genera.

Plum. Botan. Amer. MS. Ejusdem Botanicum Americanum, Manuscriptum.

P. Alp. de Plant. Ægypt. Prosperi Alpini de Plantis Ægypti Liber.

P. Alp. exot. Ejusdem de Plantis exoticis Libri duo.

R.

Raii Hist. Joannis Raii Historia Plantarum.

Rauwolf. Leonardus Rauwolfius, Medicus Augustanus, in Peregrinatione sua in Oriente plurimas Plantas descripsit, & icones adjecit.

S.

Serap. Joannes Serapion, Arabs Medicus celeberrimus.

Shaw. Vide *D. Shaw.*

Sloane. Cat. Plant. Catalogus Plantarum Insulæ Jamaicæ, Auctore Hans Sloane.

Sloane Hist. nat. Ins. Jamaïc. The natural History of Jamaica by the same.

T.

Tab. Hist. Jacobi Tabernæmontani Historia Germanica tribus partibus, edita cum Figuris.

Tab. icon. Ejusdem icones.

Theophr. Theophrastus.

Other Abbreviations.

ÆGYPT. Ægyptiorum.

Anglor. Anglorum.

Arab. Arabum.

Brasiliens. Brasiliensium.

Ejusd.

Ejusd. Ejusdem.
Græc. recent. Græcorum recentiorum.
Græc. veter. Græcorum veterum.
Indor. Indorum.
Nonnul. Nonnullorum.
Off. Officinarum.
Quorumd. Quorumdam.
Sinens. Sinensium.

Weights, Measures, &c.

G R. Grain.
 ℥. Scruple.
 ℥. Drachm.
 ℥. Ounce.
 ℔. Pound. In Liquids a Pint.
N. B. The *French* Apothecaries Pound, which is here referred to, contains sixteen Ounces, and the Scruple, twenty-four Grains. The Ounce and Drachm are divided as those used by our Apothecaries.
 ā. or *ana.* of each.
B. A. Sand-Heat.
B. M. Water-Heat.
B. V. Vapour-Heat.
Cocb. Spoonful.
Gut. Drop.
M. Handful.
Pug. Pugil, as much as can be taken up by two Fingers, and the Thumb.
p. æ. Equal Parts.
q. s. A sufficient Quantity.
q. v. What Quantity you please.
fs. Half.

A
T R E A T I S E
O N
F O R E I G N V E G E T A B L E S.

THE foreign Vegetables of which we shall treat, not being brought over to us entire, but only such Parts of them as are used in Medicines; we shall therefore, with Regard to those Parts, distribute them into distinct Classes, or Chapters: Whereof the first shall include Roots; the second, Barks; the third, Woods; the fourth, Marine Plants; the fifth, Stalks, Leaves and Flowers; the sixth, Fruits and Seeds; the seventh, liquid and concreted Juices; the eighth, Juices extracted from Plants by Art; and the ninth, fungous Productions, or Substances growing upon Plants. We shall now speak of these in Order.

C H A P. I.

Of Roots.

ARTIC. I. Of ACORUS.

ACORUS *verus*, officinis falsò *Calamus aromaticus*, Gerard. **Ανογον*, Diosc. et Gal. *Acorus verus seu Calamus aromaticus officinarum*, C. B. P. *Calamus aromaticus vulgaris*, *multis*, *Acorum*, J. B. The true
B Acorus

Acorus is a long Root full of Joints, about as thick as one's Finger, and somewhat flattish; on the outside, when fresh, of a pale Colour inclining to Green, but afterwards changing into a reddish Yellow. It has an acrid, bitterish, aromack Taste, yet partaking in some Degree of the Taste of a Leek or Onion, and a fragrant aromack Smell; though not so pleasant while it is green. It ought to be chosen fragrant and not too old, being unfit for Use when mouldy, rancid, or decayed by long keeping. It grows in moist Places in *Lithuania* and *Tartary*; and likewise by the Sides of Rivulets in *Holland* and *England* *.

To this the modern *Greeks* gave the name of *κάλανος ἀρωμάτικος*, though it is entirely different from the plant which was so called by *Dioscorides* and *Galen* †.

The Root of Acorus, in Distillation, yields a considerable Quantity of essential Oil, and some Portion of volatile urinous Spirit: Whence it is evident that it abounds with a volatile aromack oily Salt.

Dioscorides ascribes to it a Virtue of heating, provoking Urine, relieving Pains of the Side, Breast and Liver, dispersing indurated Tumours of the Spleen, asswaging the Gripes, and of curing Stranguries and the Bites of Serpents; and he asserts that

* It grows in *Cheshire* and *Surry*, and therefore is not, properly speaking, an Exotick; yet I have here considered it as such, because what we use of it in our Shops is imported from Abroad.

† The *κάλανος ἀρωμάτικος* of *Dioscorides* and *Galen*, is the Stem of an arundinaceous Plant, hollow like a common Reed geniculated and slender, being about as thick as an Oat-Blade, or Goose-Quill, of a pale yellowish Colour without, and white within, containing a fungous light Pith, like a Spider's Web rolled up together. It has an agreeable bitterish Taste and fragrant Smell. This is the *Calamus aromaticus* which *Galen* orders in the *Theriaca*.

it is an useful Ingredient in all Antidotes whatsoever. It is commended by most Physicians to strengthen the Stomack, discufs Flatulencies, appease Gripings of the Belly, resolve Obstructions of the Womb and Spleen, promote the *Menses*, and to increase the Motion of the Blood and Spirits; and it is also reckoned alexipharmack.

It is usually given either in Substance or Infusion: In Substance, from gr. xij. to ʒss in Infusion to ʒij.

Take of the Root of Acorus in Powder gr. xv. Elecampane gr. x. Ambergrease gr. iij. Sugar-candy ʒj. Mix, and make a Powder, or with q. s. of the Syrup of Quinces make a Bolus. This is a good Remedy in Weakness of the Stomach.

Take of the Root of Acorus sliced ʒij. Infuse in ʒvi. of strong Wine or warm Water, and give the strained Liquor to raise the Appetite, appease a flatulent Colick, and to prevent contagious Distempers.

The Roots candied are agreeable to the Palate and Stomach. They are commended in Catarrhs to dry up and waste the superfluous Moisture; and the *Turks* eat them in a Morning against the Contagion of noxious Air.

ARTIC. II. Of ANGELICA.

Angelica Sativa, C. B. P. Imperatoria Sativa, Inst.

R. H. The Root of Angelica is three Fingers thick, full of Fibres, on the outside of a dark Colour and wrinkled, but within white, soft and succulent, having an acrid, bitter Taste, and a pleasant aromatick Smell. It is brought from *Bohemia*,

the *Alps*, the *Pyrenean Mountains*, and also from the Hills of *Auvergne**. For Use we prefer it when large, of a dark brown Colour on the outside, white within, not carious, of a fragrant Smell something like Musk, and an acrid, aromattick Taste.

In a chymical Analysis, from four Pounds fourteen Ounces of the fresh Roots of Angelica, were obtained about ten Ounces of urinous Phlegm; three Pounds six Ounces of acid Phlegm, and one Ounce of essential and thicker Oil together. The *Caput Mortuum* weighed six Ounces and an Half, from which were got three Drachms fifty-four Grains of lixivial Salt merely alkaline, and six Drachms twelve Grains of insipid Earth. We could observe no Appearance of any volatile concreted Salt, but the Leaves of the Plant, being distilled, afforded some Grains.

From this Analysis, as also from its acrid, bitter, aromattick Taste, and fragrant Smell, it is evident that the Root of Angelica consists of a Salt approaching to Sal Ammoniack mixed with a large Proportion of Oil, and a small Quantity of Earth: But these Principles are not so intimately combined as in some artificial Compounds of the like Nature; as, for Instance, in a Mixture of the *Spiritus volatilis oleosus* with the dulcified Spirit of Vitriol or of Salt, if a small Portion of Earth be added to give them Solidity.

Angelica is accounted stomachick, cordial, sudorifick, vulnerary and alexipharmack. It is good against Poisons, in malignant Distempers and the Plague. The Root and Seed are preferred to the other Parts of the Plant. As a Preservative against the Plague, the Root macerated in Vinegar is held to the Nostrils, or under the Tongue and chewed,

* The best, and what is generally used in *England*, comes to us from *Spain*.

or the Vinegar is drank in the Morning on an empty Stomach. In Times of Pestilence, being reduced to Powder, it is scattered upon Clothes, to prevent their taking Infection.

Take of the Root of Angelica ʒj. Make a Powder, and give it in a Glafs of strong Wine. Or, Take of the Root of Angelica in Powder ʒfs. Venice Treacle ʒj. Mix, and let them be taken in a Draught of *Carduus* or *Angelica*-Water, and be repeated every sixth Hour, to promote Sweat in the Plague.

The green Root candied with Sugar, as also the Foot-stalks of the Leaves peeled and candied, being taken in a Morning, are commended against the Plague and Contagions of the Air, and to cure cold Affections of the Breast and Lungs. They are likewise chewed in the Mouth to correct an offensive Breath.

ARTIC. II. Of BIRTHWORT.

Cicero tells us that Birthwort took the Name of *Aristolochia* from one *Aristolochus*, who first discovered it. *Aristotle*, on the contrary, says it was so called from *Aristolochia*, a certain Woman. But *Dioscorides* affirms the Name to have been derived from its Virtue of promoting the *Lochia* (viz.) "Ἀριστή ταῖς λοχίαις" which indeed is most probable.

Dioscorides and *Galen* have mentioned three Species of Birthwort, and *Pliny* four; of which we shall proceed to give an Account.

1. *Aristolochia rotunda*, Off. Ἀριστολοχία στρογγύλη, *Diosf. et Gal. Aristolochia prima seu fœmina*, *Plin.* Round Birthwort is a solid, tuberous Root, three Inches thick, roundish, wrinkled, and furnished with some Fibres, of a brown Colour without, and

a pale Yellow within, and covered with a thick Bark. It is acrid, aromattick, and leaves a nauseous Bitterness upon the Tongue.

It ought to be chosen well preserved, heavy, not too much wrinkled, full and firm, having its natural Smell and Taste quick and strong, not falling into Dust when broken, nor mouldy, carious, nor worm-eaten. Which Marks of Goodness are also applicable to other Roots.

The Plant is called *Aristolochia rotunda*, flore ex purpurâ nigro, C. B. P. *Aristolochia rotunda*, J. B. It grows in *Languedoc* and *Provence* *.

2. *Aristolochia longa*, Off. Ἀρισολοχία μακρὰ et δακτυλίτις, Diosc. et Gal. *Aristolochia altera seu mas*, Plin. Long Birthwort is an oblong cylindrical Root, as thick as one's Thumb, and sometimes as thick as one's Arm, and a Foot long, wrinkled, of a brown Colour without, and yellowish within, having a Taste and Smell like round Birthwort, but weaker.

The Plant is called *Aristolochia longa vera*, C. B. P. *Aristolochia longa*, J. B. It grows in the same Places with the former.

3. *Aristolochia Clematidis*, Off. Ἀρισολοχία κληματίτις, Diosc. et Gal. Ἀρισολοχία λεπτή, i. e. tenuis ejusdem Gal. et Andromack. *Aristolochia tertia seu Clematidis*, Plin. Creeping Birthwort is a long Root, spreading its Branches a great Compass in the Earth, which are very numerous and slender, being scarce as thick as a Goose-quill, of a brown Colour and yellowish within. It has a stronger Smell than the two former, and a bitter Taste, which, from the Subtilty of its Parts, is immediately perceptible.

* It likewise grows, with the three following Species, in *Spain*, *Italy*, and other warm Climates.

The Plant is distinguished *Aristolochia Clematitis recta*, C. B. P. *Aristolochia Clematitis vulgaris*, J. B. *Aristolochia Sarracenicæ*, Dodon. It grows plentifully in *Languedoc*, about *Montpellier*, from whence the dry Root comes to us. It is also found about *Paris*.

4. *Aristolochia tenuis vel Pistolochia*, Off. *Aristolochia quarta*, seu *Pistolochia et Polyrrhizos*, Plin. Small Birthwort is a Root composed of many long, slender Fibres, depending from one common Head, of a yellowish Colour, an aromattick Smell not unpleasant, and an acrid, aromattick Taste. This seems to have been a Stranger to *Dioscorides* and the ancient *Greeks*.

The Plant to which this belongs is the *Aristolochia Pistolochia dicta*, C. B. P. *Aristolochia polyrrhizos*, J. B. *Pistolochia*, Dodon. It grows in *Languedoc*.

The Roots of Birthworts, in a chymical *Analysis*, afford a large Quantity of Oil and Earth, no volatile concreted Salt, a moderate Quantity of urinous Spirit, and a great deal of acid Phlegm. The fixt Salt, extracted from their Ashes, rendered the Solution of corrosive Sublimate foul and milky, not yellow. Moreover, the Juice of these Roots stains blue Paper red, or Paper which has been dipped in the Juice of Turnsole. Whence it appears, that their Virtues are owing to a certain essential Salt, compounded of Earth, more than saturated with acid Salt, and combined with a moderate Portion of Ammoniacal Salt, and a large Quantity of Sulphur.

The round and long Birthworts are much used in Physick, but the creeping and small Birthworts are seldom met with in Prescriptions*. The two

* The long and creeping Birthworts are now the only Sorts retained in the *London Dispensatory*.

first are discutient, attenuating and moderately deterfivē. Round Birthwort, however, is supposed to have finer Parts, and to be more efficacious. Therefore (says *Galen*) where gentle Deterfion is required, the *long* is more convenient; as for Ulcerations of the fleshy Parts, and in Fomentations for the Womb. But when we propose to resolve thick Humours, the *round* is preferable.

All the Birthworts are cephalick, thoracick, uterine, vulnerary, and alexipharmack. The *round* is universally allowed to be more attenuating than the *long*; and the *long*, on the contrary, is more powerfully deterfivē than the *round*. Wherefore, in Affections of the Breast from thick Humours, in Flatulencies and colick Pains; in Obstructions of the Spleen and Womb, and in Ruptures of Vessels to dissolve grumous Blood, round Birthwort ought to be used; for it draws off various Excrements, by the *Menses*, *Urine*, and Emunctories of the Skin. On the other Hand, in Wounds and sordid Ulcers, in the Scab and other cutaneous Diseases, long Birthwort is preferable, being used in Lotions; and in the same Form is good to deterge *Fistulas*. But the principal and most excellent Virtues of both consist in promoting the menstrual Purgations, and in cleansing the Womb after Delivery; and on this Account they are commended by *Hippocrates* in his Book on the Diseases of Women. Yet we must take Care not to give them to pregnant Women, for they provoke Abortion. *Simon Paulli* proposes a Decoction of the Root of round Birthwort to resolve the tartarous Mucilage in a scorbutick Asthma. Externally in Ulcers of the Legs, he wonderfully extols long Birthwort boiled in the distilled Water of *Speedwell*; and *Tragus* recommends a Decoction of it in Wine to cure Ulcers of the genital Parts.

These

These Roots being disagreeable to take, by Reason of their Bitterness, are seldom prescribed in Decoction or Infusion for internal Use; but are often given in Powder from ℥j. to ℥ij.

Take of round Birthwort ℥ij. Cinnamon ℥j. Saffron ℥j. Mix and make an Electuary with q. f. of the Syrup of Mugwort. The Dose is ℥j. every fourth Hour to promote the *Lochia*.

Take the Roots of Marsh-Mallows, Bryony, long and round Birthwort, ana ℥ij. the Leaves of Mercury, Mugwort and Savin, ana M. j. the Flowers of Camomile, Melilote and Tanfy, ana P. j. Let them be cut and bruised f. a. then boiled in q. f. of Fountain-Water, and apply them in Bags to the *Pudenda* and *Abdomen* in Suppression of the *Lochia*.

The *Clematitis*, or creeping Birthwort, may conveniently be substituted for long Birthwort. *Galen*, however, asserts, that it is something weaker than the *round* and *long* in its Virtues, though more fragrant; which is a little surprizing: for the Smell and Taste seem to indicate both the Quantity and the Energy of active Principles. He does not indeed say it is void of Virtue, but only the weakest of the three. Perhaps, the Mildness of its Qualities was the Reason, why both he and the older *Andromachus*, received it into the *Theriaca* preferably to the other *Species*.

ARTIC. IV. Of CASSAMUNAIR.

Cassumunair et Casmunar, Anglorum. Risagon, Musæi R. S. Lond. Bingalle Indorum, Philosophical Transact. n. 264. This is a tuberous Root, about

as thick as one's Thumb or thicker, cut transversly into short Pieces, and encompassed with geniculated Circles, as it were, like Galangal; of an ashy Colour on the outside, but within yellowish, and of a subacid, bitterish, aromatick Taste, and fragrant Smell.

The *English* bring it from the *East-Indies*, and highly extol its Virtues; but of what Plant it is the Root I know not, for *Cassumunair* is a fictitious Name, given it by some *English* Physician to conceal the Plant.

We may conjecture from its fragrant Scent, and pungent, acrid, aromatick Taste, that its Virtues are chiefly owing to a volatile, oily, aromatick Salt.

It strengthens the Nerves, raises and cheers the Spirits, fortifies the Stomach and expels Wind. It is esteemed, both by the *Indians* and the *English*, a most excellent Remedy in an Apoplexy, Epilepsy, *Vertigo* or Giddiness, Convulsions, Tremblings, hysterick Passion, hypochondriack Affections, and Gripings of the Bowels. It is given in Substance from ℥ss. to ʒss. A Tincture is made of it with Spirit of Wine, and likewise an Extract. The Tincture is taken in Tea or Wine to gut. xx. or xxx. and the Extract is ordered from gr. vj. to xv.

ARTIC. V. Of CONTRAYERVA.

Contrayerva et Drakena, Off. Contrayerva Hispanorum, sive Drakena Radix Clusii, Park. This Root is an Inch or two in Length and half an Inch thick, hard, dense, and bunching out into Knobs or unequal Heads, of a reddish Colour on the outside, or inclining to black, wrinkled, and covered on the Top of the Knobs, as it were, with Scales. It has a great Number of small Fibres shooting from

from it, whereof some are pretty thick and large, of an hard flexible Texture, and when the Plant is old, are extuberated like the main Root. Within it is of a pale Colour, of a somewhat astringent bitterish Taste, with a gentle sweetish Kind of Acrimony, which may be perceived by holding it some Time in the Mouth, and a very gentle aromattick Smell. The tuberous Part of the Root is preferred, and the Fibres, being almost void of Taste and Smell, are rejected. It is called *Contrayerva* by the *Spaniards*, on Account of its Quality of resisting Poisons, for the Word in *Spanish* signifies *Counter-Poison*. It is undoubtedly, in my Opinion, the *Drakena* of *Clusius*, as most Botanists allow, notwithstanding *Caspar Baubine's* Opinion to the contrary; since it agrees exactly with his Description. He gave it that Name in Memory of his receiving it from the famous *Drake*, who brought it with him when he returned from his Voyage round the World.

[The Writers on Botany for a long Time gave very uncertain Accounts of the Plant to which it belongs; some believing it to be a *Species* of the *Granadilla*, others of the *Commelina*, &c. But Mr. *William Houston* an *English* Surgeon, whilst he was in *America*, gathered the true *Contrayerva*-Root in the Mountains near *Vera-Cruz*, and discovered the Plant to be a *Species* of the *Dorstenia*, which he calls *Dorstenia*, *Dentariæ radice*, *Sphondylii folio*, *placentâ ovali*, *Philosoph. Transact. An. 1731. n. 421. Fig. 1. Dorstenia, Sphondylii folio, Dentariæ radice, Plum. Nov. gen. p. 29. Dorstenia, scapis radicatis, Linn. Hort. Cliff. p. 32. Tuzpatlis, Hernand. Hist. Plant. Mex. Lib. v. c. 18. p. 147. Drakena radix, Clusii Exot. p. 83. Father Plumier found it in the Island of Saint-Vincent in the Month of June. It grows also in Peru and Mexico, from whence it is brought by the Spaniards.*

Mr. *Houston*, in the Place above quoted of the *Philosophical Transactions*, Fig. 2. mentions also another Sort, under the Name of *Dorstenia*, *Dentariæ radice, folio minus laciniato, placentâ quadrangulari et undulatâ*. This at the first Sight appears to be quite a distinct *Species* from the former; but *Linnaeus* thinks the Variation in the Leaves and *Placenta*, considering the Resemblance in other Respects, not sufficient to determine it of another *Species*. And of the same Opinion is Monsieur *Bernard de Jussieu*, who ascribes the different Figure of the *Placenta* to the *Receptaculum commune* unfolding itself more or less in Proportion to its Maturity.]

Contrayerva is reckoned sudorifick and alexipharmack. *Clusius* says the Leaves of the Plant are an immediate Poison, for which the Root, he tells us, is an Antidote, as also for other Poisons: this, however, is not to be understood but of such Poisons as coagulate the Humours. It strengthens the Stomach, helps Concoction, discusses Wind, and increases the intestine or fermentative Motion of the Blood. Some assert that it cures malignant Fevers, or even the Plague, preferring it to the Bezoar-Stone, *Venice Treacle*, and all other Antidotes: but, perhaps, they extol its Virtues too much. By its Smell and Taste it seems to be composed of a moderate Portion of volatile aromattick oily Salt, somewhat intangled in earthy Parts. Wherefore, I think *Herman* commends it in malignant Fevers not without Reason, and more especially when they are attended with a Looseness. It is prescribed in Substance to ʒj. and in Decoction to ʒij.

Take of *Contrayerva* in Powder ʒss. Prepared Pearls and Hartshorn \bar{a} ʒj. Mix and give them

them in the distilled Water of *Carduus benedictus* or Baum, in Case of a Looseness in the Beginning of the Small-pox. Or

Take of Contrayerva-Root bruised ℥j. red Sanders ℥ij. Infuse in ℥vj. of white Wine, and give the strained Liquor.

Take Hartshorn Shavings ℥j. boil in q. f. of Spring-Water to ℔ifs. adding towards the End, of Contrayerva Root bruised ℥fs. Cochineal ℥fs. to the strained Liquor add Cinnamon-Water ℥ifs. Syrup of Clove July-Flowers ℥ij. Let the Patient take a Draught of this now and then in the Small-Pox, or Measles.

ARTIC. VI. Of COSTUS.

Costus or *Costum*, Latin, κοστός, Græcor. *Kost* or *Chast*, Arab. These Names are given to several Roots which it is very difficult to distinguish. *Dioscorides* reckons three Species of *Costus* (viz.) the Arabian, Indian and the Syrian. The Arabian *Costus*, he says, is of a white Colour and light, with a very sweet Smell, and biting hot Taste; the Indian is light, full, and black; and the Syrian heavy, of a Colour something like Box, and of a strong Scent affecting the Head.

Galen, on *Antidotes*, commends the white Arabian *Costus*, and in his Book, concerning the Virtues of Simple Medicines, speaks of a certain Bitterness in *Costus*, though very gentle; but its Acrimony he says is so great as to produce Ulceration.

Pliny tells us, that *Costus* is the Root of a certain Shrub, and that it has a burning hot Taste and excellent Smell. He makes two Kinds; the black and the white: of which he says the latter is preferable.

The ancient *Arabians*, as *Serapio* and *Avicenna*, in regard of the Distinction of this Drug into the *sweet* and *bitter Costus*, which at this Time prevails, are entirely silent; having taken whatever they have delivered concerning it from *Dioscorides*, as if the *Costus* then made use of were the same with that of the ancient *Greeks*. *Serapio*, in particular, has nothing relating to it, but what he transcribed from that Author; though *Avicenna* indeed adds something of his own. He says, for Instance, that the *Arabian Costus* is white, but withal has a Tendency to a red or Citron-Colour; that the *Indian* is lighter than the *Arabian*, of a bitter Taste, with a strong clove-like Smell, and a Colour inclining to black. The *Syrian Costus* of *Dioscorides* he calls *Roman Costus*, and says it has a Colour like Box, and a strong Smell.

The *Greek* and *Latin* Authors, who have wrote any Thing on the *Materia Medica* for five hundred Years past and upwards, mention two Kinds (viz.) *Costus dulcis* and *Costus amarus*, the sweet and the bitter *Costus**. Thus *Aëtuarus* and the modern *Grecians* distinguish the *κοστός γλυκὺς* and the *κοστός πικρὸς*; and *Macer* the Poet, *de Speciebus exoticis*, has the following Lines.

*Costi sunt geminae Species; gravis una rubensque,
Est et amara nimis: hæc Indica dicitur esse.
Altera vero levis, nec amara, colore sed albo.*

Whence it appears, that the Root which at present in the Shops is called *Costus*, and which alone has

* These are now generally believed to be the same Root, only growing bitter with Age, and acquiring a blackish Colour; and even *Garcias ab Horto*, *Bontius*, *Acosta*, and *Clusius*, were of this Opinion. See *Chomel, Abregè de l'Histoire des Plantes. Tome ii. p. 550.*

been used for some Ages as the true Sort, is not the same with the *Costus* of the Ancients.

But to make this more evident, we must take Notice that *Dioscorides* speaks of no Bitterness belonging to *Costus*; and though *Galen* does, yet he tells us it is very gentle; and they both observe that it has an acrid, biting, hot or burning Taste. It is true *Avicenna* says, from *Dioscorides*, the *Arabian Costus* is white; but adds of himself, that it has a Tendency to redness, which was the Colour of what was then made use of. He likewise says from *Dioscorides*, that the *Indian Costus* is black; but afterwards adds that it is bitter. *Macer*, on the contrary, describes the *Indian Costus* as having a reddish Colour, and an extremely bitter Taste. Further, the *Costus* of the Ancients had a very strong fragrant Smell, even so as to prove offensive to the Head. They used it in aromack Compounds and Perfumes; and they burnt it also upon their Altars as Incense. Whence this Line of *Propertius*:

Costum molle date, et blandi mibi Thuris Honores.

And *Pliny* likewise expresses himself thus: “ These
“ Roots are purchased on Account of their Smell,
“ to mix with Unguents and Dainties, or, If I may
“ be allowed to say so, for the Sake of Supersti-
“ tion; because, says he, we use *Frankincense* and
“ *Costus* in religious Worship.” Now as this exquisite Fragrancy and strong Smell, taken Notice of by *Dioscorides*, *Galen* and *Pliny*, is not observable in the *Costus* of our Shops, I think we may reasonably conclude that it is entirely different from that of the Ancients.

Moreover, the Druggists are not agreed upon the true *Costus*; since in their Shops we some-
times

times meet with three Sorts, under the Names of the *Arabian*, bitter and sweet *Costus*; which *Pomet*, in his History of Drugs, describes thus: “ The
 “ *Arabian Costus*, says he, is an oblong, heavy
 “ Root, of a gray or whitish Colour on the out-
 “ side, and reddish within, hard to be broken, of
 “ a fragrant Smell, and aromatick bitterish Taste.
 “ The bitter *Costus* is thick, dense, hard, woody,
 “ light, and shining, and in Appearance rather
 “ like a Piece of Wood than the Fragment of a
 “ Root. And the sweet *Costus* is a small yellow
 “ Root, resembling pretty much, in its Colour,
 “ Form and Thickness, the Root of *Turmerick*.”

But these Descriptions are imperfect, or at least they agree not with the *Costus* which we now find in the Shops of Apothecaries: For this, which is almost universally received or substituted for the *Arabian* or true *Costus*, is a Root cut into oblong Pieces, an Inch thick, light, porous, and hard, but of a friable Texture, a little resinous, of a whitish, or sometimes yellowish gray Colour, an acrid, aromatick, bitterish Taste, and fragrant Smell; something like the Smell of *Florentine Orris* or *Violets*.

According to *Commelinus*, and after him *Dale* in his *Pharmacologia*, it is the Root of a Plant called *Tsiana Kua*, *Hort. Malab.* and *Ponvo Bramanum*. which is the *Costus Iridem redolens seu Indicus*, *C. B. Costus*, *Linn. Hort. Cliff. Pag. 2. Paco Caatinga Brasiliensibus*, *Marcgr. Bras. p. 48. Pison. Bras. p. 98. Anonyma, Mer. Surin. 36. T. 36.* It grows in the Forests of *Malabar*, *Brasile*, and *Surinam*.

This Root has a Place amongst *Cephalicks*, *Expectorants*, and *Uterines*. It attenuates and divides the Humours, and provokes Urine and Perspiration. The Dose in Substance is ζ ss. and from ζ ij. to ζ ss. in Infusion.

ARTIC. VII. Of TURMERICK.

Of this there are two *Species*; the *long* and the *round*.

1. *Curcuma longa, seu Terra Merita, Off. Cyperus Indicus, Zingiberis facie, Diosc. Cypira, Plin. Crocus Indicus, Arabibus Curcum, Officinis nostris Radix Curcumæ dictus, Bont.* Long Turmerick is an oblong, small, tuberous, knotty Root, of a yellow or saffron Colour, turning Liquors in which it is infused yellow; of a subacid bitterish Taste, and a Smell not unpleasant, being something like that of Ginger, but not so strong.

The Plant to which it belongs is the *Curcuma radice longa, Hort. Ludg. Bat. Curcuma foliis longioribus et acutioribus, Breyn. 2. P. Manjella Kua, Hort. Malab.* The Root of this plant ripens and is dug up after the Flowers are withered. It is so common in the *East-Indies*, that there is scarce a Garden in which it is not cultivated for its Usefulness, being esteemed a very agreeable Seasoning for Food; and it is also used there, as it is in *Europe*, in Dyeing. The Flowers, which have a sweet Smell, they put into Ointments to rub over their Bodies.

It seems to consist of a volatile oily Salt, mixed with a bitter neutral Salt; which are both enveloped in viscid and terrestrial Parts. It is reckoned an excellent Medicine for resolving Obstructions of the Lungs, Liver, Spleen, Mesentery and Womb; for provoking the *Menses*, and assisting Delivery: but particularly, it is a singular and specifick Remedy in the Jaundice. It is given in Substance from ℞j. to ʒj. and in Decoction or Infusion to ʒij.

Take of Turmerick powdered ʒfs. Saffron gr. v. volatile Salt of Hartshorn gr. x. Syrup of the

C

five.

five opening Roots or Mugwort q. s. Make a Bolus for the Jaundice and uterine Obstructions. Take of Turmerick ʒss. Troches of Vipers ʒiij. Powder of Rhubarb and Saffron ā ʒss. Conserve of the greater Celadine ʒj. Syrup of Fumitory q. s. to make an Electuary; of which ʒij. may be taken twice a Day in the Jaundice. Or,

Take of Turmerick-Root ʒss. Saffron gr. xv. Rhubarb ʒij. Infuse them cold for twelve Hours in ʒxij. of strong white Wine, and divide the strained Liquor into two Doses.

2. The other *Species*, which is called round Turmerick, and by the *Portugueze Ratz de Safrão*, is the Root of the *Curcuma radice rotundâ*, *Parad. Batav. Prodrom. Manja-Kua, Hort. Malab.* This is something weaker in its Virtues than the former, and is seldom used.

ARTIC. VIII. Of GENTIAN.

Gentiana, *Off. Γεντιανή, Diosc. et Græcor.* The Root of Gentian is about a Foot long, and as thick or sometimes twice as thick as one's Thumb, pretty much divided, fungous, brown on the outside, of a yellow Colour within tending to Red *, and an extremely bitter Taste. It is brought from the *Alps*,

* According to *Mr. Miller's* Description, it is of a yellow brown Colour. It ought to be chosen with great Care; because a poisonous Root has been lately brought over with it, which having been put into Medicines unknowingly in its stead has produced very bad Effects. It is said to have a stronger Smell than Gentian. I have endeavoured to gain a more perfect Knowledge of this Root; but am informed by *Mr. Blackstone*, Apothecary (a Gentleman very curious and well versed in botanical Inquiries) that the Plant to which it belongs is not yet ascertained; some affirming that it is the *Thora Valdensium*, *Lol.* others the *Solanum lethale*.

Pyreneans, and the Mountains of *Auvergne*, where it grows in great Plenty. When it is much wrinkled, mouldy and blackish within, it is rejected.

The Plant is the *Gentiana major, lutea*, C. B. P. *Gentiana vulgaris major Hellebori albi folio*. J. B. *Gentiana, Dodon.* This Plant, according to *Dioscorides*, took its Name from *Gentis* who was King of *Illyris*.

The Root, which is the only Part used in Medicines, yields a large Quantity of Oil, Earth, and acid Phlegm, and very little urinous Spirit. Its Virtues are therefore to be ascribed to an acid Salt, partly saturated with an astringent Earth, and partly involved in a large Proportion of Sulphur.

It is said by Physicians to be heating, drying, and deterfive; and also alexipharmack, antifebrile and vulnerary. It is esteemed an excellent Remedy against the Bite of a mad Dog, and for this Intention *Dioscorides* orders it to be mixed with the Ashes of Craw-fish and taken in Wine; and some apply it in Powder with *Venice-Treacle* to the Wound: But it is much safer, provided the Wound be fresh, to open it with a Knife, and then to burn it.

Moreover, *Gentian* opens Obstructions of the Liver, Spleen, and Womb; cures certain Fevers, and sometimes even quartans, a Drachm of it being given in the Beginning of the Paroxysm in Wine, or in the distilled Water of *Carduus benedictus*, the lesser Centory, or Fumitory. Some likewise direct it to be infused, and given every fourth Hour, as we give a Decoction of the Bark; however, I shall venture to pronounce it very much inferior to that for curing Fevers. In common with other Bitters it strengthens the Stomach, cures Loss of Appetite, and helps Digestion; but the Cautions above laid down, concerning the Use of Stomachicks, are to

be observed in giving it*. It likewise resists Putrefaction and Poisons, is good in the Plague, and kills Worms. The Dose is from $\mathfrak{z}\text{ss}$. to $\mathfrak{z}\text{ij}$.

Externally it is used to deterge Wounds and Issues, and the Surgeons make Tents of it for dilating Ulcers.

An Extract is prepared from it, which has been in use ever since the Time of *Dioscorides*, having the same Virtues with the Root. It is prescribed from $\mathfrak{z}\text{ss}$. to $\mathfrak{z}\text{iv}$.

Take of Gentian cut small $\mathfrak{z}\text{ss}$. the Tops of lesser Centory and Camomile-Flowers $\bar{\text{a}}\text{P. j}$. the Seeds of *Carduus benedictus* $\mathfrak{z}\text{j}$. Boil them in q. s. of Spring-Water to $\mathfrak{z}\text{iv}$. Strain and make an alterative Decoction, to be taken fasting for eight Mornings in Obstructions of the Bowels to strengthen the Stomach, and kill Worms. This Decoction may be rendered solutive by adding $\mathfrak{z}\text{j}$. of Senna.

A R T.

* We are here referred to our Author's Account of the greater and the lesser Galangal, which I have not inserted in this Treatise, as those Roots are no longer retained in the Dispensatory; but the Cautions delivered concerning their Use being applicable to many other Drugs, it may be necessary, for the Information of the Reader, to transcribe them. In regard of these aromattick Medicines (says he) which are so highly cried up for their stomachick Virtues, and for assisting Digestion, we must observe, that they ought not to be used indiscriminately in all Cases of Weakness or Crudity of the Stomach; since a depraved Concoction may be owing to Causes entirely different, or (as they say) to different Distemperatures of the Part. Sometimes, for Instance, the Tone of the Fibres is too lax; so that the Stomach discharges its Contents very slowly into the Intestines; whence by too long a Continuance, they either grow sour, or are converted into a putrid Mucilage. Sometimes the Membranes of the Stomach are disposed to Inflammation, and the nervous Fibres are so shrivelled up and convulsed, that they are scarce able to protrude the Chyle through the *Pylorus*. Sometimes, again,
the

ARTIC. IX. Of LIQUORICE.

The Liquorice of the Ancients and the Moderns are not the same Plant, but two distinct *Species*; though both are included under the same *Genus*.

The Liquorice of the Ancients (Γλυκυρρίζα, *Diosc. Ξυθικη ρίζα Theophras*) differs from our in having a prickly Fruit and many Pods growing together in Clusters, with a Root, not small and creeping like common Liquorice, but as thick and long as the Arm, shooting perpendicularly into the Earth,

the gastrick Juice being too much diluted with Serum, and destitute of a sufficient Stock of Spirits, becomes as it were vapid and unfit for the Office of Digestion: or, at other Times, it occasions a bad Digestion, by being over-loaded with sulphureous, saline, acrid, or acid Particles. Now these Causes, so different from each other, though they may produce the same Effect, require notwithstanding a different Method of Cure. Therefore, before we venture to give these Remedies, we ought to consider what is the Cause why Concoction is not duly performed. For if the Fault be owing to an hot Distemperature, an inflammatory Disposition of the Membrances, or a convulsive Tension or Spasms of the nervous Fibres, then Aromaticks are not only useless, but even prejudicial in the highest Degree: and hence it is, that in melancholick and hypochondriack Affections they do Mischiefe, and oftentimes bring on a Dropsy. Wherefore, as *Wallæus* very justly cautions, when we give aromattick Stomachicks, we ought to be exceeding careful in observing the Urine; for if this be diminished in Quantity, or changed in Colour, so as to become foul or red, these Medicines must immediately be laid aside; because an *Ascites* is then approaching. But in a cold Distemperature of the Stomach, or a vapid State of its Juices, these Things are given to great Advantage, especially with the inflammable Spirits of Wine, Juniper, &c. They are equally proper also when the Tone of the Stomach is relaxed, but chiefly such as are bitter or in some Degree astringent. Moreover, when the gastrick Juice is too thick, aromattick Substances, by inciding the viscid Lymph and stimulating the Fibres, may be of Service; yet in this Case Diluters are preferable. These Particulars ought to be duly attended to in giving Stomachicks.

and of a much less agreeable Sweetness. It is called *Glycyrrhiza capite echinato*, C. B. P. *Glycyrrhiza Dioscoridis echinata, non repens*, J. B. *Glycyrrhiza vera Dioscoridis, Dodon.* It grows, according to *Dioscorides*, in *Cappadocia* and *Pontus*; and it was the same, or a *Species* very like it, which *M. Tournefort* found in the eastern Countries, and calls *Glycyrrhiza orientalis, Siliquis hirsutissimis, Corol. Inst.*

The Liquorice of the Moderns is distinguished *Glycyrrhiza Siliquosa, vel Germanica*, C. B. P. *Glycyrrhiza radice repente vulgaris, Germanica.* J. B. It grows wild in *Spain, Italy, Languedoc, and Germany*, and is much cultivated in *England*.

The Root, which in the Shops is called *Glycyrrhiza, Liquiritia, or dulcis Radix*, is long and divided into Branches, sometimes as thick as one's Finger, being of a brown or ashy Colour on the outside, but within yellow, and full of a sweet Juice.

It tempers Salt and sharp Humours, incrassates the Blood, and cures Coughs and other Distempers of the Breast. It is also serviceable in the Stone of the Bladder or Kidneys, asswaging the Violence of the Pain. Wherefore *Simon Paulli* extols it greatly in these Affections, being given in Powder with the Pulp of *Cassia* or boiled Turpentine. It is so much in Esteem with Physicians, that there is scarce a Ptisan prescribed without it; whether it be designed to calm the inordinate Heat of the Humours, or to soften and obtund their Acrimony. It is likewise joined with other Medicines, as well to moderate their Force, as to render them more agreeable.

Take of whole Barley well cleansed M. j. Boil in ℥iv. of Water to a Consumption of the fourth Part. Then add of Liquorice scraped, bruised, and divided into Shreads ʒj. afterwards

wards boil them till the Liquor is depurated ed; and let the strained Ptisan be used for common Drink.

Note, that a Ptisan made of dried Liquorice, and boiled to Despumption, is much more agreeable, than when prepared from the fresh Root.

Take the Roots of Dog-Grass and Strawberry \bar{a} \mathfrak{z} j. Liquorice scraped and bruised \mathfrak{z} ij. Boil them in \mathfrak{li} v. of Water to \mathfrak{li} ij. for an opening Apozem.

The Juice of Liquorice is prepared several Ways; whence we have many different Sorts of it. One Sort is brought from *Spain* in black hard Cakes or Rolls, and covered with Bay Leaves. It is extracted from the Root by boiling it in Water, and evaporating the Decoction to a due Consistence. The other Sorts are prepared in the Shops. These are the *white* and *black* Juices, and that of *Blois*.

The white Liquorice-Juice, termed by some *Confectio Rabecha*, is made thus.

Take the Roots of Liquorice and Florentine Orris in Powder \bar{a} \mathfrak{z} vj. Starch \mathfrak{z} ij. white powdered Sugar \mathfrak{z} j. Make these into a stiff Paste with q. s. of the Mucilage of Gum Tragacanth in Orange-Flower Water, and then forming the Paste into slender Rolls or Tablets lay them in the Shade to dry.

The black Juice thus.

Take the Extract of Liquorice-Root and powdered Sugar \bar{a} \mathfrak{li} ij. Gum Arabick dissolved \mathfrak{z} j. Mucilage of Gum Tragacanth made in Orange-

Flower Water \mathfrak{z} iss. Mix them together, and form Tablets or Rolls to be dried as the former.

The Liquorice Juice of *Blois* is prepared thus.

Take of Gum Arabick grossly prounded \mathfrak{lb} iv. Sugar \mathfrak{lb} ij. Liquorice dried, scraped and bruised \mathfrak{lb} ij. Infuse the Liquorice for twenty-four Hours in \mathfrak{lb} xxx. of Water. Divide the strained Liqour into three Parts, in two of which dissolve the Gum Arabick over a slow Fire, and pass it through an Hair-Sieve; then boil it with the remaining Part of the Liquor to the Consistence of a Plaister, adding the Sugar towards the End, and stirring it continually to make it white.

ARTIC. X. Of HELLEBORE.

Ἑλλέβορος, *vel* Ἐλλέβορον, *vel* Ἐλλέβορας, *Græcor.*
Helleborus, aut Elleborus, aut Veratrum, Latinor.
 Hellebore was a famous Drug among the Greek and Latin Physicians. They distinguished two Sorts (*viz.*) the *white* and the *black*; but what they have left us concerning them is so full of Obscurity, that it is hard to determine the Plants from which they were taken. The History of Hellebore in *Theophrastus* is extremely defective, so that we can expect but little Light in this Matter from him. The Description which *Dioscorides* gives of white Hellebore is applicable enough to ours; but what he says of black Hellebore is far from agreeing with that of the Moderns. Whence we may conclude, that the black Hellebore of *Dioscorides* is a Stranger to us, or that, perhaps, his genuine Text has been corrupted.

At this Time, however, we meet with two Kinds
 of

of Hellebore in the Shops, which are distinguished, as formerly, by their Colour, into *white* and *black*.

1. *Helleborus albus, seu Veratrum album, Off.* White Hellebore of the Shops is an oblong tuberous Root, sometimes as thick as the Thumb and thicker, of a brown Colour on the outside and white within, and full of white Fibres, having an acrid, somewhat bitter, subastringent, disagreeable and nauseous Taste.

The Plant is called *Veratrum flore subviridi, Inst. R. H. Helleborus albus flore subviridi, C. B. P. Helleborus albus flore ex viridi albescente, J. B. Helleborum album, sive Veratrum, Lobel. Icon.*

Another Species of this Plant is distinguished *Veratrum flore atrorubente, Inst. R. H. Helleborus albus flore atrorubente, C. B. P. Helleborum album, flore atrorubente, præcox, Lobel. Icon.* It grows common in all the mountainous Parts of *France*, and very plentifully upon the *Alps* and *Pyrenean Mountains*.

2. *Helleborus niger, et Veratrum nigrum, Off.* Black Hellebore is a tuberous knotty Root, with a great Number of dense Fibres springing from it, of a black Colour without and whitish within, having an acrid and bitter Taste, producing a Kind of *Nausea*, and a very strong Smell when it is fresh. It is called by the *Greeks Melampodion*, from one *Melampus* a Physician, or according to others a Shepherd, who first instituted Purgings, and thence took the Name of *καθάρτης* or the *Purger*. It is reported, that when the Daughters of *Prætus* were seized with Madness, he cured them with this Root.

The Plant from which it is taken is the *Helleborus niger, angustioribus foliis, Inst. R. H. Helleborus niger flore roseo, C. B. P. Elleborus niger legitimus, Clus. Hist.* It grows upon the *Alps* and *Pyrenean Mountains*, and is cultivated in Gardens, as well for Ornament as Use.

There

There is also another *Species*, which M. *Tournefort* supposes to be the true black Hellebore of *Hippocrates* and the Ancients; because he met with it common, not only in the Islands of *Anticyræ* which lie opposite to Mount *Oeta*, and several other Places thereabouts, but likewise in *Asia* on the Coast of the *Euxine* Sea, and at the Foot of the Mountain *Olympus*, &c. This *Species* he calls *Helleborus niger orientalis*, *amplissimo folio caule præalto, flore purpurascente*, Cor. *Inst. R. H. Helleborus niger orientalis*, *Bellon.* The Root is like that of the former, but thicker, longer, and void of Smell, though extremely bitter.

Some through Mistake, for the Roots of the true black Hellebore, substitute those of the *Helleborus niger, tenui folio, Bupthalmi flore*, C. B. P. which *Tournefort* ranks under the Genus of *Racunculus* or *Crow-foot*, by the Name of *Ranunculus fœniculaciis foliis, Hellebori nigri radice*, H. R. *Monspel. Inst. R. H.* and both he and *Dodonæus* have observed, that the Roots of this are not purgative. Wherefore, instead of the true black Hellebore, we ought rather to substitute the *Helleborus niger hortensis, flore viridi*, C. B. P. or the *Helleborus niger fœtidus*, C. B. P. which are the Sorts that are usually brought to *Paris* from the Mountains of *Auvergne*.

But in order to discover whether the Roots, which are sold for black Hellebore, have their proper medicinal Virtues, M. *Tournefort* proposes to infuse them in a sufficient Quantity of Spring Water, and afterwards to distil them in an Alembick; for if the Water coming over be insipid, those Roots are to be rejected, as void of Efficacy; but if the Water have a considerable Acrimony, they are fit for Use.

From the Roots of white Hellebore, in a chymical Treatment, is obtained, first a Spirit of a very acrid

acid Taste, which coagulates a Solution of Sublimate; afterwards an acid corrosive Liquor, and then a volatile concremented Salt and Oil. But the Quantity of Earth remaining is equal in Weight to a third Part of the Roots. Moreover, by the Juice of white Hellebore the Colour of blue Paper is rendered more lively, in the same Manner as when the Paper is dipped in Lime-Water.

Five Pounds of the Fibres of black Hellebore-Root yielded eight Ounces of greenish Liquor of a very acid Taste; but it produced no Change in the Tincture of Turnsole, or the Solution of Sublimate. After this came over into the Receiver two Pounds, twelve Ounces, and six Drachms of Liquor, which by Degrees lost its green Colour and became more limpid; and was likewise deprived of its acid Taste, acquiring one that was acid and styptick. This Liquor turned the Tincture of Turnsole not only purple, but even to the Colour of Fire. The last four Ounces which came over, raised an Effervescence with Spirit of Salt, and precipitated the Solution of Sublimate. The foetid Oil weighed an Ounce and half, and the *Caput mortuum* ten Ounces; in which were six Drachms of fixt Salt, and two Ounces, one Drachm, of *terra damnata*. Further, blue Paper, by being dipped in an Infusion of this Root, is not rendered more lively in its Colour, but on the contrary more obscure, inclining to the Colour of a Violet.

Hence it appears, that an alkaline Salt prevails in the Root of white Hellebore; which, on the other Hand, in the Root of black Hellebore, is subdued by an Acid. Moreover it appears, that the Root of black Hellebore contains a Kind of salino-sulphureous Spirit, such as is produced by mixing rectified Spirit of Wine with volatile Spirit of *Sal Ammoniac*. This Spirit arises the first in Distillation;

tillation; and though it be volatile, and alkaline, yet it is so involved in Sulphur, that it produces no Change, either in the Tincture of Turnsole, or the Solution of Sublimate. Lastly, if the Distillation be urged at the Beginning by a stronge Fire, there arises, instead of the acrid Spirit, a coagulated Compound consisting of the same Principles.

But the purgative Quality of Hellebore is not to be attributed either to the acid or alkaline Salt alone, or to the Sulphur, but to all these together as they naturally exist in the mixt Body: For as much as an Extract from the Roots with Spirit of Wine is not in the least Degree cathartick: neither is a second Extract made with Rain-Water from the *Residuum* of the former. Whereas an Extract, which is drawn out first with Water, possesses all the Virtues of the Root; for the Water dissolves both the alkaline and tartarous Salts, and afterwards, by the Assistance of those Salt, divides and takes up the sulphureous Parts.

White Hellebore is cathartick and emetick, but extremely violent in its Operation, producing great Uneasiness and Anxiety; and is therefore never given inwardly in the present Practice. Even the Powder being only put into Issues purges the Belly with great Vehemence. The Ancients sometimes ventured to give it, though never but in desperate Cases, when they found all other Medicines ineffectual. Externally it is accounted good in the Itch and other cutaneous Foulnesses, and is a powerful Sternutatory in sleepy Affections.

Black Hellebore was very commonly used as a Cathartick among the Ancients. They reckoned it an efficacious Medicine in Madness and Melancholy, as also in Epilepsies, Apoplexies, Palsies, the Gout, *Elephantiasis*, quartan Fevers, and in all Diseases

Diseases arising from black Cholera. However, its Roughness obliged them to be very cautious how they used it; the Patient being always prepared for seven Days, before they ventured to give it, by gentle Physick and a proper *Regimen*. They likewise tried several Ways to correct it. *Hippocrates*, on the Diet in a cute Diseases, orders it to be mixed with Cummin, Anise, and other warm and fragrant Substances; and *Pliny* mentions a Method of boiling it in Radishes, and giving either the Liquor, the Radishes, or the Root itself. But after all, being unreasonably given, or in too large a Dose, it often brought on a Train of direful Symptoms, which sometimes terminated in the Death of the Patient. The Hellebore growing in the Islands of *Anticyræ* was accounted the best; insomuch that it was customary for People to go thither, that they might be sure of having the right Sort. Hence *naviga Anticyras* became a Proverb, being as much as to say, *Go purge off your Madness*. But *M. Tournefort*, who several Times gave an Extract of this Hellebore, found the Danger attending its Operation so great, that he was obliged to forbear the Use of it. On Account of this dangerous Quality Hellebore is seldom given at present, especially since the emetick and cathartick Preparations of Antimony have been in Use; which, in my Opinion, are much safer, and no less efficacious. However, as the Hellebore which we have in *France*, is not near so rough as that employed by the Ancients, it may be given in Substance from gr. xv. to ℥ij. in Decoction from ℥j. to ℥ij. and in Extract, prepared with Rain-Water, from gr. xij. to ℥j. and we must observe, that Cream of Tartar, Sal Prunel, Tamarinds, Oxy-mel, and the Juice of Quinces, are better Correctors of it than Aromatics.

Take

Take of the Fibres of black Hellebore cut small zfs. Pour upon them ℥vj. of boiling Milk. Boil them gently, and then leaving them all Night in Infusion, give the strained Liquor in the Morning.

Take of the Fibres of black Hellebore ℥j. boil in ℥iv. of Rain-Water to a third Part. To the strained Decoction add ℥ij. of Honey well clarified. The Dose is a Spoonful every other Day, for Madness.

Take of the Extract of black Hellebore gr. xv. dulcified Mercury Sublimate and prepared Amber ā gr. xij. Cream of Tartar ℥j. mix and make a Bolus with q. s. of the Pulp of Cassia fresh drawn.

Take of the Extract of black Hellebore ℥j. Cream of Tartar zfs. Quince-Marmalade q. s. Make a Bolus.

Some Physicians commend this Root as an excellent Alterative, and suppose that it conduces more towards the Cure of Melancholy, by dissolving the Viscidity of the Humours, than by purging. It is reckoned externally a good Detergent in the Shingles, Scab, and leprous Sores; and *Galen* extols it for removing the Callosity of Fistulas*.

* By the Account above given it is evident, that not only the black Hellebore of the Ancients, but also what the *French* make use of, is vastly different from ours. For the black Hellebore of the *English* Shops purges very little, but powerfully divides and attenuates the Humours; and in plethorick Constitutions, seldom fails to promote the *Menses*. Moreover, according to *Dr. Freind* in his History of Physick, vol. 2. p. 105. it sometimes proves a most efficacious Diuretick in the Dropsy.

ARTIC. XI. Of JALAP.

Jalapa, Jalapium, et Mechoacanna nigra Off. Jalap is an oblong Root, in Figure something resembling a Top or Turnip, thick, dense, heavy, and cut transversly into Pieces, of a dark Colour without, and brown or ash-coloured within, resinous, hard to be broken, and in Taste somewhat acrid and nauseous. The best is dense, of a brown Colour, hard to be broken, resinous, and inflammable.

It was a Stranger to the *Greeks* and *Arabians*, being brought into *Europe* with the other Riches of *America*. It took its Name from *Xalapa*, a Town of *New-Spain*, from whence it was first imported to us.

Authors have hitherto been undetermined concerning the Plant to which it belongs; some supposing it to be the *Bryonia*, *Mechoacanna nigricans*, C. B. P. Some the *Solanum Mexicanum magno flore*, C. B. P. and others the *Convolvulus Americanus Jalapium dictus*, *Raii Hist.* The celebrated *Tournefort*, after *Father Plumier* and *Ligonius*, asserts that the Plant, whose Root is the officinal Jalap, is like the *Jalapa officinarum fructu rugoso*, *Inst. R. H.* which is a *Species* of the *Mirabilis Peruviana* or *Marvel of Peru*. [But this is a Mistake; for *Mr. Houston*, who brought the Jalap-Plant over with him from *America*, shewed it to *M. Bernard de Jussieu*, residing at that Time in *London*, who discovered it to be a true *Species* of the *Convolvulus*.]

The Root of Jalap contains a large Quantity of alkaline Salt, with a small Proportion of acid, joined with some Sulphur and Earth. These Principles being mixed together constitute a Gum and a Resin; which are both obtainable in great Plenty from the dry Root. For twelves Ounces of Jalap
in

in Powder yielded three Ounces of Resin, with four Ounces of a gummous Extract: and two Pounds of the Root in Distillation gave up nine Ounces of Oil, a very large Quantity of alkaline Phlegm, and a less Portion of acid Phlegm, wherein the Acidity discover'd itself only in an obscure Manner: Furthermore, an Infusion of Jalap in clear Water renders the Colour of blue Paper more lively.

This is an excellent cathartick Medicine and of very familiar use with the common People; who prefer it to other Medicine, because it has no Smell, is agreeable enough to take, and answers their Expectations in a small Dose. It is said to purge off all noxious Humours, but more especially a redundant *Serum*, without Pain or Uneasiness. But *Simon Pauli* denies that it is so gentle as some would persuade us, asserting it to be much of the same Nature with Scammony. *Wepfer* likewise assures us that it occasions Inflammation in the Stomach and Intestines; which he endeavours to prove by the following Experiment. He gave to a Whelp a Month old half a Scruple of the Resin of Jalap; and to another six Months old he gave a Scruple. This last was seized with a violent Hickup; and the other with Pains in the Belly, and a Staggering in his Gait as if he were drunk. Some Hours after, when neither of them had voided any Thing by Stool, he opened them alive, and found manifest Signs of Inflammation both in their Stomacks and Intestines: However, we must ingenuously confess that the Dose of the Resin was too strong, it being a much more churlish Medicine than the Root in Substance.

Hence, therefore, it does not follow that there is any Thing to be suspected in Jalap, but what it has in common with other acrimonious and strong Cathar-

Catharticks : for the Operation of all these depends, both upon the Action and Vellication of their sulphureous and acrid saline Parts upon the Membranes of the Intestines, whereby they strongly irritate the Glands to squeeze out their Contents; and also upon the Mixture of their Particles with the Mass of Blood, where they dissolve and melt down the Humours. Whence it appears, that a Medicine in order to purge must necessarily produce an Irritation of the Intestines, which will be greater or less in Proportion to the Strength or Dose of it.

This Drug then, among the stronger Hydragogues, may be considered as mild and gentle: Nor can it be otherwise hurtful than by Accident. *Caspar Baubine* extends the Dose to ʒj. but *Simon Paulli*, *Caspar Hoffman*, and the best Physicians, confine it to gr. xxiv. And accordingly it is found, in Substance, to purge very well and without Uneasiness from gr. xij. to xxiv.

But in Relation to Jalap we must observe, that in acute Fevers it is very improper; as also in hot and dry Constitutions. For in these, like all other acrimonious and irritating Purgatives, it raises an intense, and oftentimes inflammatory Heat in the Bowels, and promotes a very sparing Evacuation; nay, frequently none. It is of Service chiefly to Persons of cold Temperaments; who abound with ferous Humours and are of a moist Habit of Body; and is particularly efficacious in a Dropsy, *Anasarca*, and Cachexy. However, we must be very careful in distinguishing what is properly meant by a moist Habit; since Bodies which in Reality are dry, have oftentimes a Redundancy of *Serum*. Thus, in Persons subject to melancholick, scorbutick and atrabilious Affections, whose Bowels are over heated by the immoderate Incalescence of the Bile; or whose Blood, being rendered acrimonious by excessive

cessive Heat, has the fibrous Part closely compacted, whilst the other is dissolved into *Serum*: in these, I say, and in Persons under the like Indispositions, the Body seems to be overstocked with ferous Humours; insomuch that they spit often, and discover other Signs of a Superfluity of such Humours. Yet these Temperaments are not to be accounted moist; but, on the contrary, the Fibres within are hot, dry, and rigid. For being vellecated and shrivelled up by the Acrimony of the Humours, they exert not their Oscillations with sufficient Force to carry on the due Circulation of the Fluids. Hence they stagnate in all Parts of the Body, and transfusing through the Vessels, produce Cachexies, œdematous Tumours, Leucophlegmacies, Dropsies, and other Affections, which never yield to Hydragogue Medicines of this Sort. By a moist Habit of Body we are then to understand, an Habit replete with soft, mucilaginous, chylous, or recrementitious Juices; in which the Moisture is not owing to a dissolving Salt, or a Stagnation of the Fluids, but to a Redundancy of nutritious Juices, to Crudity, or over Feeding. Infants may serve as Instances of this Temperament, who living upon Milk and Pap, with the like humecting Aliment, easily bear purging. Again, Gluttons, who having their Blood overcharged with Fat, Chyle, or Serum, support the Operation of a Cathartick without Injury. For this Reason Jalap is very useful in the Diseases of Infants; because all its Acrimony is blunted by the soft, milky or chylous Quality of their Fluids: but, on the other Hand, the Blood of Adults, being bilious or too elastick, by a cathartick Medicine like this, is immediately thrown into Fermentation. Upon the same Account also Purges are more successful in the acute Fevers

Fevers of Infants, and may likewise be ventured upon sooner to them than to grown up People.

Many pretend to correct some noxious Quality which they imagine to be in Jalap, by mixing it sometimes with alkaline Salts, as with Salt of Tartar, of Wormwood, or the like: Sometimes with Acids, as with Cream of Tartar, Juice of Lemons, and Spirit of Sulphur or Vitriol; by which its Parts are concentrated, and in a Manner fixed: and sometimes with Oils, or Aromatics, such as Cinnamon, Cloves, Ginger, or Mace; whereby they propose to restore the nervous Fibres of the Stomach and Intestines, when they are weakened by the Action of the Purgative. But to me it seems altogether useless to give a Purge, and to invalidate at the same Time its Force; it appearing more reasonable not to give it at all. Acids indeed effectually diminish and temper the Force of a Cathartick; but the same may be done by only lessening its Dose. As to Aromatics and aromatick Oils, I look upon them to be very bad Correctors: For they produce a stronger Irritation in the Bowels than the Medicine itself, and render it ineffectual; since they frequently raise an Inflammation, and so hinder the Discharge of Humours. Alkaline Salts seem much fitter to correct resinous Catharticks; because by dividing their tenacious or resinous Parts, they prevent their adhering to the Membranes of the Intestines, which otherwise they are apt to do. Nevertheless these Salts abate not their Acrimony, but, on the other Hand, increase it.

Therefore, to the End that a purgative Medicine may succeed well, let it be suited to the Disease and Temperament of the Patient, and be given neither in too small nor too large a Dose; and then it will require no Correction. Or, if it be necessary any

Way to qualify its Force, let it be diluted with a sufficient Quantity of Liquor. And this may be understood of Purgatives in general. As to Jalap, it wants no Corrector, since its saline and sulphureous Parts are extended by a sufficient Quantity of Earth; insomuch that no Preparation thereof is better than the Root in Powder. A Resin is got from it with Spirit of Wine, and a gummous Extract with Water. However, the Resin purges no more, but, on the contrary, sometimes, less than the Root, and always occasions Pains and Gripings of the Bowels. And again, the gummous Extract is very weak, and therefore operates but slowly.

The Powder of Jalap is sometimes ordered to be drank with Liquors, but is more commonly given in a Bolus.

Take of Jalap in Powder ℥j. Infuse it a Night in ℥vj. of white Wine. Let the Infusion with the Powder shook up together be taken in the Morning.

Take of powdered Jalap gr. xxiv. of the Syrup of Peach-Blossoms q. f. to make a Bolus.

Take of the Powder of Jalap gr. xvij. the Duke of *Holstein's* Salt ʒss. Conserve of Orange-Flowers. q. f. to make a Bolus.

Take of Rhubarb powdered gr. xxiv. Jalap gr. xij. dulcified Sublimate gr. x. make them into a Bolus with q. f. of any proper Syrup.

ARTIC. XII. Of I P E C A C U A N H A.

This excellent anti-dysenterick Medicine was discovered in the *New World* about the Middle of the last Age, and described by *William Piso* in his History of the *Indies*; by whom, and also by *Markgrave*, it was brought from *Brasile* into *Europe*.
How-

However, it remained in Obscurity, and altogether unknown in *France*, till about the Year 1672. when *M. Legras*, a Physician who thrice had travelled over many Parts of *America*, brought it with him to *Paris*. But notwithstanding, its Virtues being not sufficiently known, it was still neglected for a long Time. Till at length one *Garner*, a foreign Merchant, brought it again to *France*, and greatly extolling its Virtues, *M. Adrian Helvetius*, a Physician of the Faculty of *Rheims*, ventured to use it: and his Success was so extraordinary, that *Lewis XIV.* purchased the Secret of him, and made it publick.

In regard of the Places from whence this Root is brought there are two Sorts, (*viz.*) the *Peruvian* and the *Brasilian*; but in respect of its Colour, three; which are the *gray*, the *brown*, and the *white*.

1. *Ipecacuanba cinerea*; *Ipecacuanba Peruviana*, Off. The gray or *Peruvian Ipecacuanba*, which is called by the *Spaniards Bexuguillo* and *Rais de Oro*, and is perhaps the *Ipecacuanba alba* of *Piso*, is a tortuous Root, two or three Lines thick, and encompassed, as it were, with rough Rings or Circles, being of a light brown or ashy Colour, dense, hard, brittle, and resinous, with a small String running through the Middle, having a subacid bitter Taste, and a faint Smell. It grows about the Gold Mines in *Peru*, and is imported every Year by the *Spaniards* at *Cadiz*.

The Plant of which this Sort is the Root is not known, unless it be the *Ipecacuanba alba* of *Piso*.

2. *Ipecacuanba fusca*; *Ipecacuanba Brasiliana*, et *Radix Brasiliensis*, Off. The brown, or *Brasilian Ipecacuanba*, or *Brasile-Root*, which is produced from the *Ipecacuanba altera seu fusca*, *Pison. Ouragoga*, *Lin. gen. 934*, is tortuous and encompassed

with Rings like the former, but is rougher and also thinner, being but about a Line in Thickness, of a brown Colour or blackish on the outside, and white within, having a gentle Bitterness in its Taste. This is brought from *Brasile* to *Lisbon*.

3. *Ipecacuanha alba*, seu potius *Ipecacuanha adulterina*. White, or rather Bastard-*Ipecacuanha* is a thin woody Root, without Wrinkles, void of Bitterness, and of a yellowish white Colour. Some assert this to be the *Ipecacuanha alba* of *Piso*, which I question very much; because the Root which *Piso* describes under that Name, both vomits and purges; whereas this does neither. It therefore seems most likely, that the Merchants mix this with *Ipecacuanha*, rather through Avarice, than upon Account of any Affinity between the two Roots; for the *Ipecacuanha alba* of *Piso* is probably the same with the *Ipecacuanha Peruviana*, or the *Bexuguillo* of the *Spaniards*, as we have before observed.

The gray and brown *Ipecacuanha* are emetick and cathartick. *Piso* likewise commends their alexiterial Quality; and asserts, that their Virtues are not only extraordinary in Dysenteries and inveterate Fluxes of the Belly, but in many Disorders also arising from long and obstinate Obstructions. The *Peruvain* or gray Sort is preferred, as being much milder in its Operation. It is made Choice of well preserved, full of Juice, and not too old. However, according to *Piso*, when it is old it has some Efficacy remaining; for though it loses its emetick Quality, yet it retains its sudorifick and alexiterial Virtues for many Years. Both Sorts are much used at present in Fluxes of the Belly; but are chiefly successful in curing a confirmed Dysentery; for they frequently conquer the Disease in the Space of one Day, like a Charm.

They

They are so viscid and acrimonious, that a Person by reducing a Pound or two of either Sort into Powder, and not taking Care to avoid the finer Parts that are raised out of the Mortar, is effected in a short Time with a difficult Respiration, Bleeding at the Nose, spitting of Blood, Inflammation and Swelling of the Eyes, Face, or sometimes of the Throat, with the like Symptoms; which either of their own Accord, or by opening a Vein, disappear in a few Days. Further, being boiled in Water they give out a large Quantity of Mucilage, which is so thick and tenacious, that a strong Expression is required to strain it through Linen.

By Spirit of Wine, from eight Ounces of gray or *Peruvain* Ipecacuanha, were got ten Drachms of Resin. From the same Quantity of the Root, by common Water, were obtained three Ounces and a Half of a gummous Extract. The Powder remaining, after the Gum and Resin had been extracted from eight Ounces of the Root, weighed four Ounces.

From eight Ounces of brown or *Brasilian* Ipecacuanha were got six Drachms of Resin: and the same Quantity of the Root yielded one Ounce and three Drachms of Gum. The Powder remaining, after the Gum and Resin had been extracted from eight Ounces of the Root, weighed six Ounces.

Hence it appears that the Quantity of active Principles, that is, of Resin and Gum, is greater in the gray Sort than in the brown.

The resinous Extract is strongly emetick. The gummous Extract likewise vomits, though but very little; yet it sometimes cures Dysenteries, whilst the Resin, on the other Hand, does not. The Powder remaining after the Extraction of the Gum and Resin is altogether inert; since it neither vomits,

nor purges, nor cures Dyfenteries. Hence therefore we may conclude, that the principal Virtues of Ipecacuanha in curing this Disease, are owing to its Gum: For the Membranes of the Intestines, being deprived of their Mucus, are besmeared with the mucilaginous Parts of the Medicine, and their Ulcerations are dried and healed. It is true, the Resin also, by its emetick Quality, may be conducive in some Measure to the Removal of the Disease, by dividing and evacuating the morbidick Matter which lurks in the Glands of the Stomach and Intestines. However, it must be allowed that these Substances, as they are naturally combined in the Root, cure Dyfenteries with much greater Certainty, than in a separate State.

Piso proposes ʒj. of the Root in Powder for a Dose, and ʒij in Decoction or Infusion. He says the Inhabitants of *Brasile* chuse to make use of it diluted with Liquors, rather than in Substance; because by letting it stand a Night in Maceration in the open Air, or by boiling it in Water, they are able to obtain a considerable Share of its Virtues; and afterwards the *Residuum* being again treated in the same Manner, the strained Liquor is administered as the first, being now less cathartick and emetick, but more astringent. For we must observe that this Root not only makes a Revulsion of the viscid morbidick Matter from the Part affected, and discharges it by Vomit, but by its Astringency also restores the Tone of the Bowels.

With us it is more commonly used in Substance, than in Decoction or Infusion; being generally taken on an empty Stomach in the Morning from ʒss. to ʒss. in Wine, Broth, or Wafers. The first Dose often cures a Dyfentery: if not, we must have a Recourse to a second; and so to a third. Some, for fear of a Relapse, prescribe a stomachick
and

and anodyne Draught for the Patient to take the same Day in the Evening. Thus,

Take of Ipecacuanha in Powder ℥j. or ʒfs.
Syrup of Quinces q. f. Make a Bolus and give it in the Morning in a Wafer, with a Draught of Broth, or Wine and Water after it.

Take of the Confection of Hyacinth ʒj. Syrup of white Poppies ʒvj. dissolve them in ʒiij. of Plantain-Water, for a Draught to be taken when going to Bed. Or,

Take Diaphoretick Mineral, red Coral and sealed Earth, ā gr. xv. Cinnamon and lesser Galangal ā gr. x. Opium gr. fs. Syrup of Quinces q. f. Mix and make a Bolus.

I have found by Experience, that six Grains of Ipecacuanha vomit very well, and that ten Grains operate as strongly as one or two Scruples. Wherefore I think a larger Dose than six or ten Grains entirely needless.

As it is observed that this Drug must be frequently repeated in order to prevent Relapses, therefore, after the Patient has been sufficiently purged both upwards and downwards by a considerable Quantity, I order a few Grains to be taken at several Times in the Day; that so, without occasioning any Evacuation, it may act as an Astringent; and by spreading the Coats of the Intestines over with its Mucilage, may deterge and dry up the Ulcers. By this Method the Patient is freed both from the Disease and the Danger of a Relapse.

Therefore, when a Person labours under a simple Dysentery, let him be duly prepared, first by Bleeding if there be a Plethory or Fever; and afterwards by proper Clysters and a suitable Diet. Then
let

let an Evacuation be made by the following or the like Forms of Medicines.

Take of *Calabrian* Manna ℥j. dissolve it in ℥vj. of Plantain-Water. To the strained Liquor add of the universal Electuary with a double Quantity of Rhubarb ℥ss. of the Powder of Ipecacuanha gr. vj. Make a Draught to be taken in the Morning. Or,

Take of Rhubarb powdered ℥j. Jalap gr. xij. Brasile-Root g. vj. Syrup of Succory with Rhubarb q. s. Make a Bolus.

When the first Passages by these Medicines have been well evacuated both by Vomit and Stool, give the following astringent and strengthening Electuary.

Take Conserve of red Roses and Hips ā ℥j. Venice-Treacle ℥ij. Powder of Ipecacuanha gr. xvij. Syrup of Quinces q. s. Mix and make an Electuary. The Dose is ℥j. in the Morning fasting, and the same four Hours after Dinner, till the Disease is perfectly cured.

The great *Tournefort* has observed, that this Specifick is less successful in Camps than in private Families; either because the Strength of the Soldiers is generally exhausted by Toil and Hardship, and their Bowels are too much injured; or because the Air which they breathe is unwholesome and full of noxious Vapours. And what he has asserted in regard to Soldiers, I have also experienced amongst the Poor; especially when the Dysentery has been epidemical, and owing to some malignant Exhalation, which either the Aliment or the Air have introduced into the Mass of Blood.

For

For when the Disease is of this Nature, it is to no Purpose to give *Ipecacuanha*, unless the Use of it be continued for some Time, with the Assistance of cordial and alexipharmack Medicines. For Instance, in an epidemical and malignant Dysentery,

Take of the univerval Electuary with a double Quantity of Rhubarb $\text{z}ij$. Powder of *Ipecacuanha* gr. x. Make a Bolus.

In Case of great Weakness, it will be proper to order the following cordial and anti-dysenterick Mixture immediately after the Evacuation.

Take the Confection of Hyacinth and *Diascordium* \bar{a} $\text{z}j$. Powder of *Ipecacuanha* gr. x. Syrup of Quinces $\text{z}j$. Cinnamon-Water $\text{z}ss$. Plantain and Baum-Water \bar{a} $\text{z}ijj$. Mix and let a Spoonful be taken every Hour.

The Day following,

Take of *Diascordium* $\text{z}j$. *Brasile*-Root gr. j. Make a Bolus, to be repeated Morning and Evening till the Patient is quite recovered.

Although the Virtues of this Root render it a Specifick in the Dysentery, yet its Efficacy is not so certain against other Fluxes of the Belly; and it is even more successful in a confirmed Dysentery, than during the first Stage of it. For in the Beginning, the Heat of the Blood is too immoderate, and the morbid Ferment too impetuous and unruly for the Medicine to take Effect: But when the Disease is confirmed, or in its Decline, the morbid Matter, which is then separated from the
Blood,

Blood, harbouring chiefly in the Intestines, is more easily evacuated.

In fine, this Remedy, if it be duly administered, very seldom fails. That it sometimes answers not our Expectation is generally owing either to some incurable Affection of the Bowels, or a total Depravation of the Humours. However, though it has not the desired Success, yet the Patient is not worse for using it; for which reason, it may be deservedly called the safest and the best of Medicines*.

ARTIC. XIII. Of FLORENTINE ORRIS.

Iris Florentina, Off. *Ἴρις Ἰλλυρικὴ*, *Diosc. et Græcor.* *Asmeni iuni sive Aiersa Arab.* The Root of *Florentine Orris* comes to us in oblong tuberous Pieces, somewhat flat and as thick as one's Thumb, or sometimes twice as thick, having its Bark, which is of a reddish yellow Colour, pared off with its Fibres, and then it appears white and spotted. It has a fragrant Smell, something like a Violet, and a bitter acrid Taste. It ought to be made Choice of well preserved, white, fragrant, and free from Wrinkles.

The Plant is called *Iris alba Florentina*, C. B. P. White *Florentine Orris*, or Flower-de-luce of *Florence*. *Iris Flore alba*, J. B.

Both the Ancients and Moderns have attributed many Virtues to this Root. Being given from ℥j. to ʒj. it attenuates and incides inspissated Lymph in the Lungs, and so helps Expectoration: Whence it is useful in *Asthmas*, Difficulty of Breathing, and

* This Root is very rarely made use of in *France*, except in the Cases above mentioned; for in others *emetick Tartar* is preferred. But in *England* it is given not only in *Dysenteries* and *Diarrhœas*, but likewise in *Fevers*, and almost all other Distempers that require Vomiting.

Coughs. It is likewise serviceable to Children in the Gripes; and externally applied is reckoned narcotick. Moreover, it is mixed with other Ingredients in the Intention of a Sternutatory, Er-rhine, or Apophlegmatism. *C. Hoffman* says it causes Sleep; though not by Virtue of a narcotick Quality, but by a certain vaporous Substance, of the same Nature with that which composes Saffron, Myrrh, Nutmegs, &c. But he tells us, that it has this Effect only in Persons who are of cold and moist Temperaments.

Take the Root of *Florentine* Orris, Liquorice, Aniseed, native Sulphur, q. v. Syrup of white Horebound q. f. Make an Electuary. The Dose is ʒj. several Times a Day for an *Asthma* or Cough.

Take *Florentine* Orris and male Piony ā ʒij. Saffron ʒiij. Fennel ʒij. Sugar-candy ʒiij. Make a fine Powder, of which give ʒj. or ʒij. to Children, in the Mother's or Cow's Milk, or in Pap, to appease the Gripes and discuss Wind in the Bowels.

Take of *Florentine* Orris ʒiij. Leaves of Betony and Marjoram ā ʒj. Mix them for a sneezing Powder.

Take of *Florentine* Orris ʒij. the Seed of Mustard and Staves-aker ā ʒfs. Being grossly bruised and tied in a Nobule, let them be held in the Mouth and chewed for half an Hour fasting, holding down the Head to discharge the Spittle.

ARTIC. XIV. Of PELLITORY of SPAIN.

Pyrethrum, Off. Of this there are two Sorts. The one is about as long and thick as one's Finger,
 2 of

of a dark yellowish Colour on the outside and whitish within, having some Fibres growing to it, and an extremely acrid and burning Taste, but void of Smell. It is brought from *Tanis, Spain, Italy*, and other warm Climates. The other Sort is thinner and less acrid.

The Plant which produces the first is called *Chamæmelum specioso flore, radice longâ, fervidâ, Shaw Catal. No. 138. p. 39. Pyrethrum vulgò et veteribus Arabibus, Guntuss. ejusd. Buphthalmum creticum, Cotulæ facie, flore luteo et albo, Breyn. Cent. 1. p. 150. Tom. 75. Buphthalmum caulibus simplicissimis, unifloris, foliis pinnato multifidis, Lin. H. Cliff. p. 414.*

The latter is the Root of the *Leucanthemum Canariense, foliis Chrysanthæmi, Pyrethri sapore, Inst. R. H. Chrysanthæmum fruticosum, foliis linearibus, dentato trifidis, Lin. H. Cliff. 417. Chamæmelum Canariense ceratophyllum fruticosius glauco folio crassiore, sapore fervido, Magala ab Incolis nominatum, Mor. Hist. Oxon. Part. 3. p. 35.*

Pellitory being held in the Mouth opens the salival Ducts and draws forth abundance of Spittle; which renders it a Specifick in the Tooth-ache, particularly when the Pain proceeds from Obstructions or a Catarrh. By its Acrimony and Pungency it also vellicates the Nerves, and resolves their Obstructions, and is therefore very useful to be held in the Mouth and chewed in sleepy Diseases, or Palsy of the Tongue.

Take of the Root of Pellitory q. v. steep it in Vinegar all Night, and let it be chewed in the Morning.

Take the Root of Pellitory and Ginger ā ʒj. black Pepper ʒss. Reduce them to Powder and make a Nodule to be held betwixt the
Teeth;

Teeth ; or let them be made up with Wax into Balls of the Size of an Hafel-nut, and be used as a Masticatory.

It is feldom given inwardly, except by Way of Clyster in Apoplexies and other sleepy Affections.

Take of Pellitory Root \mathfrak{zj} . boil it in $\mathfrak{℥j}$. of the common Decoction for Clysters ; and in the strained Liquor dissolve \mathfrak{zss} . of *Sal Gem* for a Clyster.

ARTIC. XV. Of RHUBARB.

Some Botanists confound the Rhubarb of the Moderns with the Rhapontick of the Ancient *Greeks* ; but from the Description of Rhapontick given by *Dioscorides* under the Name of $\rho\alpha$ or $\rho\eta\nu$, their Difference is evident ; this appearing to have been the same with the Rhapontick of *Prosper Alpinus*.

Rhabarbarum, Off. *Rhabarbarum verum, seu Sinenfe*. The officinal or true *China-Rhubarb* is brought to us in thick Pieces of unequal Magnitudes, being sometimes four, five, or six Inches long, and three or four Inches thick, of a yellow or brownish Colour on the outside, but marbled, or variegated like a Nutmeg within with Saffron-Colour and yellow, and of a light, fungous Texture. The Taste is subacid, bitterish, and a little astringent ; and its Smell is aromack, though somewhat unpleasent. When it is used in Physick it ought to be fresh, sound, and of a good Colour, giving a Tincture to aqueous *Menstruums* like Saffron, and leaving no Sliminess upon the Tongue. It comes to us from the *East-Indies*, *Turkey*, and *Muscovy*.

[Of what *Species* the Plant is which produces Rhubarb is not very easy to determine; no Author having yet given any certain Account of it. *Muntingius* indeed has published a Figure and Description thereof, taken from *Matthiolus*, under the Name of *Rhabarbarum lanuginosum, sive Lapatbum Chinense longifolium*: But it is plain neither he nor *Matthiolus* had ever seen it; because no Plant hitherto known corresponds to their Description. It is very likely, therefore, that both the Description and Figure were formed meerly from the Relations of Merchants who brought the Root from *China*.

However not long since, *M. Anthony* and *M. Bernard de Jussieu*, Professors of Botany in the Royal Garden at *Paris*, had a Plant sent to them from *Muscovy*, called *Rhabarbarum folio oblongo, crispo, undulato, flabellis Sparsis*, which is the same that had been sent before from that Country to *Mr. Rand*, Director of the Physick-Garden at *Chelsea*, for true *China* Rhubarb, under the Name of *Lapatbum Bardanæ folio, undulato, glabro*. And this undoubtedly is the true *China*-Rhubarb; not only as it was sent for such, but because its Seeds agree with those of the true Rhubarb which were transmitted from *China* to *M. Vandermonde*, Physician of the Faculty of *Paris*. The Root, moreover, has exactly the Figure and Appearance of Rhubarb, and its Colour, Smell, and Taste also are the same. This Plant is now cultivated in the Royal Garden at *Paris*, where it flourishes and bears the coldest Winters.]

Rhubarb contains a large Quantity of Sulphur and fixt Salt, joined with a little acid Salt and a large Stock of Earth. From these Principles mixed together arises a gummous Compound, whereof the Gum and Earth are easily separated, and in no
small

small Quantity: For from two Ounces of Rhubarb, by common Water, were got one Ounce and twelve Grains of a gummous Extract. The Proportion of Resin is very small, and That divided by a great deal of alkaline Salt; insomuch that three Drachms of a salino-resinous Extract is as much as can well be obtained from two Ounces of the Root. Moreover, this Extract, by reason of the large Portion of Salt, easily dissolves in common Water: And on the same Account, the Tincture of Rhubarb made with Spirit of Wine does not turn milky in Water like other resinous Tinctures.

All Physicians allow two different Qualities in Rhubarb; the one purgative, the other gently restraining. It is especially reckoned an excellent Chologogue; and some, by Reason of its Efficacy in resolving Obstructions of the Liver, have dignified it with the Titles of *Anima*, *Vita*, and *Theriaca Hepatis*. It is serviceable in the Jaundice, Loosenesses, Gonorrhœas, and the *Fluor albus*; and also kills Worms. It is sometimes given with an Intention to evacuate Bile, and sometimes as an Alterative; and is certainly an excellent Medicine, being accounted safe not only to Children, Adults, and old People, but likewise to Women during their Pregnancy and Lying-in.

But notwithstanding so many Encomiums, we must not suppose it entirely free from Inconveniences; for it leaves the Intestines dry, and is sometimes offensive to the Kidneys, Bladder, and Brain; and is therefore improper when the Bowels or the Blood are over heated, or the Humours in a strong febrile Effervescence. It is of great Service in the Jaundice, when a Viscidity or Inspissation of the Bile, obstructing the secretory Ducts of the Liver, is the Cause of the Disease: But when it proceeds,

on the contrary, from a too exalted, volatile, and incalescent State of the Bile, diffusing itself entirely over the whole Habit, Experience teaches us that Rhubarb is prejudicial, or at least that it does no good. *Fallopious* blames it, as being hurtful in Affections of the Kidneys and Bladder; in which Parts it occasions Heat. And *Simon Paulli* observes a long and frequent Use of it to have brought on a *Vertigo* or Giddiness. Hence then we may conclude, that Rhubarb ought not to be used without Caution.

It is prescribed in Substance, sometimes to be chewed and swallowed before Meals, to help Concoction, to strengthen the Tone of the Stomach, Intestines, and other Parts, and to remove Obstructions of the Liver, Spleen, and Mesentery. In Cachexies of Children it is ordered in Infusion, to destroy Worms and carry off the verminous Matter. The Dose in Substance is from ℥ss. to ʒj. and in Infusion to ʒij. Some order it to be toasted, with a Design of lessening its purgative Quality, and increasing its Astringency: But in my Opinion such Management is needless; because we are furnished with a sufficient Number of astringent Medicines, which may either be mixed with it, or given when it has done purging.

An Extract is usually prepared from it in the Shops, thus.

Take of Rhubarb bruised and cut small ℥j. pour upon it ℥iv. of Succory-Water. Let them stand together in Maceration in a gentle Heat for twelve Hours, and then strain the Infusion through Linen. Upon the remaining Mass pour ℥j. of Spirit of Wine, and macerate for six Hours more. Afterwards evaporate the Tincture, decanted clear and mixed with the Infusion,

Infusion, to the Consistence of an Extract, which may be given from ℥ss. to ʒj. in the Form of a Bolus or Pills.

But it is to be observed, that Rhubarb purges much better in Substance, than either in Decoction, Infusion, or Extract, though given in a double Quantity.

Take Rhubarb and soluble Tartar ā ʒj. Infuse them a Night in ʒvj. of Succory-Water. In the Infusion dissolve ʒiss. of *Calabrian* Manna, and give the strained Liquor to purge off the Bile.

Take of the Pulp of Cassia fresh drawn ʒvj. Rhubarb and vitriolated Tartar ā ʒss. Mix and make a Bolus, which may be divided into three or four Parts, and so taken.

Take of Rhubarb powdered gr. xxiv. Jalap gr. xij. Ipecacuanha gr. x. Syrup of Succory with Rhubarb q. s. Make a purging Bolus for a Dysentery.

Take of Rhubarb gr. xxiv. Jalap gr. xij. dulcified Sublimate gr. x. lenitive Electuary ʒj. Syrup of Succory with Rhubarb q. s. Make a purging Bolus.

Take of Rhubarb bruised and cut small ʒiv. Infuse it in ℥ij. of Spring Water; then infuse in ʒvj. of strong white Wine, ʒj. of the Filings of Iron, and macerate for six Hours. Afterwards strain the two Infusions and mix them. The Dose is four or five Spoonfuls a Day when the Stomach is most empty. This is proper to open Obstructions of the Liver and Spleen, or to cure the *fluor albus*, the Patient having been duly prepared.

Take of Rhubarb in Powder ʒiij. the mercurial *Panacea* ʒj. Balsam of Capivi ʒifs. Mix them into an Electuary, and give ʒj. Morning and Evening in a Gonorrhœa, the Patient being purged every third or fourth Day with mercurial Pills.

ARTIC. XVI. *Of* S A R S A P A R I L.

Sarsa-parilla, et Salsa-parilla, Off. Under this Name in the Shops we meet with Roots or rather *Flagella* or long Switches, of the Thickness of a large Rush or Goose-Quill, tough, flexible, and marked with Furrows quite along, with a thin Bark of a brown or ashy Colour, under which is a white farinaceous Substance, coarse, soft, and easy to be rubbed to Powder by the Fingers, being almost like Agaric, in Taste somewhat glutinous and bitterish, though not unpleasant; and a woody, smooth Pith, or tough String, runs through the Middle. A great Number of these Switches or Twigs descend from one Head or a squamous Root as thick as one's Thumb. It comes from *New Spain, Peru, and Brasile*. The best Twigs are full, pithy, dense, sound, of a white Colour within, and about as thick as a Goose-Quill, and like Twigs of Willow are easily pulled asunder into Shreads through their whole Length. When their Colour appears blackish, or they are rotten, so as to let fall much Dust or mealy Powder in Splitting, or when they are too thick, such as are brought from that Part of *Brasile* which is called *Maranbaon*, they are not fit to be used in Physick.

The Roots of diverse Plants are imported from *America* under the Name of Sarsaparil, bearing all a Resemblance or Affinity to the *Smilax aspera*. Of these *Hernandez* mentions four *Species* which grow
in

in *Mexico* and *New Spain* (viz.) *Mecapatli seu Zarsaparilla prima*. *Quaubmetatl seu Zarsa-parilla secunda, et tertia*; and *Quaubmecapatli altera seu Zarsa quarta*.

From four Pounds and a Half of Sarsaparil, distilled in a Retort, were obtained two Ounces of insipid Phlegm; eight Ounces of subacid Phlegm; fifteen Ounces of acid Spirit; fourteen Ounces of Spirit impregnated both with urinous and acid Salt; and six Ounces of thick Oil. There remained in the Retort twenty-three Ounces of *Caput mortuum*. This being perfectly calcined weighed five Ounces, seven Drachms and a Half; from which were extracted one Ounce, two Drachms and twenty-six Grains of fixt Salt. Whence it appears, that the Effects of this Root are owing to an essential acid Salt, enveloped with a thick Oil and a large Quantity of Earth.

This Drug was quite a Stranger both to the *Greeks* and *Arabians*, being first brought into *Europe* by the *Spaniards* from *Peru*.

It provokes Sweat, and divides and attenuates viscid and tenacious Humours. In the Pox, Gout, catarrhus Affections and the Palsy, it is reckoned a Specifick; as also in chronical and inveterate Distempers which proceed from thick and viscid Humours; for resolving obstinate preternatural Tumours; and against Ulcers, Tettors, and all other Diseases of the Skin.

When it was much in Vogue for the venereal Disease, the Method of giving it was this. Four Ounces were macerated for twenty-four Hours in twelve Pints of Water, which was afterwards boiled away to half. The Decoction was then strained through Linen and kept for Use. Of this the Patient, after a due Preparation, drank eight Ounces warm Morning and Evening, eating no-

thing for four Hours after, and lying in Bed well covered with Clothes to sweat. Sometimes a little of the Root in Powder was mixed with each Glassful of the Decoction. And thus it was continued for thirty, and in stubborn Cases, for forty Days, with a Purge every tenth Day, and a very sparing Diet; nothing being allowed but Biscuit and Raisins. By this Method the *Spaniards*, and Inhabitants of the southern Parts of *America*, were wont to cure the venereal Disease; but in our Climate, which is much colder, it has been attended with no great Success. This may be attributed to two Causes: As first, to the Density of the Skin in People of these Climates, they being on that Account less disposed to sweat; and secondly, to an improper Diet, the Patients here not observing so exact and low a *Regimen* as both the Remedy and the Disease require. For, if we may credit *Monardus*, the *Indians* are so very strict in this Point, that they starve and emaciate such as labour under a venereal Infection to the last Extremity, allowing them nothing to eat or drink for three Days, except a warm viscid Liquor which they obtain by Decoction from Sarsaparil.

This Root is supposed to consist of finer Parts than either *Cbina* or *Guaiacum*, and therefore to be more sudorifick. It is given from $\mathfrak{z}\text{ss}$. to $\mathfrak{z}\text{ij}$. in Substance, and to $\mathfrak{z}\text{ss}$. in Decoction. *Monardus* cautions us to abstain from it in Fevers and acute Distempers. It is made use of chiefly in drying and sweating Ptisans and Apozems.

Take of Sarsaparil cut small $\mathfrak{z}\text{ij}$. Guaiacum $\mathfrak{z}\text{ij}$.
boil them in $\mathfrak{f}\text{x}$. of Spring-Water to a
Consumption of Half; then strain the De-
coction, and give a Glassful now and then.

Take

Take of Sarsaparil ℥ij. put them into the Belly of a drawn Pullet, and boil them in ℔vj. of common Water to ℔iv. for four alterative Broths, to be taken one every fourth Hour in the Rheumatism.

Take Sarsaparil and China ā ℥ij. of the Bark and Wood of Guaiacum together ℥j. Saffras ℥ss. Quicksilver confined in a Nodule ℔ss. boil them in ℔vj. of Water to ℔iv. and make an Apozem for the venereal Disease, Catarrhs and the Palsy.

Take Sarsaparil, the Tops of lesser Centory, and the Roots of round Birthwort ā ℥iss. the Leaves of Germander and Ground-Pine, and the Seed of St. John's Wort ā ℥ij. the Root of Angelica ℥ss. Cinnamon ℥ss. Saffron ℥j. Cloves ℥ss. Let them all be powdered and mixed with Honey q. s. The Dose is ℥iss. every Morning on an empty Stomach for a whole Year, in arthritick Disorders or the Rheumatism from a cold Cause.

ARTIC. XVII. Of SNAKE-ROOT.

Serpentaria Virginiana; Colubrina Virginiana, Off. Radix Snagroël novæ Angliæ, Cornut. This is a thin, light and fibrous Root, of a brown Colour without and yellowish within, having a fragrant aromattick Smell something like Zedoary, and a sub-acrid, bitterish Taste. It is brought from *Virginia*, and ought to be made Choice of fresh, aromattick, and free from the Mixture of other Roots.

Plukenett, in his *Phytography*, mentions three Plants, whose Roots are brought from *Virginia* for Snake-Root. The first is called *Aristolochia polyrrhizos auriculatis foliis, Virginiana*, which is the *Serpentaria altera, Virginiana vulgò*. *Raii Hist.*

T. 3. p. 393. The second, *Aristolochia Violæ fruticosæ foliis, Virginiana, cujus radix Serpentaria dicitur*. And the third, which is a true Species of Snake-Root, is distinguished *Aristolochia, Pistolochia caule nodoso, seu Serpentaria Virginiana D. Banister, Pluk. Phyt.*

Snake-Root, in a chymical Treatment, gives up a large Quantity of acid Spirit, with both a thick and thin Oil; a moderate Quantity of *Caput mortuum* remaining in the Retort, full of fixt alkaline Salt. Moreover, from the Root, either by Water, or by Spirit of Wine, may be drawn a salino-resinous Extract, though not a pure Resin. Hence we may conclude that its Virtues are owing to an acid Spirit, an Oil, and a fixt alkaline Salt, mixed together.

It is accounted diuretick, diaphoretick, and alexipharmack. It resists Poisons and Putrefaction, and is extolled as a certain and speedy Remedy for the deadly Bite of the Rattle-Snake, being therefore called Snake-Root. They who have been bit immediately fall to chewing this Plant, and swallow the Spittle, applying at the same Time some of the Leaves bruised to the Wound. It is reported also to cure the Bite of a mad Dog; and to prevent an *Hydrophobia*. It destroys Worms and the verminous Putrefaction; and has likewise a febrifugous and anti-hysterical Virtue ascribed to it. In Powder it is ordered from gr. x. to ʒss. and in Infusion to ʒij.

Take of Snake-Root gr. xij. Crabs Claws p. p. ʒj.
Syrup of Clove-July-Flowers q. f. Make a Bolus to provoke Sweat and remove Putrefaction in malignant Fevers. Or,
Take Snake-Root powdered gr. xx. Venice-Treacle ʒss. or q. f. to make a Bolus.

Take

Take Snake-Root cut small and bruised ʒvj . Boil in ʒxij . of Spring-Water to Half; adding towards the End gr. xij . of Cochineal. In the strained Liquor dissolve ʒj . of Honey, and add to the Solution when it is cold ʒfs . of Treacle-Water. Let two or three Spoonfuls be given every third Hour to promote a *Diaphoresis* or Sweat in malignant or putrid Fevers, or to prevent a Coagulation of the Blood from cold Poisons, and to expel the deleterious Particles.

Take Snake-Root, Contrayerva, and Viper's Flesh powdered āʒfs . Mix. This Powder is commended in malignant Fevers, against cold Poisons, and in intermitting Fevers to be given in the Beginning of the Paroxysm.

ARTIC. XVIII. Of SPIKENARD.

Dioscorides and other Writers mention several *Species* of this Plant, but no more than two are to be met with in the Shops at this Time, *viz.* the *Indian* and the *Celtic*.

1. *Nardus Indica*; *Spica, Spica Nardi, et Spica Indica*, *Off.* Ἰνδικὴ Νάρδος, *Diosc.* *Alsembel Sembelen, Alsembel Alcib, Alnardin albendi, Arab. Indian Nard, or Spikenard*, is a capillaceous Root, or rather a *Congeries* of slender Strings or convoluted Fibres growing upon the Top of the Root, being nothing but the nervous Filaments of withered Leaves closely matted together into a Tuft, which is called a Spike, perhaps, from its Figure. It is as long and thick as one's Finger, of a ferruginous or reddish brown Colour, a bitter, acrid, aromatick Taste, and pleasant Smell something like *Cyperus*. For Use it ought to be chosen fresh and light, with a long Tuft, and the true Smell and Taste.

The

The Plant is called *Gramen Cyperoides, aromaticum, Indicum, Breyn. 2. Prodrom.* It grows in *Java* in great Plenty, where it is much used by the Natives in the Kitchen to season Victuals.

From the Taste and Smell of *Indian Nard* we may conjecture that its Virtues are owing to a volatile oily Salt, enveloped with a large Quantity of fixt Salt and Earth.

It is alexiterial, cephalick, stomachick, and nephritick, and good in malignant Distempers. It stops Catarrhs falling from the Head upon the Breast or Stomach. It also strengthens the Stomach and helps Digestion, whether taken inwardly or outwardly applied. It brings all cold Diseases to Concoction, provokes the *Menses* and Urine, and is of Service for resolving Obstructions of the Liver, Spleen, and Mesentery. *Galen* cured the Emperor *Marcus* of a Weakness of his Stomach, and bad Digestion, by applying the *Unguentum nardinum* Plaister-wise to the Part upon Wool. *Bontius* tells us, that dry Spikenard infused in Vinegar and Sugar is taken by the *Indians* in Obstructions of the Liver, Spleen, and Mesentery, which are very common Disorders in those Climates; as also against the Bites and Stings of Serpents and other poisonous Animals, being in these Cases either put upon the Wound, or given inwardly. In an Hæmorrhage of the Nose *Riverius* commends it as an excellent and approved Remedy, being reduced to a fine Powder and taken in Broth, Plantain-Water, or any other suitable Liquor. The Dose is from ʒss. to ʒij. in Substance, and to ʒfs. in Infusion.

The Ancients prepared of it Collyriums and Unguents. The *Unguentum nardinum*, according to *Dioscorides*, was made of *Schænanth*, *Costus*, *Amomum*, *Spikenard*, *Myrrh*, *Balm of Gilead*, and the *Oleum Balantrum* or *Omphacinum*. To these was sometimes added the *Indian Leaf*.

2. *Nardus Celtica*; *Spica Celtica*, *Spica Gallica*, *Spica Romana*, Off. Νάρδος κελτικὴ et ἀλιόγγια, *Diosc. Saliunca*, *Plin. Alnardin Alsimbel Alkeliti aut Alkelt*, *Alsimbel alrumi*, *Arab. Celtic Nard* or *French Spike-nard* is a fibrous, capillaceous Root, of a reddish Colour, with Leaves or small *Squammæ* of a yellowish green Colour, of an acrid, bitterish, aromattick Taste, and a strong, fragrant Smell. For Use it ought to be fresh, of a good Scent, with a great Number of fibrous Roots, full, and not brittle. It had the Name of *Celtic Nard*, because it was formerly got upon the Mountains in that Part of *France* which was called *Gallia Celtica*. But at this Time it is also found upon the *Stirian Alps*, and upon the Hills of *Liguria*.

The Plant to which it belongs is the *Valeriana Celtica*, *Inst. R. H. Nardus Celtica Dioscoridis*, *C. B. P. Nardus Alpina*, *Clus.* The whole Plant has an aromattick Scent, much like the *Valeriana Sylvestris*. *Clusius* tells us it flowers in the Month of *August*, when the *Alps* are almost covered with Snow.

Celtic Nard has the same Virtues with the *Indian*; but is reckoned more efficacious for provoking Urine, strengthening the Stomach, and discussing Flatulencies.

ARTIC. XIX. Of ZEDOARY.

We find no Mention of Zedoary either in *Dioscorides* or *Galen*. The *Arabians* used it in Medicines, and some of them, as *Serapio* and *Razes*, confound it with Zerumbeth, which is the Root of the *Zingiber latifolium sylvestre* of *Herman*: And though *Avicenna*, who had better informed himself, makes Zerumbeth a different Root, allowing besides two *Species* of Zedoary; yet the Descriptions
which

which he, and the rest of the *Arabian* Writers, have given both of these and several other Drugs, are so short and ambiguous, that it is very difficult to draw any probable Conclusions from them. Wherefore, leaving these Uncertainties, we shall proceed to give an Account of the Zedoary which is now used in Medicines.

In the Shops we meet with two Sorts of Zedoary (*viz.*) the *long* and the *round*; which some Authors suppose to be only different Parts of the same Root.

1. *Zedoaria longa*, *Off.* Long Zedoary is a tuberous, dense, solid Root, two, three or four Inches long, as thick as one's Finger, and ending at each Extremity in an obtuse Point, of a cineritious Colour on the outside and white within, having an acrid, aromack, bitterish Taste, and a subtile fragrant Smell, emitting an exquisite Fragrancy, something like Camphore, when it is bruised or masticated. The best is large, dense, full, without Wrinkles, of a Substance, as it were, fattish or clammy, but so hard as to make some Resistance to the Teeth, of a very fragrant Scent, and free from Holes.

2. *Zedoaria rotunda*, *Off.* Round Zedoary agrees exactly with the former in Substance, Weight, Solidity, Taste, and Smell; differing from it only in Figure, which is bulbous or globular, about an Inch thick, and a little uneven on its Surface from the Remains of Fibres which have been pared off, sometimes terminating in a short Point, from which, whilst it continues in the Ground, it usually puts forth a Germ or small Shoot.

Both Sorts, according to *Garcias ab Horto* and *Herman*, are brought from *China*; but in the Shops round Zedoary is the more common.

We are not altogether certain of the Plant to which Zedoary belongs. Dale, after Breyn and Ray, supposes it to be the *Malan-Kua*, *H. Malab.* p. 11. 17. *Bon-Tsiappo Braman : Colchicum Zeylanicum flore Violæ, odore et Colore Ephemeri Herman. Parad. Bat. prod.* 304.

Another Species of Zedoary is mentioned by Herman, in his *Catalogus Horti Lugduno-Batavi*, under the Name of *Zedaria Zeylanica Camphoram redolens*, which the Inhabitants of Ceylon call *Haran-kaka*.

Zedoary being distilled with common Water yields a dense and thick essential Oil, which concretes into the Form of a fine Camphore. It therefore abounds with a subtile essential Oil united with a very volatile acid Salt; from whose Combination arises this fine camphorous Refin; which is enveloped in a large Quantity of Earth, and to which the Virtues of the Root are owing.

It is alexipharmack, resisting Poisons, the Bites of venomous Animals, and the Plague. It effectually provokes Sweat, and powerfully incides the thick tenacious Phlegm which stuffs up the Lungs in an Asthma and difficult Respiration, and promotes its Discharge. It divides and resolves viscid Serum stagnating in the Stomach and Intestines; discusses Wind, and relieves colick Pains thence arising. It strengthens the Stomach, helps Concoction, and stops Vomiting and Loosenesses, by corroborating the relaxed Fibres, and increasing their Oscillations. When the Blood is become, as it were, vapid, and destitute of its Spirits, whereby the vital Fermentation is preserved, it invigorates the whole Mass, supplying it with a fresh Stock of spirituous or active Particles: Whence it is often serviceable, like other fine and volatile Aromatics, in scorbutick Affections, Apoplexies,

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and

and Palfies. However, we must be cautious not to administer it indiscreetly to Persons of hot Temperaments; for by its Use the Fibres are rendered too dry, and the Humours, already too thick, are further inspissated, and so the Disease is either augmented, or changed into a worse. It is given in Substance from gr. vj. to ʒfs. and to ʒij. infused in Wine, or in hot Water like Tea.

Take long Zedoary and the true Acorus ana ʒfs. of Cinnamon ʒj. Infuse in ʒvj. of boiling Water, and give the strained Liquor sweetened with Sugar.

Take Zedoary and Sugar, ana ʒiij. of *Peruvian* Balsam gutt. xij. Make a Powder for twelve Doses. Or,

Take Zedoary, Acorus, Galangal, Angelica, and Cinnamon, ana ʒj. Cloves and Ambergrease ana ʒfs. Sugar of Roses ʒvj. Make a stomachick Powder. The Dose is ʒj. in a Draught of Wine before Meals, or immediately after, to help Digestion, and restore the relaxed Tone of the Stomach, or to allay flatulent colick Pains.

Take of Zedoary powdered gr. vij. Citron-Juice ʒfs. Spirit of Sulphur gutt. ij. Mix and give it against a Nausea, and to stop Vomiting.

Take of Zedoary ʒiij. Florentine Orris ʒij. Infuse them a Night in ʒvj. of strong Wine, and strain. Let the Patient take a Spoonful or two at proper Intervals to help Expectoration.

Take Zedoary, Castor, Snake-Root, and wild Valerian ana ʒj. Spirit of Hartshorn with Amber q. f. Draw a Tincture f. a. which from gutt. j. to x. in a suitable Vehicle, is an excellent Remedy in hysterical Affections.

A Tincture, and Extract also, are prepared from Zedoary either with Spirit of Wine, or with Wine.

The fresh Root is usually candied with Sugar, and is good to strengthen the Stomach.

ARTIC. XX. Of GINGER.

Zingiber sive Gingiber, Off. Σιγγίβερις, Diosc. et Gal. *Zimpipeiri et Zingiberi*, Plin. Ginger is a tuberous, knotty Root, divided into Branches, flat-tish, somewhat fibrous in its Substance, of a pale or yellowish Colour, and covered with a thin brownish Pellicle, which is usually stripped off before it comes to us, when the Root is fresh. It has an extremely acrid, hot, aromack Taste, like Pepper, and a fragrant Smell. It is brought from China, Malabar and Ceylon; and also from some Provinces of America. China Ginger being the least fibrous or stringy, is most esteemed. It ought to be fresh, of a white or pale Colour, and good Smell. When it is worm-eaten and dusty, it is bad; or when its Surface is spread over with Bole or Chalk to conceal Worm-Holes, to which it is very liable.

The Plant is called *Zingiber angustiori folio, fœmina, utriusque Indiæ alumna*, Plukn. *Almag.* p. 397. *Iris latifolia tuberosa, Zingiber dicta, flore albo*, H. Oxon. *Mangaratia, Pisonis: Gingibil, Bontii; Chilli Indiæ Orientalis, seu Zingiber fœmina, Hernandez; Inschi, vel Inschi-Kua, Hort. Malabar.*

It is cultivated in all the Provinces of the Indies. It does not seem to be a Native of America, but to have been transplanted from the East Indies, or Philippine Islands, into New Spain and Brasile.

Another Species is distinguished *Zingiber Sylvestre mas, Pison. Mantifs. arom. Anchoas seu Zingiber mas, Hernand. Katou-Inschi-Kua, Hort. Malabar*, which differs

differs little from the former. The Leaves are something broader and rougher. The Roots also are larger, and having a weaker Smell and Taste, are not so valuable.

The Roots of Ginger are gathered every Year after the Flowers are withered, and, the exterior Bark being taken off, are thrown into a Brine or Pickle: Where having lain an Hour or two in Maceration, they are exposed as long to the Heat of the Sun; and then are spread upon Mats in the Shade, till they are quite dry.

The *Indians* use the Leaves of the Plant in Salads, Soops, and other culinary Preparations. The green Roots also, cut small with other Herbs, are eat in Sallads with Oil, Salt and Vinegar. They are likewise candied with Sugar and served up in Deserts.

Ginger yields in Distillation an unpleasent and extremely acrid essential Oil. It abounds with a volatile oily Salt, replete with an hot or fiery Principle, to which its Smell, Taste and Virtues are owing.

Galen concludes, that the Parts whereof it consists are not so fine as the Parts of Pepper, because its Taste, though equally strong, is not immediately perceptible in the Mouth: And the Heat which proceeds from Ginger, continuing longer, than that from Pepper, he thence also infers, that its Substance is more gross and moist.

Dioscorides says it gently relaxes the Belly: Which is true, if the Roots are eat while they are fresh and tender; but when kept for some Time they are rather drying and astringent.

Fresh Ginger is reckoned by the *Indians* an excellent Remedy against colick Pains, the celiack and lienterick Passions, long Diarrhœas proceeding from Cold, Flatulencies, Gripings of the Belly, and other
Disor-

Disorders of the like Nature. Being taken dry, it strengthens the Stomach and promotes Concoction, deterges and dissipates Infarctions of the Stomach and Lungs, consuming the superfluous Humidity. It strengthens the Brain and helps the Memory, and is good against Dimness of Sight, when owing to Moisture. It provokes Lust, expels Wind, and is mixed with Antidotes as an Alexipharmack. It is often joined with Catharticks, either to increase their Force, or to correct their noxious Qualities.

This Caution, however, is always necessary to be observed, that they whose Blood is hot and bilious, whether in Health or sick, are to use it very sparingly; because Ginger, either dry, fresh, or preserved in Syrup, inflames the Blood and opens the Orifices of the Veins. Moreover, it ought not to be given in a large Dose to Melancholicks; because it renders the melancholick Humours thicker, more fixt, and sometimes, says *Herman*, altogether immoveable.

It may be taken in Substance by itself from gr. v. to xv. but is seldom ordered so by Reason of its Acrimony. The Dose in Decoction or Infusion is from ʒss. to ʒss. and to ʒj. candied.

Take of candied Ginger ʒss. Conserve of red Roses and candied Lemon-Peel ana ʒij. Extract of Juniper Berries ʒss. Cinnamon and Nutmeg ana ʒiss. Syrup of Citron-Peel, or of Quinces, q. s. Mix and make an Electuary, of which ʒij. may be taken immediately after Meals to help Digestion.

C H A P. II.

Of BARKS.

ARTIC. I. Of CINNAMON.

THERE was a very near Affinity between the Cinnamon of the Ancients and their Cassia, if we may not rather suppose they were the Produce of the same Tree.

The *Greek* Writers distinguish two principal Kinds of Cassia (*viz.*) 1. Κασία σύριγγξ or συρίγγις, *Cassia fistula* or *fistularis*, which was nothing but the Bark of a Tree convoluted into Tubes. 2. ξυλική Κασία or ξυλοκασία, *Cassia lignea*, which was the small Branches of a Tree entire with the Bark upon them. This *Dioscorides* calls βλαστὸς μοσυλίτης, the *Mosylitic* Branch.

Cassia fistularis, according to *Galen*, was very common and sold extremely cheap, and was the Sort which both the older and younger *Andromachus* required in the Composition of their *Theriaca**. The other Species of Cassia or *Xylocassia*, of which *Galen* enumerates many, were much scarcer.

* For this the modern *Greeks* substituted what they, and we after them, term *Cassia lignea*; though very improperly, since it is only a Bark. It was perhaps an entire Stranger to the Ancients; for although *M. Geoffroy* in his Account of it conjectures, that among so many Sorts of Cassia, this might possibly be known to them; yet he observes, that neither *Dioscorides* nor *Galen* have mentioned its Sliminess upon being chewed, which is so remarkable, that it would scarce have escaped their Notice. However, this bark has continued down to our Time an Ingredient in the *Theriaca*, &c. but the College have now expunged it, and ordered in its Stead an additional Quantity of Cinnamon.

The *Greeks* likewise make Mention of many Kinds of Cinnamon differing not greatly from each other; as, 1. *Μόσυλον*, the *Mosylitic* Cinnamon, which was the best. It was of a dark or vinous Colour inclining to gray, smooth, and in slender Sprigs or Branches encompassed in many Places with Knots, of a sharp, biting, hot and somewhat saline Taste. 2. *ὄρεινόν*, the Mountain Cinnamon. 3. *μέλαν*, the black. 4. *ὑπό κίρρον*, the yellowish; to which they add the *Xylo-Cinnamomum* and *Pseudo-Cinnamomum*.

Whatever Distinction the ancient *Greeks* would make between Cinnamon and Cassia is found to consist altogether in this (*viz.*) that Cinnamon had a grateful, sweet, aromatick Smell and Taste, far excelling Cassia. And indeed *Galen* observes, that the best Cassia differed very little from the worst Cinnamon, and was substituted instead of Cinnamon, but in a double Quantity.

Now, whether the Cinnamon and Cassia of the Ancients were one and the same Thing, and the same with our Cinnamon, or no, is a Point of much Dispute among Authors. Many of them, among whom is *Matthioli*, suppose the Cassia of *Dioscorides* to be our Cinnamon, and the Cinnamon of the Ancients to be entirely unknown to us. Others, with *Dodonæus*, imagine their Cinnamon to have been the Sprigs or younger Branches of the Clove-Tree. Others, again, believe that Cinnamon and Cassia were the same Thing, that is, were produced from the same Tree; only with this Difference, that Cassia, as it was commonly brought to them, was the Bark separated from the Wood, and Cinnamon the slender Sprigs of the Tree entire: Which appears to me most probable. For *Dioscorides* affirms, that Cinnamon has some Likeness of the Cassia which is termed *Mosylitis*; and *Galen* asserts, that Cinnamon in its Nature is in some

Measure like the best Cassia, which the Barbarians call *Gizi*. Besides, he tells us that he had seen some Branches of Cassia, grown up to the Bigness of a Shrub, which in Appearance and the Thinness of its Bark entirely resembled Cinnamon, as also in the most distinguishing Qualities of Taste and Smell. Moreover, forasmuch as *Theophrastus* and other ancient Writers observe, that in Cinnamon the Bark alone is useful, I think it may thence more probably be inferred, that our Cinnamon is the same with that of the Ancients, and that the several *Species* of their Cinnamon, Cassia and *Xylocassia*, differed only in the Manner in which they were brought to them, or from the Soils wherein they grew. For in the primitive Ages of Physick, under the Name of Cinnamon, the small Plant or the younger Sprigs were brought entire, and under the Name of Cassia, only the Bark: But when they considered that the woody Part of Cinnamon was altogether useless, it was rejected, and the Bark was afterwards brought alone; which Custom has been preserved down to the present Time. Nor was the Difference also small which proceeded from the Climate or Soil wherein they grew; as at this Time it is observed that the same *Species* of Cinnamon-Tree growing in different Countries affords a different Bark. Thus the Cinnamon of *Ceylon*, *Malabar*, and *Java*, differ from each other; and likewise the wild from the cultivated. Again, according to the different Age of the Tree, or the different Parts from which the Bark is taken, there arises a considerable Variety: The Cinnamon of a young Tree differs from that of an old one, the Bark of the Trunk from that of the Branches, and the Bark of the Root differs from both.

The Accounts which the Ancients have given of the Origin of Cinnamon and Cassia are full of Fables

Fables and Uncertainties: We shall therefore purposely wave them, and proceed to the History of the Cinnamon of our Shops.

Cinnamomum sive Canella vulgaris Off. The officinal Cinnamon is a thin Bark, commonly about as thick as a Card, though sometimes equal to two Lines or the sixth Part of an Inch, convoluted into slender Tubes or Quills a Cubit and Half long, or more, and as broad as one's Finger, of a woody and fibrous Substance, yet brittle, sometimes marked on its Surface with Wrinkles, sometimes smooth, of a reddish yellow Colour, or like the Rust of Iron, having a sweetish, aromatick, pungent or biting Taste, but creating no uneasy Sensation upon the Tongue, and a sweet and fragrant Smell.

It is the second and interior Bark of a Tree which is called *Cinnamomum sive Canella Zeylanica*, C. B. P. *Laurus Zeylanica baccis calyculatis* Hermannii, Raii Hist. *Cassia cinnamomea*, H. Lugd. Bat. *Canella quæ Cuurdo*, Pison. *Mantifs. arom. Arbor canelliferâ Zeylanica, cortice acerrimo seu præstantissimo, qui Cinnamomum Officinarum*, Breyn. 2. *Prodr. Cinnamomum foliis latis, ovatis, frugiferum*, Burm. *Thes. Zeyl. p. 62. Tab. 27. Laurus foliis oblongovatis, trinerviis, nitidis, planis*, Lin. H. Cliff. 154. It grows in Ceylon, where it is as common in the Woods and Hedges as the Hasel-Tree is with us.

When the Tree is of about three Years Growth, the Bark of the smaller Branches is stripped off. This is done either in the Spring or Autumn, at which Seasons a sufficient Stock of Sap is contained betwixt the Wood and the Bark; though more commonly in Spring when the Trees begin to flower. In the next Place, the cineritious and rough exterior Coat is pared away, and the other being cut into long flat Pieces is exposed to the Sun, where it turns up of its own Accord into Tubes. The

Tree afterwards continues naked for two or three Years, and then produces a new Bark, which is again fit for the same Management.

The best Cinnamon is of a yellowish Colour with a Cast of red, of a delightful Smell and aromattick, with a pungent Taste, yet something sweet and agreeable. The Virtue of this Bark seems to be wholly included in the fine interior Pellicle; for, according to *Herman*, more Oil has been obtained from one Pound of that, than from six Pounds of the entire Bark.

A wonderful Variety of odoriferous Oil may be drawn from the several Parts of this Tree. The Bark being distilled when it is fresh gives up a large Quantity of Oil, though when it is old, or has been long kept, it affords but little. The Oil obtained from it is twofold; the one being put into Water swims at the Top, and the other falls to the Bottom. The first is of a pale Colour, and the last yellowish and reddish. Both are transparent, of a very fragrant Scent, and extremely pungent Taste upon the Tongue.

By Distillation from the Bark of the Root, are drawn an Oil, and a volatile Salt or Camphore. The Oil is lighter than Water, transparent, yellowish, and subtile, easily dissipating in the Air, and of a strong, quick, agreeable Scent, between Camphore and Cinnamon. The Camphore is of a fine white Colour, in Sweetness of Smell far excelling common Camphore, highly volatile so as to be easily dissipated, readily taking Fire, and leaving no *Fæces* after Deflagration.

The Oil distilled from the Leaves sinks in Water, is at first foul, but becomes in Time yellowish and transparent, of a sweetish, pungent, aromattick Taste, with a gentle Smell of Cinnamon, in some Measure partaking of the Smell of Cloves.

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The Fruit affords a twofold Substance (*viz.*) by Distillation; an essential Oil like that of Juniper mixed with a little Cinnamon and Cloves; and by Decoction, a thick Kind of Fat, resembling Suet both in Consistence and Colour, and of a fragrant Smell. This is used by the Natives of *Ceylon* in Unguents; and Candles are made of it, which no Person is permitted to burn but their King. Moreover, in the Trunks of old Trees may be found some resinous Knots, smelling pretty much like the *Oleum Rhodii*.

Cinnamon abounds with an essential Salt both acid and urinous, approaching to a *Sal ammoniac*, and mixed with an essential aromattick Oil, to which its Energy seems to be chiefly owing. The Moderns allow the same Virtues to our Cinnamon, which the Ancients attributed to their Cinnamon and Cassia (*viz.*) that it heats, dries, opens, dissolves, is alexipharmack, resists Poisons and Malignity of the Humours, removes Putrefaction, promotes the menstrual Discharges, forwards Delivery, strengthens the Bowels, cheers the Spirits, helps Concoction, and expels Wind. The Use of it is very common in Weakness, Swooning, malignant Fevers, cold Affections of the Head, Breast, Stomach and Womb, and in colick Pains. It is serviceable also in Suppression of the *Menses* and difficult Labour. The Dose in Substance is from ℥j. to ʒss. or ʒj. and in Infusion from ʒss. to ʒij.

A spirituous Water is drawn from Cinnamon of the same Virtues with the Bark in Substance. Thus.

Take of Cinnamon bruised ℥j. white Wine and the distilled Water of Baum ā ℥iij. Having been macerated together for 24 Hours, draw off the Liquor with a strong Fire from an Alembick with a Refrigeratory. The first

three Pints only are to be put by for Use, the Water which comes over afterwards being too weak.

This Water is foul and whitish, or milky, as it were, from a Mixture of the oily Parts of the Cinnamon with the Water. Some require a Water of Cinnamon hordeated, that is, a Water drawn from a Decoction of Barley, wherein a certain Quantity of Cinnamon has been macerated. But the Particles of Barley are entirely uselefs in this *Menstruum*, since they rather hinder the Evolution of the Salino-oleous Parts of the Cinnamon, than promote it; neither are they capable of rising in Distillation. It is therefore better, if we would obtund the Force of the Cinnamon, to give the Water above described in a Decoction or Cream of Barley, or an Emulsion.

A Syrup of Cinnamon is prepared as follows.

Take of the spirituous Water of Cinnamon ℥j. Cinnamon bruised ℥ij. Let them stand in Digestion 24 Hours, and decant the Tincture. Then dissolve ℥ij. of fine white Sugar in Baum-Water, and boil to the Consistence of a solid Electuary; upon which pour the Tincture gradually and make a Syrup *f. a.* The Dose is ℥j.

The essential Oil is obtained in the same Manner as other essential Oils; namely, by macerating the Cinnamon in a large Quantity of Water, and drawing it off with a Fire sufficiently strong. The Water comes over foul and milky, but after some Time becomes limpid from a Separation of the Oil, whereof the greater Part subsides to the Bottom, and the other rises to the Top. The yellowish
Oil

Oil which subsides is separated from the Water and put by for Use. This Oil being extremely pungent and hot is seldom prescribed alone, but joined with Sugar in the Form of an *Elaeosaccharum*, to be dissolved in a proper Vehicle. It is given from gut. j. to iij. having the same Virtues with Cinnamon, but in a greater Degree of Strength. It is in great Esteem for abating the Violence of Catharticks, and on this Account is found in most purging Pills and Extracts; and also as it gives to such Compositions an agreeable Scent. It eases the Tooth-ache being dropped upon Cotton and put into the Hollow of the Tooth; for by its caustick Acrimony it burns the Nerve and destroys its Sensation.

Take of Cinnamon in Powder ʒss. of fine Filings of Iron ʒiiij. white Sugar ʒss. Mix and make a Powder. The Dose is ʒj. in the Green-sickness.

Take of powdered Cinnamon ʒss. Extract of Saffron gr. vj. the chalybeated Flowers of Sal Ammoniac ʒss. Mix, and with q. f. of the Conserve of Orange-Flowers make a Bolus to be given in a Suppression of the *Menses*.

Take of Cinnamon ʒj. Saffron powdered ʒss. Syrup of Kermes q. f. Mix and make a Bolus for difficult Labour.

Take of the Powder of Cinnamon ʒx. Ginger and Cloves ā ʒj. Galangal, Mace, Nutmeg and the yellow Peel of Citron ā ʒij. and with ℥j. of Sugar dissolved and boiled in Rose-Water make Tablets f. a. They are agreeable to take, and may be used to the Quantity of ʒij. in the Morning fasting, and after Meals, to help Concoction, discuss Wind and strengthen the Stomach.

Take of Cinnamon-Water ℥fs. Mugwort and Orange-Flower Water ā ℥j. the Confection of Kermes ℥fs. Make a Mixture to be used in difficult Labour.

Take of Cinnamon-Water ℥fs. Baum and Carduus-Water ā ℥iij. Syrup of Cinnamon ℥j. Make a Julep to be given by Spoonfuls in Loss of Strength, Swooning, and malignant Fevers.

Take of Cinnamon-Water ℥ij. Syrup of Lemons ℥j. Salt of Wormwood ℥ij. Make a Mixture and let a Spoonful be taken now and then to appease a *Nausea*, Vomiting, and Anxiety about the Heart in malignant Fevers.

Take of the Oil of Cinnamon gut. iij. white Loaf-Sugar ℥iij. Make an *Elaeosaccharum* to be dissolved in strong Wine and drank in difficult Labour.

It is to be observed, that an immoderate and unseasonable Use of Aromaticks, like this, disposes the Stomach to Inflammation, shrivels its Fibres, and constricts and shuts up the Orifices of its Glands. Whence, from a Deficiency of the gastrick Juice, with a spasmodick and inflammatory Tension of the Stomach, a depraved Concoction necessarily follows; the Food produces Labour and Anxiety in the Stomach, and is propelled into the Intestines with great Difficulty; and this Mischief at length is communicated over the whole Body to the Prejudice of all its Functions. Moreover, by Aromaticks too freely given the Juices are rendered acrid, thick, and languid in their circulatory Motion, and so the due Secretion of them being hindered, are brought on Obstructions of the Liver, Kidneys and other Bowels; or Inflammations, Cachexies, Atrophies, Dropsies, melancholick

lancholick and hypochondriack Affections, with other Diseases of the like Nature. Therefore, to repeat a Caution which we have before inculcated, in giving these warm Stomachicks, we ought to consider well of their Agreeableness to the State and Constitution of the Patient; and likewise to take Care not to persist too long in using them.

ARTIC. II. Of white CANEL.

Canella alba et Cortex Winteranus spurius, Off. This is the Bark of a Tree rolled up into oblong Tubes like Cinnamon, but is thicker, and of a whitish Colour both on the outside and within, of a fragrant Smell, and hot, biting, aromattick Taste, resembling as it were a compound Taste of Cinnamon, Ginger and Cloves. It seems to have been unknown before the Discovery of *America*, and consequently was a Stranger to the *Greeks* and *Arabians*. Some distinguish two Sorts of it; but they differ only in the Bulk, Length and Thickness of the Tubes, both Sorts being the Bark of the same Tree; one the Bark of the Trunk, and the other of the Branches.

The Tree is called *Canella alba quorumdam, J. B. Canella Cubana Jonston: Arbor jucaci Nieremberg: Cassia lignea Jamaicensis, cortice acri, candicante, Plukn. Phyt. Arbor baccifera, laurifolia, aromatica, fructu viridi calyculato, racemoso, Sloane Philos. Transf. No. 192. et Hist. Jamaic. Vol. 2. p. 87. Catesb. Hist. natur. Vol. 2. p. 50. Fig. 50. Winzterania, Lin. Hort. Cliff. 488.* It grows in the moist and woody Parts of *Jamaica* and other *American* Islands. The Bark is stripped from the Trunk and Branches, and being cleared of the exterior Coat, is put in the Shade to dry, and then laid up under the Name of *Canella alba*, or *Cortex Winteranus*, with which
it

it has been confounded by some Authors, though their Difference is manifest; for the true *Cortex Winteranus* is thicker, as also of a darker Colour, somewhat resembling Cinnamon, and of a more acrid hot Taste, like Pepper or Ginger.

The Inhabitants of those Countries where white Canel is produced, make use of it in Diét and for seasoning Meat, instead of Cloves and Pepper. It abounds with an essential aromattick Oil, which is obtained by Distillation after the Bark has been macerated in Water. This Oil is of a yellowish Colour and heavier than Water. It is sometimes used to adulterate Oil of Cloves, having much the same Smell.

As to the Virtues of this Bark, it is not only mixed with Food as a Stomachick, but is also commended against the Scurvy. It discusses Flatulencies, cures catarrhus Affections, and is very beneficial in Palsies. The Dose in Substance is from ℥ss. to ʒj. and to ʒij. in Infusion. The true *Winter's Bark* being seldom to be met with in the Shops, this is commonly substituted for it. It is to be observed, that in bilious and hot Temperaments this Medicine is hurtful.

ARTIC. III. Of the PERUVIAN BARK, and CASCARIL.

Quinquina, Kina Kina, Cortex Peruvianus, Cortex febrifugus, Off. This inestimable Drug is the dry Bark of a Tree, two or three Lines thick, rough on the outside, of a brown Colour, sometimes covered with a whitish Moss, smooth within, somewhat resinous, and of a reddish Colour, or like the Rust of Iron; having an intense bitter and gentle astringent Taste, with something agreeably aromattick. It is sometimes brought to us in thicker

thicker Pieces, three or four Inches long or more, an Inch broad, and not convoluted; which are got from the Trunk of the Tree. Sometimes in Quills a little convoluted, not so thick as the former, externally of a brown Colour, slightly marked with circular Fiffures, covered with Mofs, and of a reddish Colour within; which are taken from the slender Branches. Sometimes also it comes to us cut into small Pieces, of a whitish Colour on the outside, and yellowish within. This is said to be the Bark of the Root, and is in the greatest Esteem with the *Spaniards*.

It ought to be chosen of a brown or reddish Colour, resembling the Colour of Cinnamon, of an aromattick bitter Taste, not unpleasant, of a Kind of mouldy Smell, as it were, gently aromattick, and friable under the Teeth. When it is viscid and glutinous, woody, decayed with Age, insipid, or adulterated with other Barks which have been dipt in the Juice of *Aloes*, it ought to be rejected.

The Tree producing the *Peruvian* Bark is called *Arbor febrifuga Peruviana*, *China Chinæ*, *Quinquina et Ganepaside*, *dicta*, *Raii Hist.* and by the *Spaniards*, *Palo de Calenturas*. It grows spontaneously in *Peru*, particularly upon the Hills near *Loxa* or *Loja*, at the Distance of about sixty Leagues from *Quito*.

The antifebrile Virtue of this Bark, as we have already related *, was first discovered by meer Chance,

* The Account we have of its first Discovery is this. Some Trees which bear it being thrown by Wind, or some other Accident, into a Pool of Water, lay there till the Water acquired so bitter a Taste that no Person could drink it. However, one of the neighbouring Inhabitants being seized with a violent Fit of a Fever, and finding no other Water to quench his Thirst,

Chance, and had been known to the *Indians* in *America* long before the Arrival of *Columbus*: But from an implacable Hatred which they had conceived against the *Spaniards*, it was kept a great Secret till the Year 1640. At which Time a certain *Indian* having received some Favours from a *Spaniard*, then Governor of *Loxa*, he imparted to him the Knowledge of this invaluable Specifick by Way of Gratuity. It happened not long after in *Lima*, the *Metropolis* of *Peru*, that the Wife of *Count del Cinchon*, at that Time Vice-Roy of *Peru*, was seized with a violent intermitting Fever, such as is commonly epidemical in that Country. The Governor hearing of this, informed the Count by Letter that he knew a Remedy, which, he could absolutely promise, would speedily cure his Countess. She finding no Relief from other Medicines, readily consented to take it, and to the Surprise of all grew well in a very short Time. Hence it became famous all over the *Spanish* Dominions in *America*, under the Name of the *Countess's Powder*: And the Vice-Roy returning soon after to *Spain*, a Rumour was immediately spread abroad there concerning this new Febrifuge; which was found, after frequent Trials, always to answer the Expectations of the Sick. About the Year 1649, the Provincial of the *Jesuits* in *America*, being recalled to a general Assembly of his Order at *Rome*,

Thirst, was forced to drink of this; by which he was perfectly cured both of his Fever and Thirst. Upon this, he related the Experiment he had made to others, and prevailed upon some of his Friends, who were ill of Fevers, to make use of the same Remedy; which accordingly they did, and with equal Success. But the Trees after some Time becoming rotten, and the Water losing its bitter Taste and its Virtue, they made a diligent Search after the Cause of this Bitterness, and antifebrile Quality in the Water; and at length traced it up to the Bark of these Trees. *Introd. ad Mat. Med.* p. 48,

carried along with him a large Quantity of this Bark, which he distributed to a great Number of his Society who had repaired thither from all Parts of the World. When these Jesuits were again dispersed to their respective Stations, they made use of it with so great Success, against all Kinds of intermitting Fevers, that both Physicians and all other People were astonished; and hence it was called *Pulvis Patrum*, and in *England* the *Jesuits Powder*. Some also gave it the Name of *Cardinal de Lugo's Powder*, because that charitable Prelate bought up large Quantities of it, at a great Expence, for the Use of the Religious and Poor of *Rome*.

But whilst the Fame of this Febrifuge was spread throughout *Europe*, many Physicians were in much Doubt concerning it. These being still blinded with the old Notions of sensible Humours and Qualities, and observing that this Remedy cured the worst Fevers very soon and without any plentiful Evacuation, suspected that it detained the morbid Ferment in the Body, and that it might therefore give Rise to some untowardly Symptoms: So that whatever happened amiss, never failed to be ascribed to the Medicine; although it was owing, in Reality, to a too sparing Use of it, and to the Remains of the primary Disease, which was not entirely conquered. For at that Time they gave no more than one or two Drachms to cure an intermitting Fever, whereas Experience has since taught us, that to eradicate the Disease a larger Quantity is required. Others, again, observed that it only put by a few Fits without totally subduing the Fever, the Patient being generally subject to a Relapse. From these Suspicions, and also because it was then sold at an exorbitant Price, it fell by Degrees into Disuse; till one *Robert Tabor*, an *English* Knight,

Knight, brought it into Vogue again in *France*, under the Name of the *English Remedy*. This Gentleman was no less bold in his Practice, than successful; for he did not confine himself to Scruples and Drachms, but ventured upon it even to Ounces and Pounds; always concealing, with the greatest Care, the Medicine and the Method of preparing it. Hence he gained great Reputation both to himself and his Remedy: Whereupon *Lewis XIV.* purchased the Secret of him for a large Sum of Money, and made it publick.

In a chymical *Analysis*, four Ounces and a Half of the *Peruvian Bark* reduced to a gross Powder, yielded one Ounce, four Drachms and a Half of acid Phlegm; the first Portions of which were merely acid, but the last were not only intensely acid, but withal discovered some Marks of an alkaline urinous Salt, as well by turning the blue Tincture of Turnsole red, as by making the Solution of corrosive Sublimate foul and milky, and precipitating a white Powder to the Bottom of the Vessel. Afterwards came over into the Receiver one Drachm and sixty-eight Grains of thick Oil, something like Hog's Lard. The Weight of the *Residuum* in the Retort was one Ounce, two Drachms and eight Grains; which, after it had been calcined to Whiteness, weighed one Drachm and fifteen Grains: And from this, by a Lixiviation, was extracted half a Drachm of fixt Salt. Hence it appears that this Bark contains a large Quantity of acid Salt and thick Oil, and but very little urinous Salt and Earth. For it is to be observed, that the Quantity of Oil which was contained in this Bark, must necessarily be more than about two Drachms; since the Diminution of the *Residuum* in Calcination from one Ounce, two Drachms and eight Grains, to one Drachm and fifteen Grains, is chiefly

chiefly to be accounted for from the Exhalation of the Oil, the Particles of Earth and Salt, which were carried off therewith, bearing but a small Proportion to it. This Mixture of acid Salt and Oil constitutes a Resin, which may be obtained, by the Assistance of a proper *Menstruum*, in a Quantity almost equal to a fourth Part of the Bark: But the Proportion of Gum is vastly less. To this we may add, that an Infusion of the Bark turns blue Paper reddish: Whence it is evident, that among its oily Parts it greatly abounds with acid Salts, and that its Energy is, in a great Measure, owing to them.

The *Peruvian* Bark is reckoned, with other Bitters, in the Number of Stomachicks. It strengthens the Stomach, raises the Appetite, helps Digestion, discusses Wind, kills Worms, and provokes Urine and the *Menses*: But it is chiefly to be extolled on Account of its Virtue in conquering intermitting Fevers; for provided it be properly administered, it cures them with Safety and Speed, and without creating Disgust in the Patient. The Dose in Powder is from $\mathfrak{z}\text{ss}$. to $\mathfrak{z}\text{ij}$. either mixed with some Liquor, or made into a Bolus with Syrup. An Infusion thereof, in the Proportion of $\mathfrak{z}\text{j}$. to $\mathfrak{lb}\text{j}$. of red Wine, may be given to $\mathfrak{z}\text{vj}$. as may likewise a Decoction of it in Water, allowing $\mathfrak{z}\text{j}$. of the Bark to $\mathfrak{lb}\text{iss}$. of Water, and boiling till the third Part is evaporated. Sometimes, in Compliance with the Loathing of the Sick, this Decoction is ordered by Way of Clyster, to the Quantity of $\mathfrak{lb}\text{j}$. for grown up Persons, and to $\mathfrak{lb}\text{ss}$. for Children. But, in Regard to these several Ways of prescribing it, we must take Notice that it is more efficacious in Powder than in Decoction or Infusion; and that the Infusion in Wine is much better, than an Infusion or Decoction in an aqueous *Men-*

struum; and, lastly, that these Infusions and Decoctions are stronger or weaker in Proportion to their Foulness or Clearness, or as they are more or less loaded with the fine Particles of the Medicine. Moreover we must observe, notwithstanding some are of a contrary Opinion, that Clysters made of the Bark ought to be strained; since a large Quantity of the Powder, suppose four or five Ounces a Day, being thrown into the Intestines, produces Costiveness, Obstructions of the Bowels, and Inflammations, which sometimes terminate in Imposthumes.

In whatever Manner this Febrifuge is given, it ought to be repeated every third or fourth Hour; but supposing always that due Preparatives have been used. For in simple intermitting Fevers, as a tertian or quartan, we are to examine, in the first Place, if there be any Indication either to open a Vein or to purge; and accordingly, on the Days of Intermission, the Patient must be prepared by Blood-letting or purging. Blood-letting, in particular, ought to be performed with a liberal Hand, and to be repeated according to Necessity, before the Bark is given; for then it exerts its Efficacy sooner and with greater Safety. Indeed, if the Blood-Vessels be not sufficiently evacuated, we shall find it extremely difficult to subdue a stubborn Fever with the Bark. Perhaps the Disease, after a tedious Repetition of the Febrifuge, may seem at length to be destroyed; yet the Patient recovers no Strength, and soon after suffers a Relapse, unless more Blood be drawn away; which being done during the Use of the Medicine, the Fever is immediately extinguished, and the Strength of the Patient returns in a short Time. Reason itself points out this Method of Practice: For the Bark expands and rarefies the Blood, as we may observe
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in all Persons who daily take it, whose Pulse is full and high, though soft. It is therefore evident that the Blood stands in need of a larger Space; which is procured to it by opening a Vein. As to purging it is not so necessary, except the first Passages are very full; because the Bark, for a few Days at the Beginning, frequently operates as a Cathartick.

Therefore in a tertian or quartan Fever, after the Patient has been prepared by Blood-letting, and likewise by Purging, if requisite, let him take the first Dose of the Bark immediately after a Paroxysm; repeating it afterwards every fourth Hour, that is, about five or six Times in the Space of a natural Day. He must eat some Food of easy Digestion, and good Nourishment, two Hours after the Medicine. When the Fits have entirely ceased, let him take only four Doses a Day for eight Days; afterwards three Doses for a Week longer; and, lastly, two Doses for eight Days more. However, in this a due Regard must be had to the Disease, the Season, and the Age of the Patient. For a Fever which is attended with bad Symptoms and long Paroxysms, which invades in Autumn, or when the sick Person is old or valetudinary, requires a longer Use of the Bark, than when the Paroxysms are short without any bad Symptom, or when it happens in the Beginning of the Spring, and to younger People. A proper Diet is to be observed, not only during the Use of the Bark, but for a long Time after.

Moreover, no Purge ought to be given for several Weeks, or rather Months, after the Cure, but upon some very pressing Indication; and then a Dose of the Febrifuge must be taken the same Day with the Purge, and be twice or thrice repeated for some Days following, lest the Fever should

be recalled by the Evacuation. But a Relapse is not only occasioned by purging, but very frequently by the least Error in Point of Diet, by a slight Cold, or other trivial Causes. Wherefore, by Way of Prevention in bad Fevers which have been cured by the Bark, it is adviseable to order a Repetition of the same twice or thrice, at the Distance of eight or ten Days; especially if the Winter be coming on, which Season, on Account of the uncertain *Intemperies* of the Air, is very much to be feared. And this is a sure Way to prevent a Return in the most stubborn intermitting Fevers.

In compound intermitting Fevers, as a double tertian, a triple quartan, or a quotidian, (whether there be a perfect Intermission or only a Remission of the febrile Effervescence) after letting Blood, and purging either upwards or downwards, we must begin with the Bark; or if the Disease be very violent, we must give it immediately after opening a Vein, without further Preparation; and notwithstanding this, we may order Blood-letting to be repeated as often as the Case requires. For the previous Use of the Bark is so far from rendering it improper to take away Blood, that the Patient bears the Loss of it better, and sooner receives Benefit from the Medicine. If an Evacuation by Stool be necessary, and the Violence of the Fever will not allow a sufficient Time for it, a Cathartick may be given with the Bark, after a Vein has been opened. But here the Febrifuge ought to be repeated every third Hour both Day and Night till the Fever returns no more, the Patient taking his Food about an Hour after the Medicine. For eight Days following, six Doses must be given a Day, one every third Hour; afterwards for a Week, five a Day, one every fourth Hour; for
a Week

a Week longer, only four a Day; then three, and at last two. The Diet ought to be thin, and no solid Food should be ventured upon before the Fever is quite extinguished, and the Patient begins to be hungry.

The *Peruvian* Bark, though continued a long Time, seldom cures a Fever before some considerable Evacuation is brought about; which generally happens either by Stool or Urine: Nor is there a more certain Sign that the Disease is thoroughly cured than this Evacuation, whereby the febrile Venom is drawn off. It falls out sometimes sooner, sometimes later; but we cannot be well assured of the Patient's Recovery before its Appearance. We must confess indeed, that some Persons have been restored to perfect Health without any considerable Evacuation that was sensible; but in these we may conjecture, that an Increase of insensible Perspiration supplied its Place. If this critical Discharge be not made, though the Fever disappears, yet it seems to be rather suppressed than radically destroyed. The Patient remains weak and languid, and without Appetite, till the Fever returns, or a Dropsy, or some other cachectick Affection in its stead; or perhaps an Abscess is formed in some Part of the Body. It is, therefore, not without Reason that Physicians, according to the Disposition of the morbid Humour, sometimes join proper Catharticks, or Diureticks with the Bark; or sometimes Diaphoreticks or Sudorificks, in order to throw off the noxious Humour, already subdued by the Febrifuge, by those Passages to which it discovers the greatest Tendency. For this Humour in intermitting Fevers, especially tertians, is more easily evacuated by Stool or Urine; but in malignant Fevers, where it tends towards the Pores of the Skin, it is oftentimes more successfully cast

off by Perspiration or Sweat. However the Physician, to proceed with Judgment in this Matter, ought to have great Regard to the epidemical Constitution of the Year, and the peculiar Habit of the sick Person.

Since an intermitting Fever puts on different Disguises, or as the learned Doctor *Morton* expresses it, is of a *Proteiform Genius*, frequently counterfeiting many other acute Diseases; since this, I say, is its various Nature, although the *Peruvian Bark* be the chief and almost only Remedy to be depended on, yet the grievous Symptoms which accompany the Disease, or under which it is concealed, require some other suitable Medicines to be joined with the Febrifuge; such are Cephalicks, Narcoticks, Pectorals, Stomachicks, Aperients, Uterines, or the like. A Physician, therefore, ought to exert great Discernment to distinguish these counterfeit Symptoms, to the End that he may discover the proper Method of Cure. Sometimes, for Instance, an intermitting Fever lies concealed under the Appearance of an extreme Chilness, incessant Vomiting, a painful *Diarrhœa*, *Cholera morbus*, or Colick in the Stomach, a periodical *Hemicrania*, pricking Pain in the Side, Pleurisy, Peripneumony, Rheumatism, or universal Spasm, and sometimes Swooning, or even an Apoplexy; whereof Examples may be seen in the Observations of the illustrious *Morton*. Now, as it is not always easy to discern these false Symptoms, the Physician ought to consider the epidemical Constitution of the Year, and likewise the State of his Patient, who having been afflicted perhaps before by an intermitting Fever, which had been only laid asleep, as it were, suffers a Relapse to his former Distemper. These Signs, though not absolutely infallible, may nevertheless induce the Physician to observe attentively

attentively all the Symptoms and Variations of the Disease; and then the periodical Return of the worser Symptoms at stated Times will afford a very certain Proof that it is a Fever in Disguise. It ought also to be considered whether the Fever, which is joined with another Disease, be only a Symptom of that Disease, or be an idiopathick Disease itself and complicated with the other: For if it be a Symptom of the other Disease, it will be in vain to attempt to remove it without curing the idiopathick Disease at the same Time, by mixing the Bark with such Remedies as are indicated. But in a complicated Case, the Cure of both Diseases may either be attempted together, or the Fever may be cured by the Bark though the other Disease still remains.

It sometimes happens, when the Bark has not been given in due Quantities, that the febrile Matter is so far weakened that it no longer produces the usual Paroxysm or Exacerbation, but excites only some Symptoms; and these, though not so violent, yet as they continue long, are no less troublesome to the Sick; such are Loss of Strength and Appetite, a *Nausea*, Anxiety in the Region of the Breast, Oppression of the Stomach, Inflation and Gripings of the Belly, a Cough, Pains of the Head, Night-Sweats, a Dropsy, cachectick and rheumatick Affections, or others of the like Nature. It is customary with the Vulgar to ascribe all these to the Bark; though very unjustly, since the too sparing Use of it ought rather to be blamed, or else its Badness, it being either not genuine, or by some Means impaired in its Virtues. For if the best Bark be selected and given in due Quantities, these Disorders will disappear in a little Time.

In inflammatory, putrid, malignant, and pestilential Fevers, the Efficacy of the Bark seems insufficient.

sufficient. And here the Physician's Skill ought to be chiefly employed to bring the Disease to a State wherein it will admit of a Cure by this Remedy. Nevertheless *Morton* advises it in the Measles and Small Pox to be given in the Decline of the Distemper, that is, when the Fever, continuing after the perfect Eruption of the morbid Venom, begins to observe the Type of a continual Remittent. The Faculty of Physick likewise at *Naples* have given out that it is a good Remedy against the Plague, and have ordered it to be used in that Disease. This we are informed of by *Sebastian Badius*, a Physician of *Genoa*, in a Treatise which he published in the Year 1663. intitled *Anastasis Corticis Peruviani*, or the Resurrection of the Peruvian Bark; wherein he answers *Plempius*, a Physician of *Amsterdam*, who had given him an Invitation to the Funeral of the Peruvian Bark, in a Treatise printed in the Year 1655.

The common People have a Notion, that the Bark is improper for Persons whose Lungs are injured, or who are inclinable to a *Phthisis* and Consumption. Nevertheless Experience demonstrates, that it may be given with Success in the putrid remitting or intermitting Fever which follows a Peripneumony or Pleurisy, or which attends an *Empyema* or an Ulceration of the Lungs, or in that into which an inflammatory Fever is often transformed. This Fever arises from putrid and noxious Particles polluting the Blood as it passes through the purulent Parts; whence are occasioned every Day, or every other Day, febrile Exacerbations or Paroxysms. Now, the *Peruvian* Bark suppresses, for some Time at least, these Paroxysms; and further, if it be joined with pectoral, balsamick and deterfive Medicines, the Fever is totally extinguished, the Pus excreted, and the Ulcers are healed.

healed. According to Dr. *Morton*, some phthifical Persons who had been quite given over for lost, have prolonged their Lives by a frequent Use of the Bark mixed with other Medicines, not only for many Months but even Years; and notwithstanding that they continued always infirm and valetudinary, yet being free from the Fever by Virtue of this Drug, they were capable of following their respective Employments.

Therefore the *Peruvian* Bark is deservedly called a febrile Antidote; since it may be given with the greatest Safety in all intermitting, remitting or continual Fevers, to Persons of either Sex and of all Ages, to Infants and Children, to Adults and old People, to Virgins, pregnant Women, and Women in Childbed. Dr. *Morton* assures us, that during the Space of twenty five Years he never observed any bad Consequence proceeding from the Use of it, except a slight Deafness, which always ceased either of its own Accord, as soon as the Disease was cured, or upon omitting the Medicine. And this is daily confirmed by our own Experience.

Take of the best *Peruvian* Bark reduced to an Alcahol ℥j. of the febrifuge Syrup, the Syrup of Lemons, Quinces, Wormwood, red Poppy, Diacodium, compound Succory, or any other, q. f. Mix and make an Electuary of a soft Consistence, whereof ℥ij. are to be taken every third or fourth Hour, drinking after each Dose a Draught of Wine and Water, of a pectoral Ptisan, or any convenient Liquor.

Take of the *Peruvian* Bark powdered ℥ij. strong red Wine ℥ij. Let them be mixed and digested together for two or three Days in a close Vessel, shaking it every now and then.
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The Liquor being separated by Inclination is called the *febrifuge Wine*, and may be given to ℥vj. for a Dose. If it be desired stronger, ℥j. of the Bark powdered very fine may be added to each Glassful, and be drank off with the Wine.

Take of the *Peruvian* Bark ℥j. boil it in ℔ij. of the distilled Water of Viper-Grass or wild Succory to ℥xxviij. The Dose of the strained Liquor is ℥vj. either alone or mixed with the *febrifuge Wine*.

Take of the *Peruvian* Bark bruised ℥j. of the fixt Salt of Nitre ʒss. boil them in ℔ij. of the Water of Pellitory of the Wall to ℥xxviij. The strained Decoction, which is intensely red, may be given to ℥vj. when an Evacuation is to be promoted by Urine.

Take of the *Peruvian* Bark in Powder ℥j. Cream of Tartar ʒss. Powder of Jalap ℥j. or ʒss. of the febrifuge Syrup q. s. to make an Electuary. The Dose is from ʒj. to ʒij. to be repeated as necessary, in Fevers complicated with a Leucophlegmacy or Dropsy.

Take of the Powder of the *Peruvian* Bark and *Hiera picra* ā ʒss. Infuse them in ℔j. of strong Wine, and let them stand in Digestion twenty-four Hours; then strain, and keep the Liquor for Use. Let a Glassful or two be taken in a Fever, when the Humours are to be carried off by Stool.

Take of the *Peruvian* Bark rubbed very fine ʒss. depurated Gum Ammoniac ʒj. Flowers of Benzoine ʒss. Balsam of Capivi ʒij. of the febrifuge Syrup q. s. Make an Electuary. The Dose is ʒiss. in a Fever attended with an Infarction of the Lungs.

Take

Take of the *Peruvian* Bark ℥j. boil it in ℔ij. of Spring-Water or any proper distilled Water to ℥xxxviij. adding towards the End, of the dried Leaves of Ground-Ivy, Bugle, Sanicle, Ladies-Mantle, and Winter-Green ā P. j. In the strained Liquor dissolve ℥ij. of the Syrup of red Poppy, or Coldsfoot, and make an Apozem to be divided into six Doses, one to be given every fourth Hour, in an intermitting, or continual Fever, when attended with a purulent Spitting.

Take of the *Peruvian* Bark powdered extremely fine ℥iv. Venice-Treacle ℥j. the febrifuge Syrup q. f. Make a Bolus to be divided into four Doses, to be taken at the medical Hours, in Fevers attended with malignant Symptoms.

Take of the *Peruvian* Bark in Powder ℥j. Diaphoretick Mineral ℥ij. Sal Ammoniac purified ℥j. Syrup of Kermes q. f. Make an Electuary, which may be given from ℥iss. to ℥ij. to provoke a *Diaphoresis*.

Take of the *Peruvian* Bark reduced to an impalpable Powder ℥j. of the martiated Flowers of Sal Ammoniac ℥j. of the febrifuge Syrup q. f. Mix them into an Electuary, which may be given from ℥j. to ℥ij. four Times a Day in the chlorotick Fever of Virgins, or in other cachectick and stubborn Fevers.

Take of the *Peruvian* Bark ℥j. of the aperient Saffron of Iron ℥iss. compound Powder of *Arum* ℥iij. the febrifuge Syrup q. f. Mix and make an Electuary. The Dose is from ℥j. to ℥ij. three or four Times a Day, in a cachectick Fever, Suppression of the *Menses* and Obstructions of the Bowels.

Take of the Powder of the *Peruvian* Bark ℥j. *Diascordium* ℥ij. the febrifuge Syrup q. f. Make

Make an Electuary, to be given in the same Dose as the former, in Fevers attended with a Looseness, Gripings of the Belly, and Vomiting.

The Syrup, Tincture and Extract of the *Peruvian* Bark are prepared thus.

The febrifuge Syrup.

Take of the *Peruvian* Bark in Powder ℥ij. and infuse them in ℥ij. of strong red Wine. Let them stand in Digestion together for two or three Days, from Time to Time shaking the Vessel. To the Liquor separated by Inclination add ℥ij. of fresh Bark, and digest again for two or three Days: Then filter the Infusion several Times till it becomes clear. With this make a Syrup, by mixing it with ℥iv. of white Sugar dissolved in Viper-Grass Water and boiled to a solid Electuary. The Dose is from ℥j. to ℥ij. and is a very convenient Form for Children, being not unpleasant to take.

The Tincture.

Take of the *Peruvian* Bark ℥j. French Brandy ℥viii. Let them stand to digest in a close Vessel for three Days, now and then shaking them about, and then separate the Tincture by Inclination. The Dose is a Spoonful several Times a Day in a Draught of Wine.

The Extract.

Take of the *Peruvian* Bark ℥j. rectified Spirit of Wine ℥ij. Let them stand together in Digestion in a gentle Heat, shaking them often, till the Tincture acquires an intense red Colour.

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Then separate the Tincture by Expression, and pour upon the *Residuum* ſbiv. of ſtrong Wine, and digeſt in a Sand-Heat for twenty four Hours. Strain again by Expression, and evaporate both Tinctures together in a Sand-Heat to the Conſiſtence of Honey. To this add ꝑij. of the Syrup of Kermes, and mixing them well, evaporate to the Conſiſtence of a ſolid Extract.

As to the Manner in which this Bark exerts its Action, the common Opinion is, that the Cauſe of an intermitting Fever is a coagulating acid Salt, which ſtimulating the nervous Membranes gives Riſe to all the febrile Symptoms; and that the *Peruvian* Bark, abounding with an alkaline Salt, abſorbs this Acid, and deſtroys its bad Effects, by diſſolving the inſpiſſated and coagulated Humours. But this *Hypotheſis* is altogether repugnant to Experience. For, if the Fever were owing to an Acid, it would thence follow that Alkalies, whether fixt or volatile, ſaline or terreſtrial, would be much better and more efficacious Abſorbents of that Acid; and that Acids, on the other Hand, would increaſe the Fever. But the clear contrary falls out: For Alkalies are vaſtly inferior to Acids in the Cure of Fevers. Nay, even the ſtronger Alkalies, ſuch as Salt of Tartar or the volatile Salt of Hartſhorn, or the terreſtrial ones, as Crabs Eyes, &c. ſeldom abate the Fever; whereas it is very frequently appeaſed by a few Drops of the Spirit of Vitriol, Sulphur or Nitre, or by the acid Juices of Sorrel, Lemons, &c. Beſides, the *Peruvian* Bark contains but a very ſmall Portion of alkaline Salt, either fixt or volatile, but, on the contrary, a large Quantity of acid Salt and Oil. So that it ſeems ſomewhat abſurd to aſcribe its Vir-
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tue to a few Grains of an Alkali, which are involved and loaded with an acid Sulphur and Earth.

Some in Opposition alledge the Bitterness of the Bark, supposing all bitter Substances to be of the alkaline Tribe. But herein they are mistaken. For, by the Help of Chymistry, they may learn that Bitters are not to be ranked among Alkalies; because, in a Resolution of them into their Principles, a large Quantity either of an acid or neutral Salt is obtained: And those artificial Compounds which are indued with the most intense Bitterness, such as the *Crystals of Silver* and the *bitter cathartick Salt*, contain no Portion of an Alkali, but are constituted of the stronger Acids. To attribute, therefore, the Cause of an intermitting Fever and its Symptoms to an acid Juice, and the Virtue of curing it in the Bark to an alkaline Salt, is manifestly erroneous.

The Author who best has handled this Subject is *Richard Morton*, a learned *English* Physician, and a careful Observer of Nature, in his *Treatise on Fevers*. He judges the Cause of Fevers to be some venomous or deleterious Particles contrary to the Principle of Life or animal Spirits, which, destroying their expansive Faculty, necessarily extinguish the vital Flame; and that the *Peruvian Bark*, after the Manner of Antidotes, subdues this febrile Virulency, and obliterates the deleterious Character which is impressed upon the Spirits. But this *Hypothesis* supposes the Existence of animal Spirits, which many Anatomists, and even some of the most skilful, have called in question. Besides, he no where explains the Manner in which the Febrifuge acts upon the Nerves, imagining such an Inquiry entirely useless; since it would be impossible, in his Opinion, to determine any Thing certain in a Matter so obscure. Nevertheless,

less, if we attend to the evident Causes of intermitting, or continual Fevers, and their Symptoms, and likewise to what happens to the Patient after taking the Bark, we shall be enabled to attain some Notions, both of the Nature of the Fevers, and of the Manner in which the Medicine operates: And though these Notions as yet may be conjectural, they seem, however, to come very near the Truth.

The efficient or proximate Cause then of intermitting Fevers is an excrementitious Juice offensive to the Nerves, wherewith the Blood is overstocked by Reason of the Suppression of some sensible or insensible Evacuation, which has been occasioned by an Abuse or Depravation of the six Non-naturals; and among these a cold and moist *Intemperies* of the Air may be reckoned in the first Place, being more generally the external or remote Cause of such Fevers. The Nature of this Juice seems to approach very near to that of an alkaline urinous Salt, since almost all excrementitious Humours abound with a Salt of that Kind. Wherefore when this Juice is redundant, a large and superfluous Quantity of that Salt must be collected in the Blood. And indeed a chymical Analysis of the Blood of Persons in Fevers, evinces the Truth of what we have here advanced; for a larger Quantity of an alkaline urinous Salt is obtained thence, than from the Blood of Persons in Health. However, the noxious Energy of this Humour is not to be imputed to the Quantity of acrid Salts alone, but likewise to certain bilious or adust sulphureous Particles, which increase or weaken it in Proportion to their Mixture with the Salts.

Now, to discover the Force of this salino-oleous Humour, the only apparent Method is from the Effects it produces in the Body. For instance,
being

being separated from the Blood, it falls primarily and immediately upon the nervous System; And hence arise those Symptoms which are perceived in the Beginning of the Fever; to wit, a Coldness, Languor, Fainting, Inquietude, Shivering, Stiffness, Pandiculation, Giddiness, Spasmodick Pains, a weak Pulse, with Heat, Thirst, and Dryness of the Tongue. In the next Place, its Force is exerted secondarily and mediately upon the Humours; for as much as the whole Oeconomy of the Blood is regulated by the due Oscillations of the nervous Fibres. The oscillatory Motion of the Nerves being interrupted, there follows a retarded Motion of the Blood and Juices, and the ordinary Secretions are suppressed. But where the Strength of Constitution is sufficient for sustaining this *Impetus*, the Viscidity, and slow Progress, of the Blood in Vessels occasion the whole nervous System to be immediately moved and shook, and to recover its Oscillations with so much Vehemence, that in a short Time an universal Heat is diffused over the Body, the retarded Circulation of the Blood is restored, and the Lentor, which had been contracted by its Slowness, is dissolved. By these Succussions also the noxious Humour, which is impacted upon the Nerves, is repelled, and cast out of the Habit in Sweat, or by some other Excretion either sensible or insensible; or being deposited on some Part of the Body, as the Lips, Nostrils, &c. produces different Sorts of Eruptions, Pustules, red or purple Spots, or Buboes in the Groin and Armpits; and in other Parts Carbuncles, Boils, Tumours, Abscesses, and various Kinds of Ulcers.

The *Peruvian* Bark does not extinguish malignant and pestilential Fevers, or at least not without great Difficulty. But in intermitting and continual Fevers, provided it be properly given, it cures with

Speed

Speed and Safety. And this Virtue is owing, partly to its styptick Bitterness, and partly to the acid Salts which it contains.

Acid Medicines frequently remove Fevers, by obtunding the Causticity of the alkaline or febrile Venom. But the Disease sometimes returns, because the due Excretions being not perfectly restored, the same remote Cause is still subsisting.

Bitter Medicines also sometimes subdue Fevers; though not so much by breaking the caustick Salt of the febrile Humour, as by removing the Cause of the Fever. We have said, that the internal antecedent Cause of the Fever is a Suppression of some wonted Excretion, which arises from a Laxness and Flaccidity of the nervous Fibres composing the Emunctories appointed for this Evacuation. Now, bitter Remedies, by their Stypticity, restringe the too lax Fibres, and so re-establish the Excretions, which were either suppressed or diminished.

In the *Peruvian* Bark the Virtues of both these Kinds of Medicines are united: That is to say, by Means of the acid Salt wherewith it abounds, it blunts the acrid, caustick Salts of the febrile Venom; and thus it conquers the Symptoms in a short Time. Afterwards, by a longer Use of it, all the Juices of the Body are imbued with its styptick Bitterness, whereby it constringes and strengthens the Fibres, which a moist Intemperies of the Air, or some other Cause had relaxed; and so it removes the antecedent Cause. However, it is not surprizing that the Fever should often return upon omitting the Use of the Bark too soon, especially in a cold and moist Constitution of the Air, wherein the Fibres are again relaxed by the external Contact of the Air acting continually upon them. If the Use of the Febrifuge be continued for a sufficient

ficient Time, it not only changes the febrile Humour and strengthens the Fibres, but likewise, when the noxious Humour is entirely subdued, expels it out of the Body through some Emunc-tory or other. Thus, when the Bowels have recovered their Tone, they then begin to perform their Functions. The superfluous Juices which loaded them are excreted, either by Stool, or by Urine, or by Sweat, or by insensible Perspiration; so that the Bark often answers the Ends of a Cathartick, a Diuretick, a Sudorifick, or a Diaphoretick. That it is unable to correct the Malignity of pestilential Fevers, or not at least, as we have said, but with great Difficulty, is by Reason that the antecedent Cause of such Fevers is not a Laxness and Flaccidity of the Fibres, as in intermit-tents, but an Erithism or Crispation of them, which the Bark has not a sufficient Efficacy to allay. The Medicines indicated in this Case are the more powerful Cardiacks; as the finer acid Salts in Combi-nation with oily Particles; in order not only to break the Force of the thick and extremely caustick febrile Venom, but also to attenuate its more gross and fixed Salts, and so to volatilize them, as it were, that they may more easily exhale through the cutaneous Pores; and that the solid Fibres, which are shook inordinately and with great Violence, may be gently stimulated, and at length reduced to an equable Vibration. In this Manner the vitiated or envenomed Juices, being subdued and separated from the Blood, will be excreted through the Pores of the Skin, or other Emiffa-ries of the Body; or at least, as it sometimes hap-pens, will be thrown out upon some less noble Part.

[Besides the Properties of the *Peruvian* Bark enumerated above, we have some Accounts in the
Medical

Medical Essays of Edinburgh of its doing Wonders in Gangrenes and Sphacelations, several Persons, who were despaired of, having recovered perfect Health by taking it, when other Remedies had been tried to no Purpose. It is prescribed to ʒss. in a Bolus or Decoction, to be taken every fourth Hour, the mortified Part being rubbed with Oil of Turpentine, or other suitable Antisepticks.

A few Years ago another Bark was brought to *Paris* under the Name of *Kina Kina fœmina*, but the Tree to which it belongs is unknown. It was thicker than the genuine Bark and redder, being much of the same Colour with *Spanish Snuff*, but whiter on the outside. It sometimes cured Fevers; yet as it was vastly inferior in its Efficacy to the true Sort, and because the Merchants had found out the Trick of mixing them, the Importation of it is now prohibited by Law.]

A third Species of the *Peruvian Bark* is called *Kina Kina aromatica*, *Cascarilla*, *Schacarilla*, *Cortex Peruvianus griseus*, *Zagarilla*: *Cortex Eleuterii*, *Joann. Andreae Stisseri*: *China China falsa et Cortex Eleuterii*, *Dale Pharm. Eleutheria*, *Lin. Hort. Cliff.* 486. and in *English* is termed *Cascaril*. It is a Bark convoluted into Tubes, as broad as one's Finger or Thumb, and two, three, or four Inches long; a Line or two thick, outwardly of a whitish ashy Colour, and within like the Rust of Iron; of a bitter aromattick Taste, and very fragrant aromattick Smell, when it is burnt, something like the Smell of Amber. It comes to us from some of the southern Parts of *America*, particularly from *Paraguay*.

The first who made Mention of this Bark was *J. And. Stisserus*, Doctor of Physick and Professor in the University of *Juliers*; who in his *Specimen Actor. laboratorii chymici anno 2do.* published at

Helmstat 1693. relates, that he had some of it given him by a Person of Distinction, at that Time just returned from *England*, who told him that it was then the Custom in *England* to mix it with Tobacco, in order to render it more agreeable for smoking. He likewise tells us, that a while after he procured some of the same Bark from *John de Breyn*, a wealthy Merchant of *Amsterdam* and an ingenious Virtuoso: But all he could learn from him in Regard of its Qualities, was, that being mixed and smoked with Tobacco, it corrected in some Measure the Disagreeableness of its Smell; and that if it were put in too large a Proportion with the Tobacco, it occasioned Drunkenness. Some Years afterwards, the Merchants sold it in the publick Markets in *Brunswick* for the *Peruvian* Bark; and so it became known in *Germany* as a Febrifuge.

The Tree which bears this Bark is hitherto a Stranger to us.

Moreover, *Stifferus* seems to be the first who brought it into Use. He speaks of it thus. "Though the *Cortex Eleuterii* (says he) have no extraordinary antifebrile Virtue, its Use is not therefore to be wholly rejected, since it is replete with resinous and balsamick Particles which are not unfriendly to our Bodies."

He prepared a Tincture of it with Salt of Tartar and Spirit of Wine, which he used with Success in the Stone, Asthma, Consumption, Scurvy, Gout and other Affections, and found by Experience that it possessed a carminative and diuretick Virtue.

He likewise prepared another Tincture with the volatile Salt of Hartshorn and Spirit of Wine, which was nothing inferior to the former, though of a less saturated Colour. He prescribed both these Tinctures to gut. xx. or xxx. to be taken in a Morning

Morning on an empty Stomach, or an Hour before Meals, in warm Tea or Coffee; and Persons afflicted with the Gout, Scurvy, and calculous Affections found Benefit from them.

They who took the Tincture prepared with Salt of Tartar, dropt into Wine or Beer whilst they were at Dinner, or immediatly after, were sensible of a slight Kind of Drunkenness from it, though without any further Inconvenience.

J. Ludovicus Apinus, a Physician of *Herspruch*, greatly extols this Bark, as possessing an antifebrile cardiack and alexipharmack Virtue, in an historical Account, which he published at *Nurenburg* in the Year 1697 of an epidemical Fever which reigned in the Years 1694 and 1695, at *Herspruch*, a Town in the Territory of *Nurenburg*, and in the neighbouring Country, and at length was changed into a spotted Fever.

This epidemical Fever (the Cause whereof he supposes to have been the frequent Rains, which falling in great Abundance in the Month of *August* in the Year 1694 continued to the *December* following) was at first of a milder Disposition, putting on the Type of a tertian intermitting Fever, or a double tertian; and attacked only Children, pregnant Women, and the poorer Sort of People. But in the Beginning of the Year 1695, he tells us this epidemical Contagion increased, and Spots made their Appearance in the Skin. These he ascribes to a Change in the *Temperies* of the Air, and to a chilling Frost which unexpectedly came on; whereby the Perspiration was suddenly obstructed, and the serous Humours inspissated. In the Summer, when the Heat of the Sun was more intense, this spotted Fever seemed to have withdrawn itself, a Dysentery succeeding in its Place. But the Heat being somewhat abated, it shewed

itself again under the same Form; though was not so rife as before: And at length, an eastern Wind blowing in Autumn, it entirely disappeared.

At first he attempted to subdue these intermitting Fevers by giving Alexipharmacks and Sudorificks, having previously purged the Stomach and Intestines both upwards and downwards: But finding the febrile Ferment too stubborn for these Medicines, he mixed with them a proper Quantity of Cascaril, either in Powder or Extract; and discovered, from a successful Experience, that it had a sovereign Efficacy in conquering the Fevers and all their Symptoms. He likewise asserts, that with the same Medicine in larger Doses, he sometimes cured even the spotted Fevers, and procured Relief in the Dysenteries which succeeded them.

He gave ʒj. of Cascaril for a Dose, to be repeated twice, and sometimes thrice or four Times in a Day, and it often provoked a salutary Sweat. He prepared an Extract of it with Water, which he greatly extols for subduing these Fevers, and therefore gave it the Name of *Specificum Lexipyretum* (ἀπὸ τῆς λήγειν τῆς πυρετῆς) from its putting an End to Fevers.

His usual Method of giving his Extract was this. Having ordered a Vomit, when necessary, in the next Place he gave this Bark in Substance; or omitting the Bark, he gave five or six Grains, more or less, of the Extract in Pills, or dissolved in Liquors, repeating it every sixth Hour; or at least, in slighter Cases, Morning and Evening. This Method was seldom continued above three Days, but the Disease was evidently changed for the better. Many were cured by the second or third Dose; or were so far advanced that Nature herself might easily perform the rest, all the grievous and direful Symptoms being removed. Most who

who took the Bark, either in Substance or Extract, sweated plentifully without Inconvenience or Loss of Strength. Besides this manifest Operation by Sweat, the Belly was preserved free and open; and where the Patient was difficult to sweat, it sometimes operated three or four Times by Stool (*cum Euphoria*) without Irksomness, in the same Manner as if a gentle Cathartick had been given. In Women it restored the menstrual Discharges which had been suppressed in the Beginning of the Fever, as also the hæmorrhoidal Flux when it was obstructed.

In *Germany* this Bark is oftentimes used for the true *Peruvian* Bark. The Physicians ascribe to it a resolvent, and somewhat diaphoretick, tonic, and lenient Virtue. These Qualities arise from its constituent Principles; which are not only sulphureous, vaporous and subtile, but also resinous, terrestrial and somewhat astringent, as is demonstrable from its Smell, Taste, and chymical *Analysis*.

The celebrated *Stahl*, in particular, tells us, that he has found this Bark to be an excellent Medicine in Distempers of the Breast, wherein it has a lenient, discutient, and calming Property: That in a Peripneumony, Pleurisy, and especially in a Diarrhœa attending acute Fevers, and a Dysentery, it more effectually mitigates (as he is pleased to speak) than any other Remedy whatsoever.

[In the Beginning he prescribed the Tincture of Cascaril, mixed with that of *Pimpinella alba*, from gutt. xxx. to xl. but in the Increase and State he ordered the compound resolving Powder which follows, to be taken Morning and Evening from ℥ss. to ℥j. and about the Decline he gave the Bark itself reduced to a fine Powder; but the Dose of this was less (*viz.*) from gr. x. to xv. and not so often repeated.

The compound resolving Powder of *Stabl.*

Take of the resolving Powder, made of equal Parts of Shells prepared without Fire, diaphoretick Antimony and depurated Nitre, ζ iss. Extract of Cascaril made with Water ζ fs. Mix and make a Powder.

The Powder of Cascaril with the balsamick Pills is likewise commended in the inflammatory Fever of the Intestines which arises from the Mesentery, or dysenterick Affections.]

J. Junker, a Physician of *Halle*, in his *Conspectus Therapeiæ generalis*, says, that the Virtue of Cascaril, so much extolled by *Apinus* in malignant and contagious Fevers, answers not the Expectations of the Physician. He assures us that he has given it to greater Advantage in intermitting Fevers, which it often cures successfully when mixed with other suitable Medicines; and that herein it is sometimes preferable to the *Peruvian Bark*, which being powerfully astringent, may be prejudicial in many Cases, if not given with Caution.

We shall here take the Liberty to observe in passing, that the spotted Fevers, in which *Apinus* gave this Bark with so much Success, though malignant, were yet of the Tribe of Intermittents, as Tertians, double Tertians, &c. which, we have observed after *Morton*, this Bark specifically cures, provided it be not given too late. Wherefore those malignant Fevers in which it is proper, are carefully to be distinguished from those wherein it is useless. Now we conclude from the Observations of *Apinus* and *Junker*, that it is proper in all intermitting Fevers, whether malignant or not, but rarely in other continual malignant and contagious Fevers.

Junker

Junker moreover asserts, that this Bark is good in all Inflammations, except the Quinsy, where it is somewhat too acrid; that it is of Service also in Pains, hypochondriack and hysteric Spasms, Excess of the menstrual and hæmorrhoidal Fluxes, internal Hæmorrhages, Vomiting of Blood, Flooding, and Spitting of Blood; likewise in an *Hemicrania*, Debility of the Stomach remaining after Diseases, excessive Vomiting, all Fluxes of the Belly and others. And though it does not always produce its Effect immediately, yet by its tonic and gently anodyne Quality it affords some Relief to the Patient, and is safer, at least, and more convenient than Opiates.

In Regard of its Use, we need only be cautious to give it in a convenient Time and proper Method; and not to be over liberal in the Quantity, because it is heating.

When Cascaril is burnt it emits a Fume of a pleasant Smell, though disagreeing with many Persons, being observed to affect the Head.

As to the rest, the *Germans* use it in Powder, Tincture, Extract, and Infusion. The Powder is prescribed in these Affections from gr. vj. to ℥ss. or ℥j. the Infusion from ℥ss. to ℥j. in a proper Liquor, the Tincture prepared with Spirit of Wine, from gut. x. to xx. and the Extract from gr. iij. to vj. or viij.

Michael Albertus, Professor of Physick at *Halle*, in his *Introduction to Physick*, gives the same Account of this Bark. He likewise adds, that it has no such specifick Virtue in curing epidemical Fevers, as *Apinus* ascribes to it; but that it is of some Service, after due Evacuations, in subduing the milder intermitting Fevers.

C H A P. III.

Of Woods.

ARTIC. I. Of RHODIAN WOOD.

LIGNUM *Rhodium*, Off. This is a yellowish pale coloured Wood, with Age turning reddish, thick, hard, solid, tortuous, marked with fat and resinous Knots, and smelling like Roses. It is called *Rhodian Wood* from its native Soil, being formerly brought from the Island of *Rhodes*; and sometimes *Rose-Wood*, from its agreeable Scent of Roses. It is also termed *Cyprian Wood*, because it is got in the Island of *Cyprus*. Some suppose it to be the *Aspalathus* of the Ancients; but it is evident, from the Descriptions which *Dioscorides* and *Galen* have given of *Aspalathus*, that we have no such Drug at this Time in the Shops.

What Tree this Wood is produced from, in *Rhodes* and *Cyprus*, is quite uncertain. *Matthioli* and *Anguillara* will have it to be a *Species* of wild Olive. But *Honorius Belli* contradicts them, affirming it to be the *Cytisus verus* of *Marantia*, that is, the *Cytisus incanus siliquâ falcata*, C. B. which however is improbable, because it has no pleasant Smell.

Paul Herman, in his manuscript Treatise, tells us it is the Root of a *Cytisus* which grows in the *Canaries*, but gives no Description of the Plant. And indeed *Rhodian Wood* is imported from the *Canaries*; as also from the *Antilles*, and some oriental Countries; and is got from certain Trees which grow there.

A *Species* of *Rhodian Wood* is also found in *Jamaica*, and the learned Naturalist Sir *Hans Sloane* has

has described the Tree thus, *Lauro affinis, Terebinthi folio alato, ligno odorato, candido, flore albo, Catal. Pl. Jam.* It grows in rocky and mountainous Woods. The Inhabitants take it for *Rhodian Wood*; and it smells pretty much like it, though upon a curious Examination is found to differ. The Smoke of it when burning is extremely fragrant and agreeable.

The *Dutch* draw a very sweet scented essential Oil from *Rhodian Wood* by Distillation, which is often used for the essential Oil of *Roses*, in apoplectick, cephalick and cardiack Balsams. A Virtue of fortifying the Heart and Brain is attributed both to the Wood and its essential Oil.

ARTIC. II. Of GUAIACUM.

Guaiacum Off. Lignum sanctum, Lignum Indicum, Lignum Vitæ, et Palus sanctus, Quorumd. This is a solid, dense, ponderous, and resinous Wood; whereof the internal Part, which is called the *Matrix*, Pith, or Heart, is of a blackish green Colour, or variegated with pale, green, brown, and black. The external Part, which is the *Alburnum*, or Sap, is of a Colour like Box or a pale Yellow, with a bitterish and somewhat aromattick Taste, affecting the Palate and Jaws with a gentle Acrimony, and of a fragrant, agreeable Smell, when it is heated or burnt. This is covered with a woody, thin, dense, shining, smooth, and somewhat resinous Bark, composed, as it were, of many very fine *Lamellæ* or Scales, of an ashy colour on the outside, inclining to green, or black, or diversified with Spots more or less green, which are intermingled with a livid or leaden Colour, and pale within; having an acrid, bitter, and disagreeable Taste.

Guaiacum

Guaiacum was formerly in the Shops distinguished into many Kinds. *L. Oviedo* calls one Kind *Guaiacum vulgare*, and another *Lignum sanctum*. *Caspar. Baubine* reckons three Kinds. 1. *Guaiacum magnâ matrice*, C. B. P. *Guaiacan*, *Lignum Indicum ex Insulâ S. Dominici*, *Monard*. 2. *Guaiacum propemodum sine matrice*. C. B. P. *Guaiacan genus alterum, quod lignum sanctum, illo præstantius, et ex insulâ S. Joannis de portu divite affertur, quo maxime utuntur*, *Monard*. Of this many *Species* have been taken Notice of, which differ in nothing but Colour, Size, and Weight, being all taken from the same Tree; only that the Wood is whiter the younger the Tree is, becoming darker and heavier as the Tree grows old. 3. *Guaiacum foliis Lentisci*, C. B. P. *Clusius*, in his Notes upon *Monardus*, has given the Figure of a Branch of this last with the Flowers and Fruit upon it. But these several Trees seem to make one *Genus* only, which we may distinguish indeed into many *Species* from the Diversity of their Fruit; but whatever Difference besides may be observed, it will be found too trivial to constitute a distinct *Genus*. At least *Father Plumier*, *De novis plantarum Americanarum generibus*, makes one *Genus* of *Guaiacum* and no more, which he defines thus. It is (says he) a Kind of Plant (or rather Tree) with a Flower like a Rose, that is, consisting of many *Petala* standing in a round Compass. From the *Calyx* arises a Pistil, which changes afterwards into a fleshy, roundish Fruit, containing a Stone or Stones of an oval Figure, and covered with a soft Pulp. He reckons two *Species* of it, which he describes in his *manuscript History of American Plants*.

1. *Guaiacum flore cæruleo, fructu subrotundo*, *Plum. nov. gen. 39. Guaiacum tetraphyllum fructu singulari, Ejusdem hist. MS. 86. Pruno vel Evonymo affinis arbor,*

bor, folio alato, buxco, subrotundo; flore pentepetalo, cæruleo, racemoso, fructu aceris cordato: cujus cortex luteus, corrugatus, semen unicum, majusculum, nigricans, nullo officulo tectum, operit. Sloane Cat. pl. Jamaica. It grows in almost all the Antilles, particularly in *Dominica* and *Santo Cruz*.

2. *Guaiacum flore cæruleo fimbriato, fructu tetragono*, Plum. nov. pl. Amer. gen. 39. *Guaiacum polyphyllum fructu singulari, tetragono ejusdem hist.* MSS. 87. *Hoaxacan, seu lignum sanctum, Hernandez.* This is found common enough in *Dominica*. The Wood and Bark of these Trees are used in Physick; as also the Resin which flows from Incisions made in their Trunks. The Wood is best when fresh, heavy, and resinous, with a considerable Mixture of Black in its Colour, having the Bark adhering closely to it; and when it easily takes Flame, and some Part of it melts with the Fire into a resinous Mass. But when it is of a pale Colour, dry, or too much deprived of its Juice, carious, and insipid, it is bad. The Bark ought to be chosen resinous, hard, and cleaving firmly to the Wood. The Resin which in the Shops is improperly called *Gum Guaiacum*, is of a brown Colour on the outside, and transparent within, sometimes reddish and sometimes greenish, brittle, of an acrid Taste, and when it is burnt of an agreeable resinous Smell, pretty much like the Wood.

In a chymical *Analysis*, five Pounds of the resinous and blackish Wood of *Guaiacum* reduced to a kind of Saw-dust, yielded twenty eight Ounces and four Drachms of Phlegm, both acid and alkaline; whereof the first four Ounces seven Drachms and a Half having the Taste and Smell of the Wood, discovered Marks of a mere alkaline urinous Salt, forasmuch as they made the Solutions of Salt of Lead and corrosive Sublimate

foul and milky. The next five Ounces and two Drachms having a sharper Taste, besides an alkaline Salt which they discovered upon Trial, contained an Acid also, which they manifested by turning the blue Tincture of Turnsole to a reddish Colour. The last eighteen Ounces, two Drachms and a Half became more and more acid, and at length gave a fiery Colour to the Tincture of Turnsole; yet all along discovered an alkaline Salt, by precipitating the Solution of corrosive Sublimate. With these Liquors came over nine Ounces, six Drachms and a Half of blackish Oil of a thick Consistence like Syrup, and heavier than Water; and four Drachms of thinner Oil, which was of a yellow Colour and floated upon Water. The black Mass remaining in the Retort weighed thirty three Ounces and seven Drachms; so that seven Ounces, six Drachms and a Half were insensibly lost in Distillation.

The black Substance remaining behind, which we may call the Coal of Guaiacum, being calcined in an open Fire for twelve Hours, that is, till it had given over smoking and was reduced to white Ashes, weighed two Ounces, six Drachms and twelve Grains. From these Ashes, by Lixiviation, was obtained a fixt Salt, which was not merely alkaline, but neutral; for being put into the Solution of corrosive Sublimate, a white Powder subsided to the Bottom. The Quantity of this Salt was one Drachm and sixty two Grains. Wherefore thirty two Ounces and sixty Grains went off in Fume.

It is very remarkable, that in this *Analysis*, not much more than half the Principles, of which Guaiacum is composed, were drawn off; and that the other Part of them, consisting of a thick Oil, and an aluminous or vitriolick acid Salt, were so condensed, that the strongest Fire was unable to raise them

them in close Vessels; nor could they be separated from the Earth by any Means, but an open reverberatory Fire, continued for twelve Hours; whereby, at length, they were dissipated in Smoke and Flame.

Moreover, it is worth observing, that this Coal of Guaiacum, being taken out of the Retort and exposed to the Air, even two or three Days after the Process, takes Fire immediately of its own Accord; provided that, when the Distillation is over, the Neck of the Retort be carefully stopped, and the Vessels and Furnace be left to cool of themselves.

The distilled Oil of Guaiacum is so greatly condensed by the Acid in Combination with it, that it is easily converted into an earthy, black, insipid Mass, and becomes entirely fixt. For eight Ounces and six Drachms of the black Oil, being distilled from a Glass-Retort, gave over seven Ounces, two Drachms and a Half of a thinner and more fluid Oil, which was so replete with an acid Spirit, that it turned the Tincture of Turnsole to a deep red or fiery Colour; but contained nothing of an alkaline Salt, as appeared by its producing no Change in the Solution of corrosive Sublimate. In the Retort was left a black hard Mass, of a rare Texture, or spongiuslike a Pumice-Stone, weighing one Ounce, two Drachms, forty eight Grains, whereof ten Drachms, being exposed to a very strong Fire in a Crucible, continued flaming for two Hours and a Half; and at last, after a Calcination for four Hours, two Drachms of a dense, hard, insipid, and blackish *Caput mortuum*, were left in the Crucible.

The Oil of Guaiacum, when newly distilled and heavy, being mixed with an equal Quantity of the rectified Spirit of Nitre, falls immediately

into an Effervescence, rises up in the Vessel, and takes Flame. When the Deflagration is ended, a certain fungous, rare, light, shining, and insipid Substance remains, which is afterwards incapable of Alteration by any Means whatever. Now in both these Operations, the Oil and acid Salt are converted into an Earth, or an insipid, ponderous, and brittle Substance; whether it be, that those terrestrial Parts were pre-existing in the Oil and Salt, or otherwise have been newly produced from the Oil and Salt in the Operation.

We may conclude from this *Analysis*, that the Wood of Guaiacum consists of an acid vitriolick Salt, an Oil and Earth, closely combined together under the Form of a denser kind of Resin, so as not to be separated, but with the greatest Difficulty: And that it contains, besides, a certain ammoniacal Salt, which being less intimately joined with the other Principles, gives up its volatile urinous Part in the Beginning of Distillation.

The Sap or whiter Wood, which encompasses the brown middle Part of Guaiacum, is much the lighter, and less fit for medicinal Purposes, as is evident from its *Analysis*. For five Pounds of this fappy Part, in Distillation, afforded thirty one Ounces, two Drachms and eighteen Grains of Phlegm, both acid and urinous; with six Ounces, six Drachms and a Half of thick, and heavy Oil. The black Mass remaining weighed twenty three Ounces, three Drachms and a Half; and the Loss of Parts, which evaporated into the Air, was eighteen Ounces, three Drachms and fifty four Grains. Wherefore, in this Substance, the Principles are not so closely united as in the middle Part of the Wood; for as much as in that, the Loss in Distillation was eight Ounces less. Lastly, the black Mass that remained in the Retort, being perfectly calcined,

left

left one Ounce, three Drachms and forty six Grains of white Ashes; from which were got, by a Lixiviation, two Drachms and two Grains of fixt Salt, which was not purely alkaline, but neutral. The Bark of Guaiacum in like Manner, by a chymical Treatment, is found to be very different from the Wood, as well in its constituent Principles, as in the Mixture of them: For five Pounds of the Bark yielded in Distillation twenty four Ounces, one Drachm and thirty two Grains of Phlegm, both urinous and acid; yet so, that the first Portions of it discovered Marks of a weaker Acid, and seemed to be loaded with a much larger Quantity of alkaline urinous Salt, than the Liquor drawn from the Wood. Afterwards came over eight Ounces, three Drachms and forty four Grains of thick and heavy Oil; a black Mass, weighing twenty nine Ounces, four Drachms and fifty four Grains, remaining in the Bottom of the Retort. This, being calcined for eleven Hours in a reverberatory Fire, left thirteen Ounces, six Drachms and sixty Grains of white Ashes, which contained seven Ounces and twelve Grains of mere alkaline fixt Salt.

From these *Analyses* it is evident, that in the Bark is a larger Quantity of alkaline Salt, both urinous and fixt, than in the Wood; as also that it contains more of a fixt Earth or Ashes, but less Oil and acid Salt. Besides, it appears that their acid Salts are of a different Nature; since That in the Wood is formed into a fixt neutral Salt, and That in the Bark concretes into a Salt purely alkaline. So that upon the whole we may conclude, that the Virtues of the Wood and the Bark are different, and ought not to be indiscriminately made use of; which is confirmed by the Practice and Experience of the best Physicians.

Guaiacum incides, attenuates, and deterges thick and viscid Humours, opens Obstructions, provokes Sweat and Urine, helps Spitting, and strengthens the Stomach when too much relaxed, as likewise all the other Bowels. It removes long and inveterate Obstructions of the Liver and Spleen, and cures the Jaundice, Dropsy, and other Disorders arising from them. It dissipates and consumes superfluous cold Humours in all Parts of the Body; restrains Distillations from the Head, and appeases rheumatick Pains thence proceeding; being further wonderfully serviceable in the Gout of the Foot, Hand, or Hip, and in all other Appearances of the Disease; as likewise in Asthmas, Palsies, Stupors, and all Resolutions and other Affections of the Nerves whatever. It brings hard cold Tumours to Suppuration, and stops, dries, and cicatrizes malignant and *chironian* Ulcers. Moreover, it is much celebrated for its Efficacy in curing the venereal Disease, being said to remove the Pustules, Tubercles, Ulcers, Pains, and other Symptoms, without the least Detriment to the Body, or Loss of Strength. This its antivenereal Virtue was first discovered in *America*, after many Remedies had been tried for that Disease in *Europe* to no Effect. It happened that a certain *Spaniard* living in *Hispaniola*, was grievously afflicted with the venereal Disease, from an impure Commerce with an *American Woman*. In his House was a Native of *America*, who practised Physick in that Province, and who gave him a Decoction of the Wood of *Guaiacan* (as they call it) to drink; whereby he was relieved of his Pains, and quite cured of the Infection. Upon this many other *Spaniards*, who had received the same Taint, had recourse to the same Remedy, and with equal Success. Afterwards, many of them returning to *Spain*, spread abroad

its Reputation there; from whence it became known to the rest of the World, and was much used in all Places, till the sovereign Efficacy of Quicksilver was discovered; After which, by Degrees, it grew more and more out of use. Yet we must allow, that in hot Climates it is able to conquer the Disease, provided that the Cure be conducted in a proper Manner; but in a cold Air, where the Perspiration is more sparing, and harder to be promoted, it cannot be safely depended on without the Assistance of Mercurials.

Some assert that the Bark hath the same Virtues with the Wood, or even greater; though others, as *C. Hoffman*, *Matthiolus*, and *Fallopious*, suppose it to be much inferior. *Fernelius*, however, ascribes to it a more powerful Energy in attenuating, drying, and provoking Sweat; but reckons it over heating, and very prejudicial in a febrile State of the Blood, or an hot and dry *Intemperies* of the Liver. And indeed what *Fernelius* had discovered, as well by its being of a more acrid and bitter Taste than the Wood, as by long Experience, seems to be proved from its *Analysis*; since the Bark, as we have said, contains a much larger Proportion of subtile Parts, that is, of alkaline Salts, both volatile and fixt.

To cure the Venereal Disease, when this Remedy was relied upon for that Purpose, they took ℥xij. of the Filings of the Wood, and ℥ij. of the Bark well bruised; though by some the Bark was omitted. These being macerated for the Space of a Day in ℔vj. of Spring-Water, were afterwards boiled over a gentle Fire to a Diminution of Half the Liquor, or sometimes of three Fourths; which having stood to cool, was strained, and kept in a close Vessel for Use. This Decoction some called the Cream of Guaiacum, and others *Serapium*. Upon

the Remainder were poured ℥viiij. of fresh Water, and boiled to ℥iv. for a small Decoction. The Patient being duly prepared by purging, or likewise bleeding, was shut up in a warm Chamber, not exposed either to Cold or Wind, during the whole Course of the Cure, and took a Glaful of the stronger Decoction twice a Day, Morning and Evening. After each Draught he was put to Bed, and well covered with Clothes to sweat; where he was suffered to lie as long as his Strength would bear; and then was taken out and rubbed over with warm linen Cloths. Twice a Day, about three or four Hours after taking the Medicine, he was permitted to eat, and his Diet was small and thin, being only what might barely suffice for his Support. Some Physicians enjoined an entire Abstinence from Flesh, allowing only two Ounces of Biscuit with Currants or Raisins. Others allowed the Use of young Pigeons, Chickens, and such like tender Animals; but this Indulgence was very sparingly complied with. The Patient's common Drink was the smaller Decoction abovementioned, and Wine, by some, was absolutely forbid him, as highly noxious; yet by others it was prescribed to be medicated with the Decoction. The Belly was all along preserved in a lax State; and a strong Cathartick also was given every seventh Day. This Method was continued for twenty or thirty Days, or longer, until the venereal Poison was radically destroyed. When the Pains and all other Symptoms of the Infection were removed, the stronger Decoction was omitted, but the Patient still continued to use the smaller for forty Days more, returning by little and little to his usual Diet.

But at this Time the Method above laid down is no longer in use, because that of treating the Disease
with

with Quicksilver and its Preparations is much more certain: So that Guaiacum is now only prescribed in sweating, diaphoretick and drying Decoctions and Ptisans, for Catarrhs, Defluxions, Palsies, Obstructions of the Bowels, and during and after mercurial Courses for the Venereal Disease. It is given in Decoction from zj. to ʒss. or ʒj. joined with other suitable Medicines, and sometimes with Catharticks; but is very seldom prescribed in Substance. The Dose of the Resin is from gr. viij. to ʒij.

Take of the Shavings of Guaiacum-Wood ʒiij. of the Bark ʒj. Spring-Water ʒvj. let them stand to macerate for 24 Hours, and then boil to a Consumption of Half. The Dose of the strained Decoction is three, four, or five Glassefuls a Day, in the Venereal Disease, Rheumatism, and Palsy.

Take of the Wood of Guaiacum ʒiv. of the Bark and Sassafras ā ʒss. Aloes-Wood ʒij. Liquorice-Root shaved and bruised ʒj. Coriander-Seed ʒiss. Macerate these Ingredients for 24 Hours in ʒvij. of Fountain-Water, and then boil to Half, adding towards the End ʒss. of Raisins. When the Decoction is cold strain it for use.

Take of the Filings of Guaiacum ʒiv. Common Water ʒiv. Let them be macerated together a Day, and afterwards boiling to a Diminution of half the Liquor, add towards the End, of picked Sena ʒj. Turbith and Hermodactyls ā ʒij. The Dose is ʒss. in the Morning fasting, in a Palsy and Rheumatism.

From Guaiacum are prepared a Tincture, resinous Extract, Spirit, and Oil. The Tincture

and Extract are prepared after the following Manner.

Take of fine Filings of Guaiacum q. v. Put them into a Matrafs, and pour upon them the pureft rectified Spirit of Wine to the Height of three or four Fingers Breadth above the Wood. Let them digest in a gentle Sand-Heat for eight Days and Nights; after which the red Tincture may be carefully separated and put by for Use: Or being distilled with a flow Fire to the Consistence of a thick Extract, and then evaporated to Dryness in a Water-Bath, or the Heat of the Sun, the Mass remaining will be a resinous Extract.

This Tincture and Extract are accounted diaphoretick and sudorifick. The Tincture is prescribed to ʒj. and the Extract from gr. iv. to ʒij. The Spirit and foetid Oil are prepared thus.

Take of the Filings of Guaiacum q. v. Put them into a Retort, to which let a large Receiver be fitted, and then distil in a reverberatory Furnace, beginning with a flow Fire and increasing it gradually to the highest Degree of Heat, till no more Drops and Clouds come over into the Receiver. When the Vessels are cool remove the Receiver, and carefully separate the thick and black Oil from the Spirit: This Spirit is of a red Colour, but being distilled a second Time from a Glass-Alembick, is obtained limpid, purified of its Oil, and of a subacid Taste; yet after standing a few Weeks it becomes red again, from a latent Sulphur which is still contained in it.

The thick, black and foetid Oil, is either dissolved in Spirit of Wine and filtered through Cap-Paper, and so put by; or is mixed with a triple Quantity of common Salt calcined and powdered, and being distilled from a Glass-Retort in a Sand-Heat, comes over more fluid, red and less foetid, and so is preserved for Use.

Another essential Oil, which is transparent and not foetid, is drawn from Guaiacum thus.

Take of the Shavings of Guaiacum ℥iv. Sea-Salt ℥j. common Water ℔xxiv. Let them macerate together in a close Vessel for two or three Months. Afterwards distil with a strong Fire in an Alembick with a Refrigeratory; and thus will be drawn off a turbid Water loaded with an essential Oil, which gradually subsides to the Bottom. When the Water is quite clear, decant it, and the yellow, odorous, pellucid Oil, remaining in the Bottom of the Vessel, is called the essential Oil of Guaiacum.

Take Ethiops Mineral and prepared Wood-lice ā ziv. the distilled Oils of Amber and Guaiacum ā zfs. Gum Ammoniack reduced to Powder zj. Mix, and with q. s. of any proper Syrup, make an Electuary for cancerous Tumours.

The Spirit of Guaiacum provokes Sweat and Urine. It is given from zj. to ʒss. in a Decoction of the Wood, against Catarrhs, rheumatick Pains, and Palsies: Sometimes also it is joined with Sudorificks and Alexipharmacks, and is commended in pestilential and malignant Fevers.

The black Oil is seldom given inwardly, by Reason of its foetid Smell. Externally applied it

powerfully discusses, resolves, and attenuates; is commended for detarging Ulcers, especially such as are venereal, for resolving Tumours, consuming fungous Flesh, forwarding the Exfoliation of Bones, and stopping their *Caries*; and it appeases the Aching of a rotten Tooth by destroying the Nerve. By some it is given inwardly, diluted with Spirit of Wine and tempered with Sudorificks, from gut. ij. to xv. or xx. to provoke Sweat: But the essential yellow Oil is much less disagreeable to take, and no less efficacious for purifying the Blood of noxious Humours, which it expels by insensible Perspiration or Sweat. It is also commended by some in the Venereal Disease, to be taken every Day for some Weeks from gut. iv. to xij. in a Decoction of Guaiacum, or its distilled Water; but Quicksilver, as we have said, is here far preferable.

Lastly, some Physicians extol a Decoction of Guaiacum in the *Fluor albus* by Way of Injection.

ARTIC. III. O f S A N D E R S.

It is generally believed that the several *Species* of this Wood were Strangers both to the ancient *Greeks* and *Latins*. The *Arabians* first made Mention of them under the Name of *Sandal*; and the later *Greeks*, who followed the Footsteps of the *Arabians*, have also mentioned them. Nevertheless *Salmasius*, in his *Exercitationes Plinianeæ*, supposes the *Sagalina ligna*, which the Author of the *Periplus* or *Voyage round the World* speaks of, to be Sanders, and therefore not unknown to the *Greeks*: But as *Dioscorides* and *Galen* are quite silent about them, we may conclude that they were at that Time never, or at least very rarely used in Physick. At present we meet with three Sorts of Wood

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in the Shops under this Name, which are distinguished by their Colour into citrine or yellow Sanders, white Sanders, and red *.

1. *Santalum flavum vel citrinum*, Off. *Santalum pallidum*, C. B. P. *Santalum flavum*, Tabern : *Santalum citrinum*, J. B. Citrine or yellow Sanders is a ponderous, solid Wood with a straight Grain, or parallel Fibres, whence it may be easily cloven into even Planks. It is of a reddish pale or yellowish Colour, and somewhat inclining to that of a Citron; of an aromattick bitterish Taste, yet filling the Mouth with a sweetish Acrimony; and a fragrant Smell, something like Musk and Roses.

2. *Santalum album*, Off. *Santalum album*, C. B. P. *Lignum odoratum candidum*, Cæsalp. White Sanders differs from the former in Colour and a fainter Smell; otherwise has the same Substance and Texture.

Garcias ab Horto tells us there is so great a Resemblance between the Trees producing the citrine and white Sanders, that they can hardly be distinguished, except by the Inhabitants perhaps who sell them to the Merchants. But the learned Botanist *P. Herman* asserts that both are produced from the same Tree, the *Alburnum* or Sap being called white Sanders, and the medullary or interior Part being the yellow.

The Name of the Tree is *Sarcanda*. It is about the Bigness of a Walnut-Tree, and grows in the *East Indies*, particularly in the Kingdom of *Siam*, and the Islands of *Timor* and *Solor*.

According to *Bontius*, they who go to these Islands to fell Sanders-Trees, are seized with a par-

* Red Sanders is now the only Sort referred to in Prescription: But to explain the Virtues of this, it is here necessary to give an Account of the *citrine* and *white*, my Author's Method of treating them rendering it unavoidable.

ticular Kind of ardent and continual putrid Fever, attended with Deliriousness and a surprizing Perturbation of Mind. For during the Exacerbation, which is usually four Hours, the Sick commonly perform very ridiculous Actions, being for the most Part such as are exerted in their ordinary Employments when in Health. And besides, in the *Delirium*, they have a canine Appetite, greedily devouring whatever Filthiness is offered to them. Among the Causes of this Fever he reckons principally the Smell of these Trees, when newly cut down; from which, and especially from their Bark, certain *Effluvia* are emitted, which have something in them deleterious and offensive to the Brain.

3. *Santalum rubrum*, *Offic.* *Santalum rubrum*, C. B. P. Red Sanders is a solid, dense, heavy Wood, with Fibres in some Places streight, in others tortuous, resembling the Vestiges of Knots. It is the Heart of a Tree brought over to us in large Blocks, separated from the cortical and exterior woody Parts, of a dark reddish, and, as it were, blackish Colour on the outside, and of a deep Red within; having no sensible Smell, but in Taste is a little astringent and austere.

The Tree from which it is got is called *Pentaga*. I have met with no Description of it in any Author, except that *Herman* says it bears Pods. It grows in *Coromandel*, a Country of the *East Indies*.

In the Shops instead of red Sanders are often substituted two Sorts of Wood, which are imported from the *Indies*, and from *America*. The one is called *Ligno Brasiliano simile, seu Lignum sapolanis tingendis percommodum*, C. B. P. and the other is the *Lignum Brasiliium*, J. B. Yet it is easily distinguishable from them both in Colour and
Taste :

Taste : For red Sanders is of a sanguine or dark red Colour, and subaustere Taste ; and these have a sweetish Taste, and their Red diluted with a Cast of Yellow.

The three *Species* of Sanders contain an essential acid Salt, a thick Oil which sinks in Water, a small Portion of volatile Salt, and a large Quantity of Earth. In the yellow Sort the Oil is thinner and more copious, not so thin in the white, and thicker in the red, wherein is a larger Proportion of Earth, as is sufficiently evident from their Taste and Smell.

In Regard of their Virtues Authors are divided, some ranking them among cooling Medicines, others among such as are heating. Indeed from their *Analysis* it is manifest, that some fine and active Parts are included in their Composition : Wherefore *C. Hoffman* not unjustly blames Physicians who give them with an Intention of cooling. They are then more truly accounted inciding, attenuating, astringent, and strengthening ; these Operations being variously exerted according to the Difference of Circumstances, which we have before observed in many other Medicines. The citrine Sanders more powerfully incides, the white much more weakly, and the red astringes more powerfully than either. Physicians generally ascribe to all three a Virtue of comforting the Heart, resolving Obstructions of the Liver, and restoring or augmenting the Tone of the Bowels.

Riverius commends the Decoction of Sanders as a most efficacious Remedy, not only in a beginning Consumption, but also in saline Defluxions, particularly when the Humour is thin ; and in inveterate Fluxes of Blood proceeding from its Incalescence he asserts they do Wonders. The Decoction of Sanders is prepared as that of Guaiacum,

acum, both the primary and secondary, and is given in the same Manner. The Dose of citrine Sanders in Substance is from ℥j. to ℥j. of the red to ℥ij. and in Decoction to ℥ss.

Take citrine and red Sanders ā ℥ij. Macerate for 24 Hours in ℔ij. of Water; then boil to a Consumption of a third Part, and let the strained Apozem be used for common Drink.

Take of the Shavings of red Sanders ℥j. Boil in ℔ij. of clear Water to Half. To the strained Liquor add ℥ij. of the Syrup of Pomegranates, and make an Apozem for Hemorrhages and Obstructions of the Liver.

Red Sanders is sometimes applied to the Head in the Form of an Epithem to allay Pain in ardent Fevers.

Take of red Sanders in Powder ℥j. Crums of Bread ℥ss. Vinegar of Roses q. s. to make a Cataplasim or Epithem; to which add ℥ss. of camphorated Spirits of Wine, and apply it to the Forehead.

ARTIC. IV. Of SASSAFRAS.

Sassafras, Off. *Sassafras*, sive *Lignum Pavanum*, J. B. This Wood is of a pale reddish brown Colour, of a rare Texture and light, with a fungous Bark of an ashy Colour on the outside, and ferruginous within. It has an acrid, sweetish, aromattick Taste, and fragrant Smell, not much unlike that of Fennel. It comes to us from *Virginia*, *Brasile*, and other Provinces of *America*. It is chosen fresh and well scented. The Bark by some

is preferred to the Wood, as being more fragrant. Sometimes it is adulterated with the *Lignum anisatum*, seu *Lignum Anisi*, J. B. Which it is easy to distinguish from Sassafras, as well by its smelling like Aniseed, as by its heavy, resinous and dense Substance.

Sassafras is the Wood of a large Tree of the Bigness and Figure of a Pine, which is called *Sassafras Arbor ex Florida, ficulneo folio*, C. B. P. *Laurus foliis integris et trilobis*, Lin. H. Cliff. 54. *Cornus mas odorata folio trifido, margine plano*, *Sassafras dicta*. Pluken. Alm. p. 120. Tab. 222. Fig. 6. Catesby Hist. Tom. 1. p. 55. T. 55. *Anbuiba sive Sassafras major*, Pison.

Piso likewise describes two other Species of this Tree. The one he distinguishes *Anbuypitanga Brasiliensibus*; the other *Anbuiba miri*.

In a chymical *Analysis* of five Pounds of Sassafras were obtained ten Drachms of fragrant essential Oil, which was transparent, of a yellowish Colour, and heavier than Water; seven Ounces of thicker Oil, of an empyreumatick Scent, and reddish Colour; about thirty two Ounces of acid Spirit, with two Ounces and five Drachms of urinous Spirit. In the Retort was left a black Mass reduced to a Coal, weighing twenty three Ounces and one Drachm. Whilst this was calcining, if it were but slightly stirred with a Spattle, it immediately flew off in Sparks of Fire. The white Ashes remaining after Calcination weighed seven Drachms and forty Grains; from which were got by Lixivation forty two Grains of fixt neutral Salt. The Loss of Parts in Distillation was fourteen Ounces; in Calcination, twenty two Ounces and two Drachms; in the whole, thirty six Ounces and two Drachms. Whence it appears, that besides the active sensible Parts of this Wood, there are still others

others less sensible contained in it, which make their Escape in the Process. Now the Virtues of this Compound almost wholly depend upon extremely fine, volatile, and (as they are termed) essential oily Parts, united with a subtile, rare and expanded Acid.

It provokes a *Diaphoresis*, Sweat, and Urine; incides and resolves thick and viscid Humours, opens Obstructions of the Bowels, and is good in a Cachexy, Green-Sickness, and Dropsy. It asswages arthritick Pains, cures cold catarrhus Affections, and is serviceable in the Palsy and Venereal Disease. The Dose in Powder is \mathfrak{zj} . however it is seldom prescribed in Substance, but oftener in Decoction or Infusion from \mathfrak{zss} . to \mathfrak{zij} . It is of common Use in sudorifick and drying Decoctions.

Take of the Wood of Sassafras with the Bark reduced to a gross Powder \mathfrak{zj} . Let it infuse a Night in \mathfrak{lbj} . of strong white Wine, and give a Glassful of the strained Liquor now and then in a Catarrh, and all cold Defluxions.

Take of Sassafras cut small \mathfrak{zij} . Infuse in \mathfrak{lbijss} . of clear Water for twelve Hours, and boil to \mathfrak{lbij} . Strain, and let a Glassful be taken at the medical Hours.

Take Sassafras, Guaiacum and Sarsaparil, \bar{a} \mathfrak{ziss} . Let them macerate a Night in \mathfrak{lbiv} . of Spring-Water; then boil to \mathfrak{lbij} . and strain. Let the Patient drink three Glassfuls a Day in the Palsy, Catarrh, or Venereal Disease.

An essential Oil is drawn from Sassafras, which is transparent, of a fragrant Smell, something like Fennel, and subsides in Water. It is procured by macerating the Shavings of the Wood with the Bark in a large Quantity of Water, and then com-

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mitting them together to the Still. It promotes Sweat, and is given from gut. iij. to xx. One Part of this Oil being mixed with two Parts of the Spirit of Nitre, a vehement Effervescence immediately ensues, and the Mixture takes Flame; and when the Flame is extinguished a resinous Substance is left in the Vessel.

C H A P. IV.

Of MARINE PLANTS (*viz.*) of the different Sorts of CORAL.

CORALLUM et *Coralium*, Off. Κεράλιον, *Theoph.* Κοράλλιον et Λιθάδενδρον, *Diosc.* *Curalium* et *Gorgonia*, *Plin.* Coral is a marine Plant, growing under the Water, without Leaves, almost like Stone, divided into Branches, dense, solid, brittle, and covered with a Bark, or rather a Kind of tartarous Crust, which however is soft. Its Colour is various, one Sort being of a Blood-Colour, another fleshy, and others yellow, brown, white or variegated. In the Shops two Sorts only are made use of (*viz.*) the red and the white.

Corallum rubrum, Off. *Corallum rubrum*, C. B. P. 366. Red Coral is found in the *Mediterranean*, in the Bay of *France*, about the Shores of *Provence*, from the *Cape of Couronne* to that of *Saint Tropez*, in the Bay of *Spain*, about the Islands of *Majorca* and *Minorca*, on the southern Shore of *Sicily*, on the Coast of *Africa*, in the *Mediterranean* near the *French Fortrefs* commonly called *le Bastion de France*, and about *Negro Cape* in the *Ethiopick Ocean*. The Urinators, who are continually employed in fishing for Coral, give out that it is found only

only in Caverns whose Situation is parallel to the Surface of the Earth, and which open towards the South; and that it grows no where but upon the Roofs of these Caverns, and always with its Branches downwards. But a convincing Argument to the contrary is, that Branches of Coral are sometimes found upon Pitchers, Sculls, Pieces of Wood, Iron, Shells, and Things of the like Nature; for these always subsiding to the Bottom of the Sea, the Coral adhering to them must necessarily grow upwards.

The Urinators in *Provence*, in fishing for Coral, make use of two Machines. The one, which is commonly employed for getting the Coral from craggy Rocks, is a large wooden Cross, with a heavy Ball of Lead fixed to the Centre to make it sink. This is sustained by a long Rope, and a Net of an orbicular Form is hung to each of the Arms or Extremities of the Cross. This Cross being let down into the Water, when the Urinators have discovered a Cavern well stocked with Coral, the Person to whom the Care of directing the Machine is committed, pushes an Arm or two of the Cross into the Cavern, and so the Coral, being entangled in the Nets, is broken off and drawn out of the Water by Persons who stand in Boats.

The other Machine, whereby Coral is got from the deepest Caverns, is a long Beam, to the End of which an Iron-Circle is fixed a Foot and Half in Diameter, bearing a reticular Sack, with two such Nets as those abovementioned, on each Side one. This Beam is connected to the Prow and Stern of a Boat by two long Ropes, and being sunk in the Water by a Ball of Lead, is directed and impelled under Caverns by the Motion of the Boat. The Coral-Branches, growing on the Roofs of the Caverns, are scraped off by the Circle of
Iron,

Iron, and others are drawn up entangled in the Nets. Sometimes, though very seldom, they meet with Branches which weigh three or four Pounds.

Some doubt whether Coral ought to be numbered among Plants, or not. But it grows as Plants, and receives Nourishment. It also bears Flowers and Seed, or a certain feminal Substance, at least, by which it is propagated. No one will doubt its Vegetation, who shall duly consider the different Growths of Corals. Stones and Fragments of Rocks from the Bottom of the Sea are observed to be covered with Points or Coral-Buds, small Branches two or three Lines in Length, and others some Inches; so that we have no Room to doubt, but these Buds would increase in their Growth to Lines and Inches, or even to some Feet in Process of Time.

Paul Boccone has long since observed a nutritious milky Juice included in distinct Cells under the Bark. As to the Flowers, the illustrious *Aloysius Ferdinand Count de Marsigli* has given an accurate Description of them, in the Supplement to the *French Ephimerides* for the Year 1707, and moreover has composed a complete History of Coral, in his *Natural History of Submarine Substances*, which has not yet been published.

Therefore red Coral is a marine Plant consisting of a twofold Substance. The one, or the interior, is dense, stony, without visible Pores, or Fibres, striated or marked along its Surface with small Furrows, of a deep red Colour, and void of Taste and Smell. The exterior is softer, fungous, resembling a Bark, and whilst it is under the Water, full of an acrid milky Juice, of a greenish or yellowish Colour, or yellow with a Cast of red. The Trunk is divided into a great Number of Branches. It has neither Leaf nor Root; but adheres to

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Rocks,

Rocks, Stones or other Bodies by a broad thin *Basis*, formed by an Expansion of its stony Substance. The Bark, which covers the *Basis*, Trunk and Branches, when the Coral is newly taken out of the Water, is easily separated from the interior Part, but with greater Difficulty when it is dry. Externally it is uneven, rough, and bestrewed as it were with Grains, which are perforated in the Middle by a small Aperture, to receive the nutritious Juice from the Water that surrounds it. Moreover, from the Surface of the Bark arise *Papillæ* or small Glands distributed here and there, hollow within and divided in many Cells, which have an Orifice opening at the Top of the *Papillæ*, sometimes oblong, sometimes round, but more frequently divided into six Chinks, so as to exhibit the Form of a Star. The internal Surface of the Bark is striated or marked lengthways with Furrows, which corresponding to those on the Surface of the stony Substance, when they are applied upon each other constitute Canals, through which the nutritious Juice is diffused over the whole Plant. In the stony Substance likewise are discovered Cells, containing a Juice like the *Papillæ* of the Bark. Whilst the Plant is growing in the Water, its Canals, *Papillæ* and Cells are turgid with a viscous milky Juice, of an acrid and somewhat astringent Taste, approaching to the Taste of Pepper and Chestnut. When it has been exposed for some Time to the Air, this Juice is inspissated, dried and converted into a yellowish friable Substance, void of Acrimony, having only a gentle Astringency.

At the Tops of the Branches are soft Tubercles composed of the cortical Substance, distinguished into different Cells, and replete with the same milky Juice. They are soft, like the Bark, when
first

first taken out of the Sea, but by Degrees become dry and friable in the Air. These Tubercles are regarded by many as the Fruit or Receptacles of the Seed ; but they rather seem to be Organs appointed by Nature to prepare and perfect the nutritious Juice.

The Flowers are contained in the *Papillæ* of the Bark. When Coral, fresh out of the Sea, is kept in Sea-Water in a Place moderately warm, they gradually swell and are expanded, and a Drop or two of a milky Juice exudes from them. Afterwards a white *Calyx* arises from each of them a Line and Half long, bearing eight white Leaves disposed in Rays, and representing a kind of Star. At length, after eight, ten or twelve Days, the Flowers, as they wither, turn yellow, and are contracted into small Globes full of a milky Juice ; which falling off from the Bark, sink to the Bottom of the Water. The *Count de Marsigli* suspects that these round Corpuscles are the Fruit, and that the Seed is concealed in their Juice.

This sagacious Naturalist first observed these Flowers in the Month of *December* in the Year 1706, in some Coral which was fresh got out of the Sea near *Marseilles* ; for letting it stand for some Hours in a Vessel filled with Sea-Water, he discovered white stellated Flowers scattered here and there upon it. The Water being taken away, the Flowers disappeared, red *Papillæ* only remaining : But a new Supply of Water being added, the Flowers appeared again ; and thus for ten or eleven Days they continued visible.

Coral is found at almost all Times in Flower in the Sea : At least, the *Count de Marsigli* has found it full of Flowers in Winter, in Spring, and in Autumn. The Ancients have told us, that Coral as long as it continues in the Sea is soft, and im-

mediately upon coming to the Air grows hard like a Stone. But this is a Mistake; for it is equally hard whether it be within or out of the Sea. Indeed the Bark, as long as the Coral is in the Water, is softer, and by lying in the Air to dry becomes something harder, though never so hard as Stone.

The Liquor wherewith the Canals, papillary Protuberances, and Cells of the Bark are filled, when the Coral is first got out of the Ocean, is milky and glutinous, of an acrid Taste with some Astringency, approaching, as we have said, to the Taste of Pepper and Chesnut; which is very perceptible in fresh Coral, but as the Liquor dries the piperine Taste is lost, the Astringency only remaining. The Liquor, after being about six Hours in the Air, turns yellow, is inspissated, and at length changes into an hard and friable Substance of a Saffron Colour. It is the Juice which is subservient to the Nutrition and Increase of the Plant. What is contained in the round *Capsulae* of the Flowers seems to be impregnated with the Germ of Coral, and may pass for its Fruit or Seed; inasmuch as these *Capsulae*, when they fall off from the Branches, adhering to Rocks, Shells or other Bodies upon which they light, are by little and little expanded and germinate, and produce a new Coral-Plant.

The stony Substance of Coral is not inert, nor destitute of active Principles; much less the Bark. In short, Coral, when fresh out of the Sea, is indued with active and volatile Principles, of which it is deprived by being kept long in the Air. The Bark contains still a larger Proportion of these Principles, as appears by its *Analysis*.

From three Ounces of the Bark of Coral, fresh and replete with milky Juice, were obtained in Distillation five Drachms and thirty Grains of Phlegm,

Phlegm, which was almost insipid ; nine Drachms of urinous Spirit, mixed with a small Portion of thick and bituminous Oil. The Mass remaining in the Retort weighed one Ounce ; which being calcined for three Hours, afforded twenty five Grains of fixt Salt. The Loss of volatile Parts, both in Distillation and Calcination, was one Drachm and thirty Grains.

Three Ounces of Coral, fresh and cleared of its Bark, yielded eighteen Grains of whitish Phlegm, and forty eight Grains of urinous Spirit, with a little bituminous Oil. The Weight of the *Residuum* was two Ounces ; from which were got, by Lixiviation, thirty five Grains of fixt Salt. The Loss in Distillation and Calcination was about thirty five Grains.

From three Ounces of Coral, taken out of the Sea a Year and Half before, came over thirty Grains of urinous Phlegm mingled with bituminous Oil. The *Residuum* weighed two Ounces, seven Drachms and thirty Grains ; from which, after Calcination, were obtained twenty five Grains of fixt neutral Salt. The Loss in the Operation was thirty six Grains.

The urinous Spirit turned the Syrup of Violets green, fermented with acid Liquors, and changed the Solution of corrosive Sublimate into a milky *Coagulum*. The fixt Salt, extracted from the *Caput mortuum*, occasioned a white *Coagulum* in the Solution of corrosive Sublimate. Whence it appears that this fixt Salt is not purely alkaline, but saline.

Red Coral being calcined in an open Fire loses its Redness, and becomes of a pale Colour, or white. It likewise turns white by being macerated a long Time and boiled in certain Oils, as Oil of Anise, Fennel, Citron, &c. and the *Menstrua* receive a red Colour : But no such Change is effected by boiling it in aqueous Liquors.

We may conclude from these *Analyses*, that Coral is not merely terrestrial and absorbent, but that it contains a volatile urinous Salt and bituminous Oil mixed with some Earth, whereupon its Virtues depend; and that its Redness is owing to the bituminous Oil, which it is possible to separate from the Earth. Further, it appears that fresh Coral is considerably different from that which has been long kept; and that the Bark, perhaps, has more Energy than the other Part, which ought to be inquired into by Experiments.

Dioscorides ascribes to Coral an astringent Virtue, and says it cools moderately, restrains Excrecences, deterges Scars of the Eyes, fills hollow Ulcers and Chaps, stops Fluxes of Blood and cures Difficulty of Urine. These Virtues are not owing to an earthy, absorbent and drying Principle only, but also to its bituminous and balsamick Oil. It is prescribed to Advantage in all Hemorrhages, Loosenesses and the *Fluor albus*. The Dose is from ℥j. to ʒj. Moreover, it is said to fortify the Heart, and to resist Poisons and Malignity of the Humours, not only when taken inwardly, but likewise being hung externally upon the Body. But we are not sufficiently assured of this Property.

Many Preparations of Coral are given in medicinal Writers, as the Magistery, Salt, Tincture and Syrup, which at this Time are almost universally rejected. It is now chiefly used in Powder, being ground upon Porphyry to an *Alcohol*, and then is called *prepared Coral*. And this Preparation is preferable to the rest; for the Coral is so much altered in the others, that it differs entirely from itself. Thus, the Magistery is a Solution of Coral in acid Liquors precipitated by Alkalines. The Salt is not a real Salt of Coral, but Crystals arising from an acid Salt united with it by Dissolution
and

and Evaporation: And the Syrup is an acid Solution thereof boiled with Sugar to a due Consistence. As to the Tincture, in the several Ways it is generally directed, it does not receive its Colour and Virtue so much from the Coral, as from the *Menstruum* and the other Ingredients mixed with it. However, if a true Tincture of Coral be required, it may be made thus.

Take of red Coral q. v. Boil it in q. f. of the essential Oil of Anise or Fennel for six or seven Hours in a close Vessel, till the Pieces of Coral grow white and the Oil is tinged with a red Colour. Separate the Oil from the Coral, and distil it with a gentle Fire till the Drops begin to come over red. Then upon the resinous Mass remaining in the Retort pour Oil of Tartar *per deliquium* to the Height of two or three Fingers, and let them digest together till the Resin is entirely dissolved. Evaporate this Solution to Dryness: Then pour upon the saline resinous Mass rectified Spirit of Wine to the Height of three or four Fingers above it. Digest in an Ash-Heat, and separate the Tincture. Pour upon it again fresh Spirit of Wine and digest as before; repeating these Affusions and Digestions as long as the *Residuum* communicates any Colour to the Spirit. Mix all the Tinctures, and evaporate to Half. The remaining Liquor is a true Tincture of Coral; yet its Effects will not answer the Promises of Empiricks. It contains the sulphureous and bituminous Part of the Coral.

Corallum album, Offic. Corallum album, Lobel. Icon.
253. White Coral only differs from the red in Colour. It is rarely found in our Seas; and most

Authors who have told us that it grows in the *Mediterranean*, have mistaken for it a *Species* of *Madrepora*. The *Count de Marsigli*, in the many Times he was present at the Coral-Fishery, met with no white Coral. In short, as Branches are found partly white and partly red, may we not suppose that all Coral is naturally of a red Colour, and that it never appears of any other, but when it is somehow vitiated, or becoming dry and destitute of its Juice with Age turns white? Which, however, I shall not positively assert, before a sufficient Number of Observations have confirmed the Truth. Nevertheless, the *Count de Marsigli* is of the same Opinion in Regard of brown Coral, as also of the yellowish or ash-coloured, which he supposes to be nothing but broken Coral Plants deposited a long Time in the Mud at the Bottom of the Sea. White Coral is not mentioned either by *Dioscorides* or *Galen*; whence it seems to have been a Stranger to them.

It has the same Virtues ascribed to it as red Coral, but weaker. They are frequently prescribed together.

It is doubtful whether any true black Coral is to be met with, (*viz.*) Coral with a stony, dense, hard Substance, and a black shining Colour, like black Marble. At least, I could never find such either in the Shops, or among Lapidaries; what is there given out for it, being nothing but Trunks or Branches of a marine Plant, which is called *Lithophyton nigrum, arboreum*, *Inst. R. H.* 574. *Corallum nigrum*, *C. B. P.* 366. *Corallum nigrum, sive Antipathes*, *J. B.* 3. 804. the Substance of which is like Horn, dense, hard, not easily broken, and covered with a Bark which is fibrous and sometimes resembling Tartar. It is easily distinguished from Coral, because it burns in the Fire like Horn,
and

and smells like it, which Coral does not. It yields a large Quantity of volatile Salt in Distillation, but is seldom or never used in the Shops.

We often find in the Shops under the Name of white Coral some *Species* of *Madrepora*, which are marine Plants of a stony Substance, white, divided into Branches, much like Coral, yet differing from it as they are full of Perforations, hollow within, and grow without a Bark. The *Species* of this Plant which ofteneft occurs in the Shops, is the *Madrepora vulgaris*, *Inst. R. H.* 573. *Corallium album oculatum officinarum*, *J. B.* 3. 805. When it is taken out of the Sea it seems full of a glutinous milky Juice. Some attribute to it the same Virtues as to white Coral.

CHAP. V.

Of STALKS, LEAVES and FLOWERS.

ARTIC. I. Of SCOENANTH.

Scoenantbus et Squinantbum, *Off.* Σχοῖνος, *Dioscor.*
et Gal. Σχοῖνος ἰδιόσμος, ἢ ἔνοσμος, ἢ ἐνώδης, *Hippoc.*
 Σχοῖνος ἀρωματικός, ἢ μυρσινός, *Græcor. recent.* Σχοί-
 νανθος, *Actuar.* *Funcus odoratus*, *Plin.* *Funcus rotun-*
dus, *C. Cels.* *Adber seu Adcher*, *Arab.* *Palea de Me-*
châ, *Pastus et Fænum Camelorum*, *quorumd.* This is
 a dry, rigid, cylindrical, shining, geniculated Grass *
 brought from *Arabia*, with the Leaves and some-
 times the Flowers upon it, about a Foot long, full
 of a fungous Pith, of a pale Colour towards the

* Though it is commonly called a Rush, yet it is not one, but a *Species* of Grass, whose Leaves grow thick together, inclosing or incompassing one another, having a small fibrous Root; they are long and narrow, &c. *Miller. Botan. Offic.*

Root,

Root, or yellowish, and green or purplish near the Top; having an hot, subacid, bitterish, and pleasant aromack Taste, like Pennyroyal, but much stronger, and a very fragrant Smell, between Pennyroyal and Roses. Many Blades of it spring up from one Root.

Some Writers on the *Materia Medica* dispute whether our *Scœnanth* be the same with the *Juncus odoratus* of the Ancients; but this *Matthiæus* and the two *Baubines* have clearly demonstrated. *Dioscorides* and *Galen* called it $\sigma\chi\omicron\iota\nu\omicron\varsigma$ or *Juncus* simply, by Way of Eminence. *Celsus*, lib. iii. c. 21. mentions it by the Name of *Juncus rotundus* or the round Rush, to distinguish it from the *Juncus quadratus* or square Rush, which the *Greeks* called *Cyperus*. It was anciently named among the *Greeks* $\sigma\chi\omicron\iota\nu\omicron\varsigma \acute{\alpha}\nu\theta\omicron\varsigma$ (*viz.*) *Junci flos*, which *Galen*, in his Notes upon the *Iberiacæ*, admires at, because no Flowers were then brought with it. Whence he concludes, that the old *Greeks*, by this Appellation, meant the Plant itself and not its Flower. They might so term it, perhaps, on Account of its Excellency above other Rushes; for the Word $\acute{\alpha}\nu\theta\omicron\varsigma$ denotes not only a Flower, but, as *Salmasius* observes, something excellent. Nevertheless, it is surprizing that *Galen* should assert he never saw the Flowers of this Plant, or that in his Time none were brought with it; when *Dioscorides*, among the Marks whereby he directs the Choice of it, requires that it should have Flowers; and at present the Blades frequently come to us with Flowers upon them.

The Plant is called *Schœnanthos sive juncus odoratus*, J. B. T. 2. 515. *Juncus rotundus aromaticus*, C. B. *Fb. Botan.* 163. *Gramen Dactylon aromaticum multiplici paniculâ, Spicis brevibus tomento candicantibus ex eodem pediculo binis*, *Pluk. Phytograph.* T. 191.

Fig. 1.

Fig. 1. It grows in such Plenty in some Parts of *Arabia*, that it is the common Fodder for Camels.

Formerly all the Parts of *Scœnanth* were employed in Physick (*viz.*) the Blade, Flower and Root, *Dioscorides* having made Mention of them. Some commend only the Leaves, asserting that they are preferable to the Flowers: But all the Parts are odoriferous, and not void of Efficacy. The Leaves vellicate the Tongue with a pleasant aromack Acrimony. The Root has an hot aromack Taste. The fresh Flowers also are gently aromack; but being kept a Year they have no longer this Quality, and after two years are quite usefess. Moreover, to these Parts are ascribed different Properties. The Root is more astringent than the Flower, and the Flower, as consisting of more subtile Parts, is hotter than the Leaf. Therefore *Scœnanth* ought to be made Choice of for medicinal Compositions, fresh, with Flowers upon it, odoriferous, aromack, and hot upon the Tongue.

It abounds with an essential aromack Oil, which is obtained by Distillation; but it is seldom used in the Shops.

Dioscorides and *Galen* attribute to *Scœnanth* a Virtue of provoking Urine and the *Menses*, and of curing Inflations of the Liver, Stomach and Belly, being either applied by Way of Fomentation, or drank in Decoction. Among the Moderns it is chiefly used against Obstructions of the Bowels, particularly of the Womb, Liver, and Spleen; as also in the Hickup, Vomiting, Difficulty of Urine, and Inflation of the Stomach. The Dose in Powder is ʒj. and in Decoction in Wine or Water to ʒij. Externally, included in Sacks, or boiled in Lotions, it strengthens the Head, Stomach, and the other Bowels. *Simon Paulli* relates, that *Meibomius* gave *Scœnanth*, mixed with the Root of *Cyperus*, as a Specifick in Ulcers of the Bladder.

ARTIC. II. Of the INDIAN LEAF.

Malabathrum et Folium Indum, Off. Μαλάβαθρου et Φύλλον. Μαλαβάθερα, *Diosc. et Gal.* Μαλάβαθρον Ἰνδικόν, *ejusdem Gal.* Φύλλον Ἰνδικόν, *Aetuar.* *Malabathrum*, *Plin. Sadegi, Avicen. Tamalapatra, Garz.* This Leaf is like that of the Cinnamon-Tree, from which it only differs in Taste and Smell, being oblong, pointed, dense and smooth, with three Nerves running its whole Length from the Pedicle to the Point, and of a pleasant aromattick Smell, something like Cloves.

It ought to be chosen fresh, of a thick firm Texture, large and entire, and not easy to be broken into Bits.

Concerning the *Malabathrum* of the Ancients Authors are of different Opinions, nor can we be absolutely certain that our *Indian Leaf* is the same. *Dioscorides* tells us *Malabathrum* floats upon Waters like the *Lens palustris*, without Root; but he has either transmitted Fables to us from Hearsay, or we are now entirely unacquainted with the Plant he speaks of. *Pliny* asserts that it is the Leaf of Nard, which Notion *Dioscorides* had already rejected. *Garcias*, among the various Sentiments upon this Head, infers from the Similitude of Names, that the *Indian Leaf* of the Moderns and *Malabathrum* of the Ancients are one and the same Thing: For by the *Indians* it is called *Tamalapatra*; whence he supposes Μαλάβαθρου is derived. And we are of his Opinion.

The Tree which bears it is the *Canella Sylvestris Malabarica*, *Raii Hist.* 1562. *Katou-Karua*, *Hort. Malab.* P. 5. 105. *Canella arbor Sylvestris, Muntingii: Tamalapatrum sive Folium*, C. B. P. 409. It grows in the mountainous Parts of *Malabar*.

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The *Malabathrum* of *Dioscorides* has the same Virtues with Nard, but in all Intentions is reckoned more efficacious. It is now seldom used in Physick, except in *Venice Treacle* and *Mithridate*.

ARTIC. III. Of SENA.

Senna, Sena, et Folium orientale, Off. Σένα, Actuar. Sene, Arab. Abalsemer Persarum. Under these Names in the Shops we meet with small, dry, fattish Leaves, of a firm Texture, and pointed something like a Lance, having a green Colour with a Cast of yellow, a faint Smell, though not altogether unpleasant, and a subacid, bitterish, nauseous Taste.

Two Sorts are usually brought to us. 1. *Senna Alexandrina seu Zeidensis, aut Sidonia, Alexandrian or Sidonian Sena.* 2. *Senna Tripolitana, Sena of Tripoli,* which is much inferior. The Leaves are broader than the others, of a pleasant green Colour, ending obtusely, and rough to the Touch. Besides these, we sometimes have the *Senna Mochana, Sena of Mocha,* whose Leaves are narrower, longer and sharper; and likewise the *Senna Italica or Italian Sena,* which is distinguished from the true Sort by the Largeness and Broadness of its Leaves, which are also roundish at the Extremity, and marked with high Veins. But these come to us but seldom.

The best Sort of Sena is the *Alexandrian.* It ought to be fresh, of a yellowish green Colour and quick Scent, gentle to the Touch, entire, free from Stalks and Spots, and to give by Infusion a deep Colour to Water.

Not only the Leaves, but likewise the Fruit or Follicles, as they are called, are used in Physick. These are oblong, crooked, smooth and flat membranous Pods, of a reddish or dark green Colour, containing

containing flattish Stones, almost like Grape-Stones, which are pale-coloured or blackish.

Sena was unknown to the older *Greeks* and *Latins*. Yet some doubt whether *Dioscorides* and *Galen* were ignorant of it; because the Interpreters of *Mesue*, where he speaks of a Decoction of Sena, quote *Galen*; though in Reality it is not to be met with in his Writings. But this is not the only Instance wherein the Authority of the *Greeks* has been falsely alledged by the *Arabians*. However, *Ruellius* confounds it with the *Colutea* of *Theophrastus*; but *Matthiolum* has sufficiently proved his Mistake. And indeed as *Averrhoes* asserts it to be a new Plant, and a Stranger to the Ancients, we may thence infer, that its Use was introduced by the *Arabians*. *Serapio* first made Mention of it, and after him *Mesue*. Among the later *Greeks*, the first Mention of it occurs in *Aetnarius*, who has given an Account of its Virtues.

The Plant is called *Senna Alexandrina, sive foliis acutis*, C. B. P. 397. *Sena*, J. B. 1. 377. *Sena orientalis*, *Tabern. Icon.* 517. It is sown in *Persia*, *Syria* and *Arabia*, from whence it is carried into *Egypt* and to *Alexandria*.

The Leaves of Sena, being chymically treated in the Quantity of four Pounds and four Ounces, yielded fifteen Ounces of alkaline urinous Liquor, with about nine Ounces of acid Liquor, which came promiscuously from the Retort; six Ounces, one Drachm and twelve Grains of thick Oil, and one Drachm of volatile urinous Salt. The black Mass remaining in the Retort weighed eighteen Ounces, seven Drachms and a Half. This being calcined fourteen Hours, continued flaming four Hours, and at last only four Ounces and a Half of grayish brown Ashes were left; from which were got by Lixivation one Ounce and fifty six Grains of mere alkaline Salt.

Four Ounces and five Drachms of the Oil above-mentioned, being rectified by Distillation, gave up three Drachms of liquid Oil, with three Ounces and five Drachms of thick Oil of the Consistence of Butter; and three Ounces, eight Grains, of black Earth were left in the Retort.

From this *Analysis* it appears that Sena contains a twofold Salt, the one ammoniacal, the other tartarous, united by a large Quantity of thick Oil. Hence arises a gummo-resinous Compound, to which its purgative Virtue is owing: For the Extract of Sena made with Water is strongly acrimonious, and easily takes Fire when it is dry.

This Drug has an extraordinary cathartick Virtue, no Medicine being more frequently used as a Purge, or to greater Advantage. Authors have wrote differently concerning its Qualities; as also the Humours which it evacuates. *Actuarius* asserts that it discharges Bile and Phlegm, though he has against him the Authority of *Averrhoes*, who says Phlegm is not purged by this Medicine. *Mesue* says it draws Melancholy and adust Bile from all the Bowels; and *Sylvius*, a Physician of *Paris*, often observed it to purge Water. In this Disagreement of Opinions, *Rolfincius* pronounces that Sena evacuates that Humour which abounds, and is burdensome to Nature. We shall scarce find another Medicine which so effectually carries off corrupted, thick, and constipated Humours, or so powerfully removes old Obstructions. In long and slow Diseases, arising from Foulness, or old Obstructions of the Bowels, it is, says *Fernelius*, a singular Remedy; as in slow and inveterate Fevers, Melancholy, Epilepsy, Scab, Tetter, *Vitiligo*, Leprosy, and in short in all Impurities of the Blood. It often occasions Gripings of the Belly; but this is not to be ascribed to its Flatulency, but to the
Humours,

Humours, which being adhesive, and generally acrimonious, are not to be drawn off without a painful Sensation. However, Physicians try several Means to correct this Quality, whereby it is at least abated, though perhaps not totally destroyed. Some mix it with Substances which strengthen the Stomach and Intestines; as Ginger, Cinnamon, or Spikenard: Some, with such Things as gently relax without griping; as fat Broths, Prunes, Jujubs, Raisins, Violets, Marsh-Mallows, Polypody, &c. and others, with Medicines which discuss Wind by inciding the viscid Humours; of which Sort are Anise, Fennel, Coriander, Salt of Tartar, of Wormwood, or the like. Indeed, the purgative Virtue of Sena depending upon a gummo-resinous Substance which exerts its Operation in a twofold Manner, (*viz.*) by dividing the thick and viscid Humours, and likewise principally by irritating the nervous Fibres of the Intestines to contract themselves; the less this Resin is extended, the more it will adhere to the Fibres, and produce the stronger Irritation; and the more it is extended, the less will be its Adhesion, and the less also its Irritation. Therefore, whatever can extend this resinous Substance, will make it operate with greater gentleness; as a large Quantity of Liquor; alkaline Salts, which have a Property of dividing resinous Bodies; or Oils, which easily dissolve them. Thus, a Tincture of Sena, made in a large Draught of Ptisan or Broth, purges excellently, and with less Uneasiness than in a small Proportion of Water. Mucilaginous and emollient Substances, by involving its resinous Parts, render their Action more gentle; but then, as they weaken the purgative Force of the Medicine, its Effects are not so much to be depended on.

Sena has been observed to be highly prejudicial in those Diseases wherein the Humours are in a State of Effervescence, or the solid Parts inflamed: So that in Hemorrhages, in all Kinds of inflammatory Distempers, and in Affections of the Breast we ought to avoid it. These excepted, there is scarce any Disease in which it may not be conveniently given, provided that the Rules of Art be duly regarded.

Some have started a Controversy concerning the Preference of the Leaves, or Follicles. Among the Ancients, *Mesue*, *Aetnarius* and *Serapio*, and among the Moderns, *Fernelius*, *Lobelius* and *Pena*, prefer the Follicles: But *Monardus*, and most Physicians of this Age, are of the contrary Opinion. Indeed the Follicles are not so griping as the Leaves, but are much weaker in their Operation.

Sena is given either in Substance, Infusion, or Decoction. It is prescribed in Substance or Powder from ℥j. to ℥j. though seldom; because the Dose being too large is inconvenient to take, and likewise occasions greater Uneasiness in working. The Infusion and Decoction are more eligible, in Case too much Heat be not used in preparing them; for *Mesue* observes, that the purgative Virtue of this Drug is easily extracted, and that it evaporates by long boiling. It is ordered in Infusion or Decoction from ℥j. to ℥jss. either alone, or with other Catharticks.

To correct the nauseous Taste of Sena, some direct it with the Leaves of a Plant imported from *Brasile*, called *Iquetaia*, which *M. Marchand*, Fellow of the Royal Academy of Sciences, has discovered to be the *Scrophularia aquatica major*, C. B. P. *The great Water-Figwort*. These Leaves are infused with Sena in hot Water, and the Tincture so obtained is not unpleasant.

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Take

Take the Leaves of Sena cleansed and of the great Water-Figwort \bar{a} zj . Pour upon them ℥ij . of hot Water, and let them stand in Infusion till the Water is cool. A Draught of this may be taken now and then to relax the Belly.

Take of Sena cleared of the Stalks zj . Salt of Wormwood ʒj . Infuse them a Night in ʒvj . of common Water. Let the strained Liquor be taken in the Morning on an empty Stomach, either alone or mixed with Broth.

Take of Sena zj . *Calabrian* Manna ʒiss . Rhubarb cut small and soluble Tartar \bar{a} zj . Pour upon them ʒxij . of a Decoction of Prunes or Raisins, and let them stand six Hours in warm Infusion; then strain the Liquor, and divide it into two Draughts.

Take of oriental Sena zj . *Sal polychrestum* zj . Infuse them in ʒvj . of warm Water six Hours. In the strained Liquor dissolve of the solutive Electuary of Prunes zj . of the Syrup of Peach-Blossoms ʒj . Make a purging Potion to be taken in the Morning, some Broth being drank about two Hours after it.

Take of Sena ʒiij . Manna ʒij . soluble Tartar ʒiss . Coriander-Seed ʒj . Liquorice dried, shaved and bruised, ʒj . To these add a Citron cut into Slices, and pour upon them ℥ij . of boiling Water. Infuse for six Hours and strain the Liquor; whereof a sufficient Quantity is to be taken at several Draughts.

An Extract is prepared from Sena in the same Manner as from Rhubarb. It is prescribed from ʒss . to zj . though rarely; for it purges but little, and gripes more violently than the Infusion.

ARTIC. IV. Of DITTANY of CRETE.

Diētammum Creticum et Diētamnus Cretica, Offic. Δίηλαμου, *Theophrast.* Δίηλαμος, *Diosc.* Δίηλαμον, *Gal.* *Diētammum*, *Plin.* *Diētamnus*, *Virgilii.* These Names are assigned to some Leaves which are usually found in the Shops. They are somewhat roundish, about an Inch long, inclining to a green Colour, covered with a thick white Down, and frequently grow upon small Stalks, on the Tops of which are long scaly depending Heads of a purplish Colour. The Leaves have a fragrant, agreeable Smell, and acrid, aromatick, hot Taste. They are brought from the Island of *Candy*, which was anciently called *Crete*. They ought to be chosen fresh, sound, whole, free from Mouldiness, covered with Down, and of an hot Taste and good Smell.

Dioscorides describes three *Species* of Dittany. 1. Δίηλαμος κρείκη, *Diētammum Creticum*, seu γλήκων ἀγρία, *Pulegium Sylvestre*, *Quorumd.* 2. ψευδοδίηλαμος, *Diētammum spurium.* 3. Δίηλαμος κρείκη ἕτερη, *Diētammum Cretense alterum, foliis Sisymbrii.* These three *Species* are likewise mentioned by *Pliny*. The first is that which occurs in the Shops, notwithstanding they assert it has neither Flower nor Fruit. But we must believe, that *Dioscorides* was either led into this Mistake by others, or, as *Matthiolus* thinks, that his Words have been altered; because *Theophrastus* supposes it to bear Fruit, *l. ix. Hist. c. 16.* where he says the Leaves only are used, and neither the Branches, nor Fruit. *Damocrates* also in *Galen*, *l. 5. κατὰ γένη*, speaks of Dittany as bearing Flowers. Besides, the Poet *Virgil* expressly mentions both the Flower and the Stalk, *Æn. l. 12.*

Diētammum genitrix Cretæâ carpit ab Idâ,

*Puberibus caulem foliis, et flore comantem
Purpureo.*

Neither is *Pliny* to be regarded, who following *Dioscorides* in his Mistake tells us, *l. xxv. c. 53.* that Dittany has no Flower, nor Seed, nor Stalk: Wherein he seems to contradict himself, having said above from *Theophrastus*, that the Leaves only are used. And accordingly the Leaves are commonly brought alone, the flowery Tops being very seldom imported with them.

The Plant is called *Origanum Creticum latifolium, tomentosum, seu Dittamnus Creticus, Inst. R. H. 199. Dittamnus Creticus, C. B. P. 222.* It grows wild in the Clefts of Rocks in *Candy*, and *Greece*.

It contains a large Quantity of essential Oil, joined with a volatile Salt, as we may conjecture from its Smell and Taste.

Among the Ancients it is greatly commended for promoting the Exclusion of a dead *Fætus*, expelling the *Secundine*, provoking the *Menses*, curing Wounds, and against Poisons, and venomous Bites and Stings. *Hippocrates*, as *Galen* relates, among the Remedies he was acquainted with for helping forward the After-Birth, places Dittany in the first Rank. There goes an old Fable, that when Goats in *Candy* are wounded, they make the Dart fall from the Wound by browsing upon this Plant.

It is given in Powder from ʒss. to ʒj. and infused in Wine from ʒj. to ʒʒss. to forward Delivery, and to expel a *Mola* or false Conception, a dead *Fætus*, or the After-Birth; as also in malignant Fevers, and against the Bites or Stings of poisonous Animals.

ARTIC. V. Of SYRIAN MARUM.

Marum Syriacum, Off. The Leaves of Syrian Marum are of a pale green Colour above and hoary underneath, in Shape resembling the Point of a Spear, or like the Leaves of Thyme, something less than those of common Marum. They have a bitter-acrid Taste, and a strong, quick, pungent, and agreeably aromack Smell, especially when rubbed betwixt the Fingers, whereby they occasion Sneezing. The Flowers, which are sometimes found in the Shops with the Leaves, are entirely like the Flowers of *Chamædry*s or Germander, whence *Tournefort* reckons this Plant a *Species* of it. They are monopetalous, of a purple Colour, and labiated: In the Place of the superior Lip are the *Stamina*, and the inferior Lip is divided into five Sections, forming a broad Cavity in its Middle like a Spoon.

The Plant is called *Chamædry*s *maritima*, *incana*, *frutescens*, *foliis lanceolatis*, *Inst. R. H.* 205. *Marum Cortusi*, *J. B.* 3. 242. *J. Raii H.* 527. *Tragoriganum latifolium*, *C. B. P.* *Tragoriganum latifolium*, *sive Marum Cortusi Matthiolo*, *Parkins.* *Tragoriganum Lobelii Gerard.* It grows wild in Syria and Candy, and very common in *Porte-Croz*, one of the French Islands which are called *les Iles d'Hières*.

In a chymical Analysis, from two Pounds and three Ounces of the Leaves and flowery Tops of Marum distilled from a Retort, were drawn, one Pound, eight Ounces, one Drachm and thirty six Grains of clear Liquor, though somewhat reddish towards the End, of a pleasant aromack Smell and Taste, at first obscurely acid, afterwards by Degrees more manifestly acid, and more and more austere; six Drachms, thirty six Grains of empy-

reumattick reddish Liquor, of a Taste somewhat acrid and pungent, very acid and austere, and also saline; one Ounce and one Drachm of red Liquor, both acid and alkaline urinous, and impregnated with a volatile urinous Salt; one Ounce and four Drachms of Oil, as well thin or essential, as thick, of the Consistence of an Extract. The black Residue weighed four Ounces: Which, being perfectly calcined, left one Ounce, one Drachm and twelve Grains of whitish Ashes; from which were got, by Lixiviation, three Drachms and twenty four Grains of fixt Salt merely alkaline. The Loss of Parts in Distillation was three Ounces and three Drachms: In Calcination, two Ounces, six Drachms and sixty Grains.

The Leaves of Marum turn blue Paper red. Being distilled when they are dry with a large Proportion of Water, like other aromattick Plants, they yield a subtile and extremely penetrating essential Oil. They contain an essential tartarous Salt; and besides, a copious, fine, volatile Acid, and a moderate Portion of alkaline urinous Salt, joined with a large Quantity of acrid aromattick essential Oil. Whence arises a Compound not unlike a Mixture consisting of a dulcified acid Spirit and a volatile urinous aromattick Spirit.

The Smell of Marum is so wonderfully agreeable to Cats, that when it is planted in Gardens it allures them from all Quarters of the Neighbourhood to the Place where it grows, and renders them, as it were, enraged, and actuated by a venereal Fury; insomuch that they tear and knaw it with their Mouths, roll themselves about upon it, sllobbering it all over with their Spittle, and sometimes polluting it with their Seed*. Upon this Account it

* Mr. Ray, in his *Catalog. Cantab.* observes that the *Mentha felina*, or Catmint, has much the same surprizing Influence upon these Creatures.

is very difficult to nurse it up in Gardens, unless an Iron-Cage be put over it as a Defence.

Marum is seldom used in the Shops ; though it is by no Means to be ranked in the lowest Class of aromattick Plants. *Mindererus*, in his *Aloedarium Marocastinum*, and *Wedelius*, have each of them honoured it with a particular Differtation, and have highly extolled it. *Wedelius* attributes to it a Virtue of inciding, attenuating, opening and digesting, of correcting the Lentor of Phlegm, and an inert State of the Bile, of increasing the Motion of the Blood and Spirits, and a peculiar Efficacy in curing cold and moist Affections. He reckons it an extraordinary Diuretick, a powerful Diaphoretick and Carminative, one of the best of Antiscorbuticks in a cold Scurvy, a strong Emmenagogue, and a most excellent Cephalick, Pectoral, Antiasthmatick, Cardiack and Stomachick ; that it is likewise good in Diseases of the Liver, Spleen, Womb, and Nerves ; as also in Impotency, and Disorders from Worms : In a Word, he esteems it a true *Polychrestum*. But perhaps this celebrated Physician was too easily induced by its exquisite Smell to be over prolix in his Commendations, and to ascribe to it the whole Catalogue of Virtues which are found in all other Aromaticks. We must therefore wait till further Experience shall demonstrate its Properties. *Etmuller* says it is of Service in Headaches and nervous Affections, and that it is an excellent Remedy in Apoplexies and Catarrhs. The Leaves are prescribed in Powder to ʒfs.

Externally the Powder is reckoned an extraordinary Errhine, either alone, or mixed with Tobacco. It is said to purge and strengthen the Brain, and to restore Loss of Smelling.

John Quincy, a Physician of *England*, in his *complete English Dispensatory*, prepares from the Leaves

of Marum a *Sal volatile oleosum*, which is gratefully aromatick, and a most excellent Cephalick. They are an Ingredient in *Venice-Treacle*. Their essential Oil, which is also cephalick, uterine, and antiparalytick, is greatly coveted by the *Dutch*.

ARTIC. VI. Of BALAUSTINES.

Balaustia, *Off.* Βαλαυσία, *Diosc.* These are the large Flowers of the wild Pomegranate-Tree. They are composed of a close Thrum of purplish Leaves, and a *Calyx*, which is not oblong, as in the Flowers of the cultivated Pomegranate-Tree, but flat and broad, of a yellowish purple Colour, with an hard, woody Texture, and divided into many Sections. The *Calyx* is used in Medicines indiscriminately with the Flower.

The Tree from which the officinal Balaustines are got, is distinguished *Punica flore pleno majore*, J. R. H. 636. *Malus Punica flore pleno*, Hort. Reg. Paris. *Balaustia Hispanica*, J. B. 1. 82. *Balaustium*, Tabern. Icon. 1033. *Balaustia flore pleno majore*, C. B. P. 438. *Malus Punica Sylvestris major, sive Balaustium majus*, Parkinson. J. Raii Hist. 1463. It grows in Spain, Italy, Provence, and other Countries.

Balaustines are drying, incrassating, and astringent, yet not quite so much as the Bark of the Pomegranate. Their Use is very common in all Kinds of Fluxes (*viz.*) in Diarrhœas, Dysenteries, uterine Fluxes, and Hemorrhages; as also against Laxness of the Gums, Ruptures, &c. They are prescribed in Powder to ʒj. and to ʒss. in Decoction, and are used in Electuaries, Decoctions, Draughts, or astringent Injections and Lotions; and likewise in Collyriums to preserve the Eyes in the Small Pox, or Measles.

Take

Take of Balaustines powdered ℥ss. *Armenian* Bole, sealed Earth, red Coral and *Japan* Earth, ā zij. Syrup of Quinces, or dried Roses, q. f. Mix and make an Electuary, to be given in Fluxes of the Belly, after due Preparation. The Dose is zj. two or three Times a Day.

Take of Balaustines zij. Pomegranate-Bark, Dragon's Blood, prepared Blood-Stone, and crystalline Allum, ā zj. Conserve of Roses ℥ss. Syrup of Comfrey q. f. Mix and make an Electuary. The Dose is zj. in Fluxes of the Belly, and Hemorrhages.

Take of Plantain-Leaves M. j. Balaustines and red Roses ā M. fs. Boil them in ℔ij. of Smith's Water to ℔j. in the strained Decoction dissolve of Roch Alum ℥ss. Syrup of Pomegranates, or Barberries, ℥j. This may be used either by Way of Injection, or as a Gargarism.

Take of Balaustines M. fs. Pomegranate Bark bruised zij. Infuse them warm for some Hours in the distilled Waters of Roses and Plantain ā ℥vj. then boil them gently, and filtre the Decoction through Cap-Paper; with which mix well in a Mortar of Saffron powdered very fine gr. vj. Camphore gr. ij. Make a Collyrium, and foment the Eyes with it now and then in the Small Pox.

ARTIC. VII. Of STOECHAS.

Stæchas, Stæchas Arabica, et Flores Stæchados, Off. Στίχας, *Diosc.* Στοιχας, *Gal.* By these Names are denoted the dry flowery Tops of a Plant. They are oblong, scaly, and purplish, of a subacid, bitterish Taste, and agreeable fragrant Smell. They are made choice of fresh, odorous, and bitterish.

The Plant is called *Stæchas purpurea*, C. B. P. 216. *Stæchas Arabica vulgo dicta*, J. B. 3. 277. *Stæchas brevioribus ligulis*, Clus. Hist. 344. It grows plentifully in *Languedoc*, and in those Islands on the Coast of *Provence* which the *French* call *les Isles d'Hyères*.

A considerable Quantity of aromattick essential Oil is obtained from *Stæchas* by Distillation, to which its Smell and Virtues are owing.

It is chiefly used in cold Affections of the Head and Nerves : It moreover provokes Urine and the *Menses*, and resists Poisons. *Mesue* asserts that the Plant purges Phlegm and black Bile, though very slowly and weakly ; but by the Moderns it is not reckoned among Purgatives. An essential Oil is drawn from these flowery Tops, as from the Tops of Lavender, and its Virtues are the same ; but it is seldom used in Medicines.

C H A P. VI.

Of FRUITS and SEEDS.

ARTIC. I. Of RAISINS and CURRANTS.

THESSE are the ripe Fruits of manured Vines which have been dried in the Sun. Sometimes they are dried in an Oven ; but by this Management they are rendered more acid, and are rarely used in the Shops.

We are then to understand by the *Uva passa Off.* and the *σαφίς* of *Dioscorides*, all cultivated Grapes that have suffered a due Insolation. The ancient *Greeks* distinguished two Sorts. The one consisted of Grapes, which having the Foot-Stalks of their Bunches

Bunches cut half through, or bound tight about with Thread, were left to hang a long Time upon the Tree to dry in the Sun. These they called σαφυλαὶ παλαιοῦσαι. The Grapes of the other Sort were taken off the Tree, and being afterwards exposed to the Heat of the Sun were called σαφυλαὶ ὀηλοπευθειῶσαι. But as these different Methods could produce no essential Difference in the Grapes, we shall here take no further Notice of them.

In the Shops at present we distinguish three Sorts of insolated Grapes (*viz.*) 1. *Passulæ Maximæ, seu Damascenæ*; Raisins of *Damascus*. 2. *Passulæ minores, seu Vulgares nostrates*; Raisins of *Provence*. 3. *Passulæ minimæ, seu Corinthiacæ*; *Corinthian* Raisins or Currants.

1. *Uvæ passæ maximæ, seu passulæ Damascenæ, Off. Zibib. Arab. Zibebæ, quorumd.* These are dried Grapes, full of Wrinkles, flat, about an Inch long and broad, of a yellowish brown Colour, half transparent, fleshy, scattered over with a saccharine essential Salt, containing few Stones, and of a sweet, but not very agreeable, Taste. When they are over and above fat or clammy, so as to stick to the Fingers, covered with Meal, rotten or void of Juice, they are to be rejected.

The Plant is the *Vitis Damascena, Hort. Reg. Paris.* It differs from other Species of Vines chiefly in bearing Grapes of a larger Size, in Figure resembling a *Spanish* Olive or Prune.

2. *Uvæ passæ minores, seu Vulgares, Off. Passulæ Massilioticæ, quorumd.* These are Grapes dried in the Sun like the former, but less, having an agreeable sweet Taste, as if they were preserved in Sugar. They are often substituted for the Raisins of *Damascus*, as differing not greatly from them. They are cured in *Provence* and *Languedoc*, but are not always the Produce of the same Species of Vine;

for some take the Fruit of the *Vitis Apiana*, C. B. P. 298. which is commonly called the *Muscadine* Grape; some chuse the Grape of *Picardy*; some the *Aujubini*, as they are termed; and some give the Preference to other Sorts.

The People of *Montpelier* cure their Raisins thus. They tie the Bunches two and two together with Thread, and having cut away the bad Grapes with Sciffars, dip them over in hot Lye, to which is added a small Quantity of Oil, till they grow flaccid and begin to wrinkle. After this they put them upon long Poles to dry for three or four Days, and then lay them in the Sun.

In southern Countries, by bruising Raisins in hot Water, and letting them stand to macerate and ferment, they make a good agreeable Wine of a strong Body, from which they draw, by Distillation, both Brandy and strong Spirit of Wine.

3. *Uvæ passæ minimæ*, *Passulæ Corinthiacæ*, *Off.* These also are dried Grapes, of a dark Colour with a Cast of Purple, about the Bigness of Garden-Currants or Elder-Berries, without Stones, and of a sweet Taste with a gentle and pleasant Acidity. They ought to be fresh and well kept. When they are covered with Slime, or moistened with Honey, of a mouldy Smell, too dry, or rotten, they are not fit for Use. They are called *Passulæ Corinthiacæ*, because they were formerly much cultivated about *Corinth*; where they are not to be met with at present, being perhaps neglected by the Inhabitants.

The Vine, upon which these grow, is like others; the Leaves only are larger, thicker, and not divided into so many *Laciniæ* or Sections, which are also more obtuse; their Colour on the under Side is hoary, and the Fruit is much smaller, being scarce above the Size of Garden-Currants, and including

cluding no Stones. It is cultivated in *Zante*, *Cephalonia*, and other Islands subject to the States of *Venice*. There are some Trees which bear white Grapes, but such only, as produce black, are usually propagated.

In the Month of *August*, when the Grapes are ripe, they are gathered, and spread about thin upon the Ground to dry in the Sun; and then are carefully cleansed and put up into Ware-houses, where an Opening is left in the Roof of the Building to receive them. When the Place is quite full up to the Top, they gradually sink down lower by their own Weight, and in a short Time are clotted so together, that pointed Tools of Iron are employed to dig them out. After this, when they are put into Buts for Exportation, a Man gets into the Vessel barefoot, and as the Currants are thrown in, one Parcel after another, he tramples upon them, pressing them always into a lesser Space; in order not only, that the Vessel may contain more, but also, that the Currants, by thus excluding the Air, may keep longer without spoiling. The Consumption of this Commodity is very great; for besides what is spent in the Shops for Physick, a much larger Quantity is taken off for the Uses of the Kitchen.

Raisins and Currants contain a sweet melleous Juice, less viscid than that of Jujubes, or Sebestens, but more nutritive. However, as they readily ferment, no wonder that too large a Quantity of them should disorder the Belly; for they render the Bile more fluid and active like other sweet Substances, which are generally said to change into Bile. Moreover they divide and attenuate all the Juices in the Body, removing their Viscidity and disposing crude Humours to Concoction. They are commended for relaxing the Belly, and being serviceable

able to the Breast, Lungs, Wind-pipe, Kidneys, Bladder, and Liver. In Roughness or Dryness of the Jaws, they have a softening Efficacy, and are conducive in all Diseases of the Breast and Lungs, by promoting the Concoction and easy Expectoration of Phlegm. But to answer these Intentions Raisins ought to be stoned; for otherwise they have an astringent Virtue, are helpful in bad Digestion, and proper to eat in a Dysentery, Looseness, or hepatick Flux.

In inflammatory Fevers, or an hot State of the Bile, both Raisins and Currants ought to be avoided; for in these Disorders they increase the Effervescence of the Humours. Being too frequently eaten they are prejudicial to the Gums, as they vellicate and dispose them to Putrefaction. They are often used in pectoral Ptisans to soften the Acrimony of the Humours, and in Decoctions to correct the disagreeable Taste of other Medicines. The usual Quantity in Prescription is one Ounce to every Pint of Liquor.

Take Raisins stoned and cut small ℥iv. Boil in ℔iv. of Water to ℔iij. and keep the strained Liquor for a pectoral Decoction.

Take of this Decoction and Lime-Water ā. p. æ. Mix and give ℥vi. twice or thrice a Day. This is an efficacious Remedy in a Catarrh.

Take of Sarsaparil ℥vi. Currants ℥viiij. Boil in ℔xij. of Water till a fourth Part is evaporated. In the strained Decoction slake ℔ss. of Quick-Lime, and when it has stood to settle decant the clear Liquor. The Dose is ℥iij. three or four Times a Day in Catarrhs, Ulcers of the Lungs, and scrophulous Affections.

Take Raisins stoned ℥ij. Liquorice shaved and bruised zi. boil in ℔iij. to ℔ij. adding towards
the

the End ziiij. of Sena. Let them infuse together warm for one or two Hours; then strain and give a Glassful of the Liquor every now and then. This is a gentle purging Medicine and not unpleasant to take *.

ARTIC. II. Of FIGS.

Ficus passæ, seu Caricæ, Off. Ἰσχαδὲς et Καρίνας, Græcor. These are ripe Figs dried in the Sun. In the Shops we meet with three Sorts (viz.) 1. The large yellow Figs, which are called *Ficus pingues*. 2. The large Violet-Figs. 3. The small Figs, which are brought from *Marseilles*, and are much sweeter than the others. The best are soft, and gentle in the handling, heavy, with a thin soft coat, full of Juice and yellow Seed, and tasting like Honey. On the contrary, when they are hard,

* We must here observe, that instead of the Raisins above-mentioned, in *England*, we make use of two Sorts which are imported from *Spain* (viz.) the *Uvæ passæ majores*, or Raisins of the Sun, and the *Uvæ passæ Malacenses*, or *Malaga* Raisins. The first are dried upon the Tree with the Sun, in the same Manner as the *σαφυλαὶ ἀληθεῖσαι* of the ancient *Greeks*, and the last are cured like those of *Montpelier*. These in general have the same Virtues with the Raisins we have been speaking of; yet in particular Circumstances one Sort may be preferable to the other; as Dr. *Quincy* judiciously remarks in his *Dispensatory*, p. 555. “As to Raisins, says he, take this Rule in general, that in all cathartick or detergent Compositions, those which the Grocers sell by the Name of *Raisins of the Sun*, are most proper; because they are sharp, and attenuating: But in all Pectorals and Vulneraries, the *Malaga* Raisins are much to be preferred; they being more fat, soft and emollient. Which by the Way is a Difference very few attend to, to the great Detriment of many a good Prescription.”

The Currants which are taken Notice of above, are the same that are used in our Shops by the Name of *Uvæ passæ minores, seu passulæ Corinthiacæ*.

full of Worms, of a strong Smell, or black, they are bad.

The Tree is the *Ficus Sativa*, *Inst.* R. H. 662. *Ficus Communis*, C. B. P. 457. It is cultivated in *Provence, Italy, Spain*, and other Countries *.

Figs, both fresh and dry, are used much for Food, especially in the more southern Climates. When they are fresh and ripe they are of easy Digestion in the Stomach, being sooner concocted than any other horary Fruit. *Galen* tells us, that from twenty eight Years of Age, in order to preserve his Health, he always abstained from all Summer-fruits, except Grapes and Figs perfectly ripe. This Fruit is moderately nutritive, mollifies the Belly, and is serviceable to the Lungs, Kidneys, and Bladder, having an absterfive Quality, and removing gravelly Concretions. The Blood, however, which is produced of Figs, is not the most laudable; and being too frequently used they occasion Flatulencies, hurt the Liver and Spleen, and render the Flesh lax, turgid, and flabby. Persons who are liable to Obstructions of the Bowels, or whose Belly is over moist, ought to avoid using them. It is always proper after eating them, to drink plentifully of some diluting Liquor; otherwise by stopping in the Stomach or Intestines, and corrupting, they may be the Cause of putrid Fevers.

The Moderns oftener make use of Figs in Medicines when they are dry. Physicians in general allow them to be good in Asthmas, Coughs, and other Disorders of the Breast and Lungs: For by Virtue of the melleous Juice, wherewith they abound, they soften and relax the Belly, and stimu-

* The Figs which are used with us in Medicines come chiefly from *Spain* and *Portugal*, where they are cured by dipping them first in scalding hot Lye, and afterwards drying them in the Sun.

late the Intestines to Excretion ; especially when they are taken before Meals. They concoct, ripen, and deterge thick Humours, which stuff up the Breast, cleanse the Kidneys of Gravel, assuage Pains in the Bladder, and are reckoned to facilitate Delivery, being eaten for a few Days before Labour, and are often taken for this Purpose roasted. They provoke Sweat and forward the Eruption of Pustules ; for which Reason many Physicians prescribe them in the Measles and Small Pox. Some commend a Decoction of them to be drank plentifully for the Pains in the Plumbers Colick ; and being frequently held or gargled in the Mouth, it brings all Tumours and Abscesses of the Jaws and neighbouring Parts to a speedy and easy Suppuration. *Galen* ascribes to them a Virtue of resisting deadly Poisons ; and it was of these that *Mithridates* made his famous Antidote, which he used to take as a Preservative against Poison. This Composition consisted of twenty Leaves of Rue, two dry Figs, and as many dry Wall-Nuts, pounded together with some Bay-Salt.

Galen, *P. Ægineta*, *Oribasius*, and likewise some modern Writers, are fully persuaded that the frequent Use of Figs produces Lice. Yet *Athenæus*, l. 2. *Deipnosoph.* observes that *Anchimolus* and *Moschus*, both Philosophers and Rhetoricians of *Elis*, were not subject to this Inconvenience, notwithstanding their common Diet all their Life had been only Figs and Water. He adds, however, that their Sweat was of so rank a Smell, that all People avoided coming near them in the publick Baths : Whence *Simon Paulli* advises those who have a foetid Smell under the Arm-pits to abstain from Figs. They ferment and rarify the Bile like Honey, Sugar, and other sweet Things ; and are therefore very improper in bilious Temperaments, in Fevers arising

from Bile, and Inflammations of the Spleen and Liver. They are prescribed in pectoral Decoctions to v. or vi. in Number to every Pint of Liquor. In preparing Decoctions of Figs and such like Substances, we must remember not to overload them with the Ingredients, lest becoming thick and roapy, they should oppress the Stomach, and not easily pass off by Urine.

Take dry Liquorice, scraped and bruised, ʒj. Figs N^o. vi. Boil in ℥j. of Water to a Consumption of Half. Strain and give a Spoonful of the Liquor every now and then in a troublesome Cough, to soften the Acrimony of the Humours and to promote Expectoration.

Take of the Leaves of Hyssop M. j. Figs N^o. vi. Boil in ℥ij. of clear Water to ℥j. Give the strained Decoction warm in the Fit of an Asthma.

Take of the Shavings of Hartshorn ʒfs. Figs N^o. vi. Seeds of Columbine and Fennel ana ʒij. Make a Decoction in q. s. of Water; of which let the Patient take a Glassful now and then warm, to forward the Eruption of the Measles and Small Pox.

Take fat Figs N^o. xij. Cut them small and macerate for two or three Hours in ℥j. of hot Milk; then boil them gently, and keep the strained Liquor for a Gargle in Inflammations of the Jaws and Tonfils.

Figs externally in the Form of a Cataplasim, roasted or boiled in Milk, either discuss Tumours or bring them to Concoction. They likewise ripen and break Imposthumations; and being bruised, together with some Leaven and Salt, make pestilential Buboes suppurate in a little Time. When
roasted

roasted they ripen Tubercles of the Gums; and speedily allay Pains of the Hemorrhoids, being applied to the Part affected.

ARTIC. III. Of COLOCYNTH.

Colocynthis et pulpa Colocynthis, Off. κολοκυνθίς, Diosc. et Gal. σικυώνη et σικυώνης σπόγγου, Hippoc. Haanthal, Arab. Kandel, Serapion. Fel Terræ et nex *Plantarum quorund.* Colocynth (called also Colocynthida, Bitter Apple, or Bitter Gourd) is a Fruit of a spherical Figure about the Bigness of one's Fist or an Orange, whereof the outer yellowish Bark being cut away, the dry Pulp or Pith only is brought to us; which is spongy, or, as it were, full of Cells composed of small membranaceous Leaves, of a white Colour, very light, and of an extremely bitter nauseous Taste, offending the Jaws by its Acrimony, and containing small, flattish, hard, white or reddish Seeds, about the Size of Cucumber Seed, but rounder, fuller, and harder. It is brought from *Aleppo*; and the best is white, dry, light, smooth, and intensely bitter.

The Plant is called *Colocynthis fructu rotundo minor*, C. B. P. 313. It grows in the Islands of the *Archipelago*, and upon the Sea-Coasts in the *Levant*.

In a chymical Analysis, from two Pounds and seven Ounces of the Pulp of Colocynth without the Seeds, were obtained nine Ounces, seven Drachms and a Half of clear, insipid, and inodorous Phlegm, yet containing some Portion of alkaline urinous Salt, forasmuch as it made the Solution of corrosive Sublimate foul and a little milky. Afterwards three Ounces, two Drachms and a Half of reddish empyreumatick Liquor, reckoning both acid, and urinous; with one Ounce, six Drachms and a Half

of urinous Spirit; and three Ounces and twelve Grains of foetid, bitter, acrid Oil.

The black Mass left in the Retort, which was like a Coal, and quite void of Taste, weighed ten Ounces, four Drachms and a Half; and being calcined in a reverberatory Fire eight Hours, there remained only four Ounces, two Drachms and a Half. From these, by Lixiviation, were got three Drachms and sixty Grains of caustick Salt, purely alkaline, which in the Solution of corrosive Sublimate precipitated a Powder of a deep Saffron Colour. The Loss of Parts in Distillation was about twelve Ounces and one Drachm; and in Calcination six Ounces and two Drachms.

The Principles afforded in this Analysis, when they are mixed together, constitute a resino-gum-mous Compound; that is, the alkaline Salt, which abounds in Colocynth, is joined with some Portion of acrid Oil into the Consistence of a Gum, whilst another middling Portion of Oil, with a little acid Salt, forms a Resin; and from these, condensed with Earth, arises an acrid resino-gum-mous Compound, which *Mon. Boulduc* confirms by several Experiments, related in the *Memoirs* of the *Royal Academy of Sciences* for the Year 1701.

From eight Ounces of the Pulp of Colocynth, cleared of the Seeds, he obtained near three Ounces of a gummous Extract; and from the same Weight, half an Ounce of a resinous Extract with Spirit of Wine. In the next Place, he macerated some of the Pulp a long Time in hot Water, whereby its gummous Substance was separated, but could draw no Tincture from it afterwards; whereas, after he had macerated some Pulp in Spirit of Wine, and so taken out its resinous Parts, he got by the Means of Water two Ounces of a gummous Extract. A Decoction of the Pulp, in Distillation, yielded a clear

clear Water, which had neither Smell nor Taste, nor the least Effect as a Cathartick: But four Ounces of it being infused in six Pints of Must, and set to ferment twelve Days, the fermented Liquor, in Distillation, gave up first eight Ounces of spirituous Liquor, smelling pretty strong, and very bitter to the Taste; then some Portions of a Fluid which was less bitter; and afterwards, a mere insipid Phlegm. In the last Place, the Liquor which was left behind in the Alembick, being well strained, and evaporated to a solid Consistence, there remained a gummous Extract in the Quantity of two Ounces and a Half. But this Extract was not produced from the Colocynth alone, but in a large Proportion from the Grape-Juice.

One Ounce of the spirituous Liquor, being given to a Man of a strong Habit of Body, occasioned nauseous and colick Pains without any subsequent Evacuation; though two Ounces wrought very powerfully, but with much griping. Ten Grains of the Extract operated very well, without any Violence or Corrosion of the Intestines. The resinous Extract abovementioned purges little, but causes grievous Pains of the Belly. The gummous Extract in its Operation is more efficacious and gentle, yet rougher than the Extract of the fermented Pulp.

Lastly, if we boil one Pound of the Pulp of Colocynth, without the Seeds, for six or eight Hours in twelve Pints of Spring-Water, and strain off the Liquor with a strong Expression; then boil the Remainder for twelve Hours in the same Quantity of Water, and strain; and so a third Time for fourteen Hours in eight Pints of Water, straining as before, the *Fæces* remaining at last, will be scarce a Quarter of a Pound. These Decoctions mixed all together, and evaporated to Half, after having

stood to cool, will thicken into a mucilaginous Mass, like Glue; which by a further Evaporation becomes a solid Extract. This may be moistened with some aromattick essential Oil, and put by as the true and much the best Extract of Colocynth, being a gentle Cathartick from gr. iv. to xv.

Upon the whole we may conclude, that the Parts in this Drug, to which its purgative Virtue is owing, are of two Kinds (*viz.*) oily Parts, and acrid Saline. And these Principles are found, not only in Colocynth, but in other strong Catharticks, such as Tobacco, Hellebore, &c. these Substances abounding with an Oil, which is extremely acrid, and produces the most violent Irritation of the Nerves. Thus, for Instance, the least Drop of the Oil of Tobacco, being let fall into a Wound in an Animal, Convulsions of the whole Body immediately follow, and the Animal very soon expires. Neither is this acrid Oil, which irritates the Nerves, contained only in the stronger Catharticks, but a great Number of bitter Vegetables are also found to be injurious to the Nerves; in some Animals, and in Birds especially, bringing on Convulsions and Death, as appears from the Observations of *Wepfler*, in his Treatise *De Cicutâ Aquaticâ*: And the Bitterness of these Compounds depends chiefly upon an acrid Oil, as is evident from a Resolution of them into their Principles.

Now to these oily Parts is owing, in a special Manner, the Action of the rougher Purgatives; for by these the nervous Membranes of the Intestines, and the Nerves of the other Bowels, are forcibly vellicated and shook; whence all the Glands of those Parts, being strongly compressed, squeeze out their Contents, and push them forward to the Intestines. To this End likewise, the other Principle which is found in purging Medicines, is con-
 ductive

duce in no small Degree; that is, their acrid saline Particles, both fixt and volatile: For these, entering the Mouths of the Vessels, and circulating through them, are mingled with the Juices, which they dissolve and melt down, so as to render the whole Mass of Blood more fluid. Hence a more copious Afflux of Serum is derived from every Part of the Body to the Intestines, which at the same Time are stimulated by the oily Particles. And this is the Reason why strong Catharticks provoke an Evacuation so plentifully by Stool.

But these oily Parts being condensated in a large Quantity by an acid Salt, into a resinous Concrete, and expanded upon the nervous Membranes, the Irritation they produce is too great; whence are excited Gripings of the Guts, or spasmodick Twitchings, succeeded by very sparing Discharges of a viscid Matter by Stool, and sometimes none at all. On the contrary, the acrid Salts, constituting the greater Part of the gummous Concrete in Combination with a few diluted oily Particles, do not irritate the nervous Coats, so much as they mingle with the Humours, and dissolve them. However, as some Assistance from the resinous Parts is necessary to stimulate the Intestines to throw off the Humours which have been dissolved, it is therefore that purging Medicines exert their Action more effectually, when their Gum and Resin are together, than when either the one or the other of them are given in a separate State.

Moreover, these bitter oily Parts, which are found in great Quantity in Colocynth, and are so highly offensive to the Nerves, whether they be condensated into a Resin by acid Salts, or by acrid Salts expanded into a Gum, or whether they be separated from both these Kinds of Salts by Distillation, or by the Means of Fermentation subtilized

and changed into an ethereal Spirit; they still retain the peculiar Nature which belongs to them, that is, their Bitterness and Property of irritating the Nerves, as appears from what has been above observed.

The Use of Colocynth in Medicine is as ancient as the Art of Physic, it being well known to *Hippocrates*, *Dioscorides*, *Galen*, *Pliny*, and in fine both to the *Greeks* and *Arabians*. It is a strong and violent Cathartick. It is commended by all Physicians for evacuating thick tough Humours, especially such as are pituitous, which they reckon that it draws from the remotest Parts, and the minutest Recesses of the Body; insomuch that *P. Ægineta* says, it purges the Nerves more than the Blood. It is greatly extolled in old and stubborn Distempers, when Agarick and Turpeth have proved ineffectual; as in Affections of the Nerves, Obstructions of the Bowels, Head-Ache, inveterate Hemicrania, Apoplexy, Epilepsy, Giddiness, Asthma, Dyspnæa, cold Disorders of the Joints, Sciatick Pains, flatulent Colick, Dropsy, Leprosy, Scab; and in short, says *C. Hoffman*, wherever an obstinate Disease requires a churlish Remedy. And he adds, after *Massari*, that we seldom cure some of the worst Diseases, because we never give over trifling with Lenitives. Besides its purgative Virtue, Physicians seem to allow it a certain specifick and merely alterative Quality: For *Scribonius Largus* commends it much for provoking the *Menses*, removing Pains of the Loins, and curing Epilepsies; and *Helmont* tells us it is excellent in chronical Diseases on Account of its resolving Property.

Physicians likewise agree that Colocynth has a deleterious, or, at least, a very dangerous Quality, whereby, it greatly disorders the Stomach, Bowels, and the whole Body; is hurtful to the
Nerves,

Nerves, sometimes vellicating them with too much Violence ; opens the Veins, bringing away Blood in the Stools, and corrodes the Intestines with grievous Pains of the Belly. Hence some would persuade us to banish it entirely from the Shops, as a most pernicious Drug : But from these *Simon Paulli* dissents, and accuses them of being overtimorous ; because (says he) many eminent Physicians, following the Practice of the Ancients, have used it with good Success in stubborn Cases. And indeed strong Catharticks like this are most powerful Remedies ; but provided always, that they be given in a proper Time and Manner. Wherefore *Symphorianus Campegius* advises young Physicians not to meddle with Colocynth, permitting the Use of it only to older Practitioners. Both the ancient and modern *Greeks*, as well as the *Arabians*, have tried several Ways to correct it ; as by rubbing the Pulp in a Mortar to an *Alcohol* or extremely fine Powder ; or by mixing it with Gum Tragacanth, Arabick, Mastich, and other glutinous and astringent Substances. But *Dodonæus* rejects these Methods, as prejudicial ; who supposes Colocynth may be corrected by joining other Purgatives with it. Some to moderate its Force make Choice of acid Liquors ; some alkaline Salts, Fermentation, or Putrefaction : Some again make an Extract of it with Spirit of Wine, and others with Water. But after all, since this Drug is given not only to promote a gentle Evacuation, but oftentimes to work powerfully, those Preparations which weaken too much its cathartick Force are altogether useles, and ought therefore to be rejected ; and such Corrections only, in my Opinion, are to be received, as are capable of extending its Substance ; lest, the grosser Particles, adhering to the Membranes of the Intestines, should too violently irritate, inflame,

or corrode the Parts. Thus, if your Intention be to purge strongly, give the Pulp well divided by rubbing it in a Mortar, as it is commonly used in the Form of Troches; and it is evident from long Experience that it is entirely free from Danger, when given seasonably and in a proper Dose. It is likewise often an Ingredient with other Purgatives in a small Proportion, to act as a *Stimulus* only with the rest. If a Purge be required that may operate with greater Gentleness, but still with equal Efficacy; in this Case, a Decoction of the Pulp in Water, an Infusion in Wine, or an Extract prepared with Water, or with Must wherein some Pulp has been fermented, may be used with Success. We must take Notice, however, that the Extracts are oftener ordered, than either the Decoction or Infusion; because, these being extremely bitter, are very seldom agreeable to the Patient: And the Extract with Spirit of Wine, as we have hinted above, purges less than the Pulp in Substance, and the Gripings attending its Operation are far more painful.

Dioscorides proposes the Pulp to be taken to the Quantity of four * *Oboli*, made into a Bole or Pills with Hydromiel, boiled Honey, Myrrh, and Nitre; and for a milder Purge, he orders a Gourd of Colocynth to be scooped hollow, and some Hydromiel, or Raisin-Wine, which has been boiled in it, to be given in a Draught. The Method *Aëtius* followed was much the same: He took a Gourd of a proper Size, and opening it at Top scraped out the Seed, and then filling the Cavity with Grape-juice boiled, or sweet Wine of a good Age, let them stand in Maceration a Day and Night; and after-

* The *Obolus* was the sixth Part of an *Attick* Drachm, and in our Weight equal to about Half a Scruple.

wards straining the Liquor through a Rag, gave it to his Patient warm.

The Dose of the Pulp, reduced to a subtile Powder, is from gr. v. to ℥j. and in Decoction or Infusion from ℥ss. to ʒj. But on Account of its Bitterness, as we have said, it is prescribed in these last Forms but seldom, and then the Liquor ought to be strained very carefully. For a Clyster it may be boiled to one Drachm, or in an Apoplexy to one Drachm and an Half or two Drachms. But here likewise we must remember to be very careful in straining the Decoction, lest some Pieces or Films of the Colocynth should remain therein; which, according to the Observation of *Etmuller*, by adhering to the Coats of the Intestines, are the Cause of many direful Symptoms.

If from too large a Dose of Colocynth a Superpurgation or Convulsions are brought on, or if we suspect their Approach, the Way either to cure or prevent them, is to let the Patient drink plentifully of Oil, and to inject it by Way of Clyster. This Medicine is seldom of Service in acute Diseases, or to Persons of bilious Temperaments, or whose Bowels are hot: In a Word, it is suitable Physick for such only who are of an athletick Constitution and in the Flower of their Age; being adviseable neither to Children, nor old People; nor especially to pregnant Women, since it kills the *Fætus* if it be used only as a Suppository. The Troches made of it, which in the Shops retaining the *Arabick* Name are called *Trochisci Alkandal*, are prepared thus.

Take of the best Colocynth Pulp, cleared from its Seeds. q. v. cut it small with Scissars and rub it betwixt the Hands with q. f. of Oil of sweet Almonds; then reduce it to a very fine or impalpable Powder in a Mortar, and
make

make it up into small Troches with a Mucilage of Gum Tragacanth in Rose-Water. These being dried in the Shade, are to be powdered again as before, and made into Troches in the same Manner; and so repeating the Process a third Time let them be put by for Use. The Dose is from gr. vj. to ʒfs.

It is customary with the Apothecaries of *Paris* to substitute these Troches for the crude Pulp in all officinal Compositions where Colcynth is ordered; and indeed their Practice herein is commendable.

Take of Colocynth-Pulp cut small ʒfs. Infuse in ʒvj. of white Wine, and let them stand to macerate a Night; then filter the Wine through Cap-paper, and dissolve in it ʒj. of *Calabrian Manna*, for a purging Potion.

Take of the Troches of Colocynth gr. x. Scammony gr. vj. Electuary of Prunes q. f. Make a Bolus. Or,

Take of the Troches of Colocynth gr. vj. Powder of Jalap gr. xv. *Mercurius Dulcis* gr. x. Conserve of Roses q. f. to make a Bolus.

Take of the Extract of Colocynth gr. vj. washed Aloes ʒj. Saffron in Powder gr. viij. Syrup of Wormwood q. f. Mix and make a Bolus, to be given in a Suppression of the *Menses*.

Take of Colocynth-Pulp ʒfs. Root of Pellitory ʒfs. boil in q. f. of Water to ʒxij. to the strained Liquor add of antimonial Wine ʒiij. Sal Gem ʒij. Make them into a Clyster for sleepy Affections and Apoplexies.

The cathartick Quality of this Drug is so remarkable, that being made into a Past with Ox-gall and applied to the Navel, it kills Worms in
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the Belly and expels them by Stool. Some also assert that it purges even by its Smell, or by holding it in the Hands. It is an Ingredient in many purging Pills and Extracts.

ARTIC. IV. Of purging CASSIA.

Cassia solutiva, *Cassia Nigra*, *siliqua Ægyptiaca*, Off. et *Cassia fistula*, quorundam: *Eiar Xamber*, *Serap. Chairsander*, *Avicen.* Κασσία μέλαινα, *Actuar. et Græcor. recentior.* Cassia is an exotick Fruit or cylindrical Pod, a Cubit long and about an Inch thick, composed of a thin, hardish, woody Shell, which on the outside is of a dark brown Colour, and yellowish within, having its Cavity divided into many Cells by thin woody Partitions, standing transversely and parallel to each other. In these Cells is included a soft, black, melleous Pulp, of a sweetish, and somewhat acrid Taste, with a flattish, oval, hard, smooth, chesnut-coloured Seed between every Partition. In the Shops we meet with two Sorts; the one, *Oriental*, which is called *Cassia Alexandrina*, or *Ægyptiaca*, being brought hither from *Egypt*; the other, *Occidental*, which being cultivated in the Islands of *America*, is imported in greater Quantities, and sold at a lower Rate. The Bark of this is thicker, rougher, and more wrinkled, and the Pulp is acrid and nauseous. On the contrary, the Bark of the other Sort is thinner and blacker; the Pulp also is sweet and not unpleasant; and is therefore preferable to the *Occidental*. The Pods are to be chosen heavy, fresh, and full, so as not to rattle upon shaking them. The Pulp within ought to be fat, of a shining black Colour, and sweet; not acerb by Reason of its Immaturity, nor sour by long keeping: Neither ought it to be too dry, nor too moist, nor mouldy. The Merchants have
a Custom

a Custom of laying this Commodity in Wine-Cellars and such like Places, or covering it with Sand, where they sprinkle Water upon it to make the Pods appear fuller and fresher; whence it either grows sour or mouldy very soon. To prepare it for Use, the Bark, Seeds, and woody Partitions are thrown away, and the Pulp is passed through a Sieve; after which it takes the Name of *Flos Cassiæ*, or *Cassia Mundata*.

The Tree which bears it is called *Cassia Fistula Alexandrina*, C. B. P. 403. *Cassia purgatrix*, J. B. T. S. 416. *Cassia Nigra*, Dodon. *Pemptad.* 787. *Arbor Cassiam Solutivam ferens*, Bont. *Conna*, H. *Malab.* T. S. *Quaubayobuatli 2d sive Cassia fistula*, *Hernand.* *Father Plumier* gives an accurate Description of this Tree in his Manuscript History of *American* Plants, Vol. vii. Fol. 103. though it does not seem to be properly a Native of *America*, but to have been transplanted thither out of *Africa*, or else from the *East Indies*. It grows in *Egypt* and almost all the hot Provinces in the *Indies*.

In a chymical *Analysis*, two Pounds, five Ounces and three Drachms of the Pulp of *Alexandrian* Cassia, distilled in B. V. yielded six Ounces, five Drachms and twelve Grains of Phlegm, which was clear, almost insipid, and had but very little Smell of Cassia, yet afforded Marks of an acid Salt by changing the Tincture of Turnsole red: Then one Ounce, seven Drachms and an Half of Phlegm entirely void both of Smell and Taste. The dry indurated Mass remaining weighed twenty eight Ounces and four Drachms: Which in Distillation from a Retort, gave up ten Ounces and four Drachms of reddish acid Spirit; nine Drachms of Spirit, which was both acid and urinous; four Drachms and sixty Grains of Spirit purely urinous; and four Drachms and forty seven Grains of thick empyreumatick

Oil. The Weight of the black Substance, that remained behind in the Retort, was ten Ounces, one Drachm and an Half; which after Calcination for twenty Hours, when it gave over smoking, left one Ounce and five Drachms of reddish brown Ashes; from which were got six Drachms and twelve Grains of lixivial fixt Salt merely alkaline.

The Loss of Parts in B. V. was four Drachms and twenty four Grains. In Distillation from the Retort four Ounces, and in Calcination eight Ounces, four Drachms and thirty six Grains went off in Flame and Smoke.

Further, the Pulp of Cassia easily grows sour; and being diluted with Water, and put up into a Cask for several Months, lets fall an essential Salt perfectly resembling Cream of Tartar.

By this *Analysis* then it appears, that in the Pulp of Cassia is contained a fine volatile acid Salt, which rises the first in Distillation; and another which is more fixed, requiring a strong Fire to force it over along with the Oil. With these are found a very little urinous Salt, and a middling Portion of Earth. Wherefore its Virtues are owing to a certain essential Salt like Cream of Tartar, but finer or less enveloped with Earth, and more tempered with smooth oily Particles.

Most Physicians agree that Cassia is a mild and harmless Purgative, suitable to all Persons, of whatever Age, Sex, or Temperament; as likewise to pregnant and Child-bed Women. Upon the Discovery of the Gentleness of this, and other solutive Medicines, the *Arabians* became bolder in the Practice of Purging, than the ancient *Greeks*, who were accustomed to use only the more violent Catharticks. It is advantageously prescribed in ardent and inflammatory Fevers, in Affections of the Breast, Kidneys, and Bladder, and in all Inflammations,

mations, whether external or internal, when Purging is indicated ; and is beneficial in those Diseases which other Catharticks would but irritate and increase.

It is not given as a Cathartick only in a large Dose, but oftentimes is prescribed as an Alterative in a small Quantity, to be taken a long Time together ; sometimes to mollify the Belly when it is hard and dry, and to promote an easy Discharge of its Contents ; or sometimes to derive Humours, which flow preternaturally upon particular Parts, to the Emunctories of the Intestines, and there to expel them ; as in long and stubborn Affections, such as the Gout, Catarrh, Stone, Hemorrhoids, long Head-Aches, Hemicrania, &c. The *Egyptians* use the Pulp with Sugar-Candy and Liquorice, as a Secret against Disorders of the Kidneys and Bladder : *Monardus* also and *Matthiolum*, following the *Egyptians*, reckon it an infallible Preservative, as they call it, if three Drachms be taken every Day three Hours before Dinner.

Both *Mesue* and *Fallopium* inculcate, that no purging Medicine is more agreeable to the Kidneys and Bladder, than this. All Physicians however are not of the same Opinion ; for *Pigræus* and *Fabrycius Hildanus* affirm that it is offensive to these Parts ; and *Bellonius* relates, in his *Ephemerides*, that the Surgeons of *Paris*, who practised cutting for the Stone, observed it to be highly prejudicial to Persons who had undergone the Operation. Nevertheless, we know from daily Experience, that such have no Danger to fear from it, under a proper Administration. *Fallopium* indeed himself, who recommends it in Affections of the Bladder, informs us that a scalding Heat of Urine is to be excepted. Nor can we doubt, but that in great Inflammations of the Kidneys and Bladder, it may be
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be hurtful, like other Catharticks, whereby in general these Diseases are augmented; forasmuch as they proceed either from a spasmodick Disposition of the Nerves, or of the Membranes, the Cause of which is the Attrition of calculous Bodies, or the saline vellicating Quality of the *Serum* offending the Ureters and Bladder. But if any Purge be necessary in these Cases, none certainly can be more innocent and useful than this.

Again, some find Fault with Cassia on other Accounts. They tell us, it relaxes the Tone of the Stomach, causes Gripings of the Belly, and produces Flatulencies: Wherefore they reckon it very improper for moist, hypocondriacal, or flatulent Stomachs; and that its Sweetness also renders it noxious in bilious Temperaments. But these Inconveniencies are easily obviated, by chusing the best Cassia, or that of *Alexandria*, fresh and perfectly ripe; for this occasions no Gripings. But the *American* Sort, the Taste whereof is less agreeable, sometimes proves a little painful in working; as does also the *Alexandrian*, when it is either immature, or grown sour by long keeping. Moreover if the Stomach be moist, and the Tone of its Fibres too lax, it may be mixed to good Advantage with Rhubarb. As it is a Medicine of a sweet Taste, and slow Operation, no wonder that it sometimes ferments and swells in the Stomach and Intestines, and produces Flatulencies: Which is yet an Inconvenience that is easily provided against, by substituting instead of the Pulp in Substance, a Decoction of it to be strained and drank warm; since thus it neither occasions Windiness, nor Belchings, nor continues so long in the first Passages. We must further add, that Melancholicks and hysterical Women have no need to be afraid of using it, from any Apprehensions of its exciting what
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they commonly term Vapours; for, on the contrary, being mixed with Cream of Tartar, or boiled with Tamarinds, it will be found very beneficial to Persons under such Indispositions: And the same Management will render it entirely harmless in bilious Temperaments. Lastly, as to its slow Operation, it may be made brisker by joining other Catharticks with it, as Scammony, Sena, Jalap, Manna; or likewise antimonial Emeticks, which are added to it as a *Stimulus*, or the Cassia is mixed with them to qualify their Force. Thus, in a Pleurisy, Peripneumony, and other inflammatory Diseases, whenever an Emetick or Cathartick is proper, this Medicine is of extraordinary Service. It also does Wonders in a painful Tension of the *Abdomen*, which sometimes succeeds an injudicious Administration of Antimonials. In this Case it ought to be ordered in a liquid Form, to serve the Patient instead of all other Liquors, except a little Broth that may be taken now and then between Whiles.

Many Physicians of Credit assure us, that the Pulp of Cassia is effectual for preserving new-born Children from the Small Pox, by voiding the thick Matter which stagnates in their Intestines. For this Purpose two or three Drachms are dissolved in six Ounces of Veal-Broth, or Whey, and the whole is given by Spoonfuls in about eight or twelve Hours, before the Child is put to the Breast.

This Pulp is prescribed from zj. to ʒiss. in the Form of a Bolus, or dissolved in Liquors; and in Decoctions from ʒiss. to ʒiv. to be drank, or injected by Way of Clyster.

Take of the Pulp of Cassia fresh drawn ʒj. Rhubarb powdered ʒj. Cream of Tartar ʒiss. Mix and make a Bolus to be taken in Wafers on
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an empty Stomach, drinking some Veal-Broth after it. Or,

Take of the Pulp of *Egyptian Cassia* ℥vj. *Cornachine's Powder* ℥j. Make a Bolus.

Take of the Pulp of Cassia ℥j. Syrup of Violets, or Peach-Flowers, ℥j. dissolve them in ℥vj. of Whey for a Potion. Instead of Whey may be used a pectoral Ptisan, or Tincture of Sena, Decoction of Tamarinds, &c.

Take of the Pulp of Cassia, with the Stones, ℥iij. *Calabrian Manna* ℥ij. Boil gently in ℥xij. of a pectoral Decoction: In the strained Liquor dissolve ℥j. of the compound Syrup of Apples, or gr. vj. of emetick Tartar: Let it be divided into two Draughts, to be taken at the Distance of four Hours, some Broth being drank in the Interval.

Take of the Pulp of Cassia fresh drawn ℥iij. Tamarinds ℥ifs. Boil them gently in ℥ij. of Whey, to be strained and taken by Glassfuls.

Take of the Pulp of Cassia ℥j. Honey of Violets ℥ij. dissolve in ℥ij. of an emollient Decoction for a Clyster.

Sometimes Cassia is used outwardly, the fresh Pulp being serviceable to the Piles, if external, in the Form of a Cataplasm, or if internal, diluted with warm Milk and injected. It is likewise commended, externally applied, for Inflammations of the Liver, and Pains in the Joints.

In Perfumers Shops, and the Cabinets of Virtuoso's, we meet with another *Species* of Cassia, which is called *Cassia Brasiliana*. The Pod of this Sort is much thicker than the *Egyptian*, somewhat flat, and extremely hard. It is imported from *Brasile*, and the Tree is distinguished, *Cassia fistula Brasiliana*, C. B. P. 403. *Tapyracoaynana Brasiliensibus*,

Pison. et Marcgrav. Cassia fistula Brasiliiana flore incarnato, Breyn. Cent. 1. Cap. 21. The Pulp of this, before it is ripe, is astringent, but afterwards purgative like the other, as *Piso* and *Tournefort* have observed. *Lobelius* and *Casp. Baubine* assert even that one Ounce purges more than two of *Egyptian Cassia*: Whence we may gather, that *Johnson*, in his *Dendographia*, very improperly calls it *Cassia fistula non purgans Brasiliensis*. Indeed *Marcgrave* also ascribes to it only an astringent Virtue, but he probably made Trial of it when the Fruit was immature.

ARTIC. V. Of TAMARINDS.

Tamarindi, Off. Tamarbendi, Arab. 'Oξυφωνίξ, Actuar. et Græcor. recentior. These are a Fruit in Figure and Size resembling the Pod of a Bean, with three or four Protuberances, and covered with two Husks or Barks; whereof the external is thickish, of a yellowish brown Colour, and brittle like an Egg-shell; the internal is of a green Colour, and thinner. The *Diploë*, or Interstice between these Barks, is full of a soft, blackish, acid, vinous, and subacid Pulp. The medullary Substance, or Pulp of the Fruit, is brought to us in a thick viscid Mass, with a Mixture of Membranes, Strings, or Fibres, and Pieces of the Bark; containing also hard, shining, chesnut-coloured Stones or Seeds, larger than those of *Cassia*, almost quadrangular, and flat. This Pulp ought to be fresh, fat or clammy, of a blackish red Colour, sour, juicy, and not adulterated with Prunes; and before it is used ought to be cleared from the Membranes, Fibres, and the like. It is brought to us from *Egypt*, and the *Indies*: Whence the *Arabian* Name *Tamarbendi*, which signifies an *Indian Fruit*. The ancient *Greeks* were not acquainted with it.

The

The Tree is called *Tamarindus*, *Raii Hist.* 1748. *Siliqua Arabica, quæ Tamarindus*, C. B. P. 403. *Tamarindus Detelside appellata*, *P. Alpin. de Plan. Ægyp.* 351. *jutay, sive Tamarindus*, *Pison.* 157. *Tamarindus* *Marcgr.* 1071. *Balam-pulli sive Maderampulli*, *H. Malab. T. S.* It grows in *Egypt, Arabia*, the *Indies, Ethiopia*, and that Part of *Africa*, which is called *Senega*. In hot Seasons this Tree sometimes gives out a glutinous, acid, and reddish Substance, which afterwards becomes white and hard like Cream of Tartar.

From the four Taste of Tamarinds, it is evident they are plentifully stocked with acid Salt : Which is also proved by their *Analysis*, wherein scarce any alkaline Salt is obtained ; but, besides the acid, a large Proportion of Oil. Six Pounds being dissolved in eight Pints of common Water, and having stood for two Months, six Drachms of an essential Salt were found sticking to the Sides of the Cask, and after a longer Time the Quantity was greatly augmented. This Salt differs not from Cream of Tartar, having an acid Taste, and being only soluble in boiling Water. Again, after they have been macerated for some Days, an acid Spirit is drawn from them in Distillation, not unlike the Spirit of Vinegar. Hence it appears that they abound with acid Salt, and Sulphur ; yet so, that the acid predominates : Whereas in the Pulp of Cassia the Sulphur is more copious than the Acid.

The *Turks* and *Arabians*, according to the Relation of *Bellonius*, when they set out upon long Journeys in the Summer, or are to pass over the Deserts of *Arabia*, lay in a Provision of Tamarinds ; which they use only to slake their Thirst, and not as Physick. For the same End they likewise preserve the Fruit or Pods in Honey, or Sugar, as well when they are small and green, as when larger and come to Maturity.

The *Arabians* in general account them purgative, though some Writers would deny that this Virtue belongs to them; who perhaps never experienced their Efficacy in a sufficient Dose. We must indeed acknowledge that they are exceedingly mild; and with their solutive Virtue have a gentle Restrictingency, which is found in few other Catharticks. They likewise temper the Acrimony of the Humours, allay Heat of the Blood and Bile, cure acute, ardent, and pestilential Fevers, and the Jaundice, extinguish Thirst, Heat of the Stomach, Liver, and other Bowels, and stop Vomiting. Common Practice has confirmed their Usefulness in the Hemorrhoids, Inflammations, Dropsy arising from Inflammation, bilious Loosenesses, Diseases of the Kidneys, and also in a *Gonorrhœa*; which is proved by the Observation of *Fallopious*, who gave them in this Disease with Success.

Further, besides the purgative Virtue inherent in themselves, they are good Correctors of the same Property in some more acrid Substances; such as Scammony, the Spurges, Spurge-Laurel, &c. for the saline, acrid and oily Parts of these are saturated, fixed, and rendered less active, by the essential acid Salt of the Tamarinds. On the other Hand, sweet Medicines, which operate slowly, as Cassia, and Manna, are rendered quicker, and their fermentative Quality is restrained, by reason that Acids are less disposed to effervescence. Antimonial Emeticks are not corrected by Tamarinds, as some imagine; for this, and all other vegetable Acids, are observed to augment their Force: Which, on the contrary, by mineral Acids, is either weakened or totally destroyed.

In some Diseases Tamarinds are accounted specific, as in ardent and putrid Fevers, Scurvy, Diabetes, Disorders in Children from Worms, and the

the Jaundice. In this last the *Indians* give a simple Medicine, made only of Tamarinds, Cassia, and Sugar. In scorbutick Affections they are prescribed to Advantage, not only to purge, but to prevent the Dissolution of the Humours, and blunt their Acrimony: But in Coughs, Coldness of the Stomach, Ulcers of the Guts, and Dyfenteries, these like all other Acids are prejudicial. The Dose of the Pulp, cleansed from the Membranes, Stones, &c. and passed through a Sieve, is from ℥ij. to ℥j. in Substance, and to ℥iij. in Decoction or Infusion.

Take Tamarinds and Pulp of Cassia ā ℥ss. Powder of Rhubarb gr. xxx. Make a Bolus.

Take of the Pulp of Tamarinds, well cleansed, ℥ss. Scammony in Powder gr. xij. Make a Bolus.

Take of fat Tamarinds ℥ij. Whey ℥ij. Boil them gently, and in the strained Liquor dissolve ℥ij. of the Syrup of Violets. A Glasseful of this may be taken now and then to quench Thirst in Fevers, or to calm the Heat of the Blood, or Bile.

ARTIC. VI. Of the LEMON.

Limon, sive Malum Limonium, Off. This Fruit is so well known that it would be needless to describe it.

The Tree which bears it is the *Malus Limonia acida*, C. B. P. 436. *Limonia Malus*, J. B. 196. It grows in *Italy* and *Spain*, and is planted in Gardens in the southern Parts of *France*.

Lemon-Juice has a sharper, or more acid Taste, than the Juices of the Orange and Citron, and therefore is probably more cooling than either. It

quenches the Thirst in Fevers, moderates the Heat, restraining the Effervescence of the Bile and Blood, and repairs the Strength and Appetite. In malignant and pestilential Fevers, as also against certain Poisons, it is sometimes preferable to *Venice Treacle*, *Mithridate*, and all other Alexipharmacks. It is likewise an excellent Remedy in the Scurvy, and being often rubbed upon the Gums, in a short Time removes their scorbutick Putrefaction. Moreover, Lemon-Juice has a diuretick Virtue, by which it expels Gravel and gives Relief in nephritick Complaints. It also stops Vomiting when occasioned by bilious Humours, and is good in melancholick and hypochondriack Affections. A Syrup is prepared from it in the Shops, which is commended against the Stone, and Obstructions of the Kidneys: Likewise against Thirst and Heat in ardent Fevers. It strengthens the Heart and Stomach, and allays the Effervescence of Bile; and therefore is given with Success in ardent Fevers attended with Weakness, fainting Fits, Vomittings, and Hiccups.

The Peel is accounted cardiack and stomachick, but is seldom prescribed, unless candied. A fine light essential Oil is drawn from it, which is useful to mix with purging Extracts, or, being joined with Sugar into an *Eleosaccharum*, to dissolve in cardiack and stomachick Juleps.

Take of purified Nitre \mathfrak{zj} . white Sugar $\mathfrak{z}\text{iv}$.
Cochineal gr. xvj. Boil them in libijs of
Spring-Water to Despumation; then letting
the Decoction stand to settle, decant it clear,
and squeeze into it the Juice of a Lemon. This
is a pleasant and useful Liquor to drink in ar-
dent, bilious, malignant and pestilential Fevers.

Take of the Root of Horse-Raddish, fresh, and cut small, zj . the Leaves of Scurvy-Grafs P. j. Raisins stoned N^o. vi. and one Lemon, with the Bark, sliced. Let them macerate without Heat in white Wine and common Water, \bar{a} ℥j . for 24 Hours in a Glafs-Vessel close stopped, shaking it now and then about. Pour the Liquor off, and use it as common Drink in the Scurvy.

Take of the distilled Water of Pellitory of the Wall ziv . to which add Oil of sweet Almonds and Syrup of Lemon-Juice \bar{a} zj . Make a Draught to be given in nephritick Disorders.

ARTIC. VII. Of the SEVILLE ORANGE.

Malum aurantium, sive Aurantium Hispalense, Off. This Fruit is as well known to every Body as the former, and therefore a Description of it would be equally superfluous.

The Tree which produces it is the *Malus aurantia fructu acido, Off.* *Malus aurantia major, C.* B. P. 436. It grows in *Italy, Spain, and Portugal*; as also in the *Isles d'Hieres* upon the Coast of *Provence*.

The Juice of the *Seville Orange* is cooling, extinguishes Thirst, and abates the Heat and Effervescence of the Blood and Bile, and therefore is useful in Fevers. It is peculiarly efficacious against the Scurvy: insomuch that the *Dutch Sailors*, when they have made long Voyages to the *East Indies* or other remote Climates, where they generally contract the Scurvy, after they arrive at *Portugal* and can procure a sufficient Quantity of this Fruit to eat, are entirely cured of the Disease in a very short Time. Being mixed with Water and Sugar, it makes an agreeable cooling Liquor, which is called

Orangeat

Orangeat or *Orangeade*. It is prescribed to ℥j. or ℥ij. diluted in the Form of a Draught.

The Peel strengthens the Stomach, helps Digestion, divides and attenuates thick and tenacious Humours, discusses Wind, asswages colick Pains, provokes the *Menses* and *Lochia*, and kills Worms. It is accounted by some a Specifick in an Ischury and Dyfury. It is given from ℥j. to ℥j. in Powder. The essential Oil, which is obtained from it either by Distillation or gentle Expression, is given in the same Disorders, in the Form of an *Eleosaccharum*, from gutt. ij. to iij. This Peel is likewise used in Tincture, and candied with Sugar, and a Syrup is prepared from it in the Shops.

ARTIC. VIII. Of the POMEGRANATE.

Granatum sive Punicum Malum, Off. The Pomegranate is a Fruit almost globular, but here and there somewhat compressed, of different Magnitudes, commonly about the Bigness of a large Apple, with a Crown on its upper Part. The Bark is moderately thick, and, as it were, coriaceous, yet hardish and brittle; before the Fruit is ripe green and smooth, afterwards of a scarlet Colour and rough, and at length changing brownish; within something yellow, of an astringent Taste, containing a great Number of *Acini*, as they are called, disposed into distinct Cells, which in some are of an intense red Colour, in others purple, and full of a sweet, acid, or vinous Juice. Each of these *Acini* usually includes a single oblong Seed or Grain, like a Grape-Stone, consisting of a woody Bark, and a bitter astringent Kernel.

The Tree is called *Malus Punica sativa*, C. B. P. 438. *Punica quæ Malum Granatum fert*, Cæsalpin. 141. J. R. H. 636. *Malus Punica*, J. B. 1. 76. *Raii Hist.*

Hist. 1462. *Malus Granata sive Punica*, *Tabern.*
Icon. 1033. It grows in *Spain*, *Italy*, *Provence*, and
Languedoc. The Flowers of this Tree, and the
Acini, Juice, Kernels, and Bark of the Fruit, are
 used in *Physick* *. *Dioscorides* calls these Flowers
κύντινοι or *Cytini*, to distinguish them from those of
 the wild Tree which are called *Balauftines*; but
 the same Word is used by *Theophrastus* to signify
 only the *Calyces* of *Pomegranate-Flowers* in gene-
 ral. The Bark of the Fruit, which was the *Σίδιον*
 of the *Greeks*, is called in the Shops *Malicorium*.
Pliny tells us that the common People were ac-
 quainted with a Method of making *Leather* with
 it; whence (*viz.* from the Word *Corium*) *Physicians*
 termed it *Malicorium*.

Pomegranate-Bark yielded in *Distillation* an
 acid *Liquor*, another intensely austere, and a lit-
 tle alkaline or urinous *Liquor*, with a large Pro-
 portion of *Oil*. The black *Coal*, which remained
 in a large *Quantity*, being calcined for thirty *Hours*,
 continued smoking, and the *Residuum* always re-
 tained a dark brown *Colour*; from which was got
 a moderate *Quantity* of fixt alkaline *Salt*, and a
 copious *Earth*. But this brown *Earth* seems to me
 to be chiefly a *Portion* of *Oil*, so greatly concen-
 trated and fixt as to resist the *Action* of *Fire*: And
 the *Stypticity* of acerb and austere *Substances*, in
 my *Opinion*, is not owing so much to a certain
 porous and astringent *Earth*, as to a certain acid
Salt, which is so fixt, as not to be raised by the
Force of *Fire* but with the greatest *Difficulty*. This
Salt is usually compared to the *vitriolick Acid*; and
 not without *Reason*, since the *vitriolick Acid*
 is the most fixt of all others, as we find by Ex-

* They are all astringent, and serviceable in *Fluxes* and *He-*
morrhages; but the *Bark* or *Rind* of the *Fruit* is the only
Part used in the *English* Shops.

perience in distilling Vitriol. Nor is this Fixity, if we may so term it, to be ascribed to an astringent Earth in Iron or Copper; because the same Salt is still more fixt in vitriolated Tartar, in *Glauber's* Salt, and Alum, wherein it is combined with a fixt Alkali, the absorbent Earth of Sea-Salt, and a calcareous Earth, from which it is not to be separated by the Force of Fire. Moreover, if the vitriolick acid Salt be joined with Oils, or likewise with Spirit of Wine, and the Mixture be digested a sufficient Time, they are at length so intimately united that they form a resinous Mass, whereof the greater Part is converted by Fire into a black Earth, extremely fixt, and void both of Taste and Smell. Therefore the acerb austere Taste appears to me to depend chiefly upon the like Combination of this Acid with Oil: But of this elsewhere.

The Bark of the Pomegranate has a bitterish, austere Taste. It is very astringent, and on Account of this Property is useful in preparing or tanning Hides, wherein it may be employed to the same Purpose as Oak-Bark; and forasmuch as it turns the Solution of green Vitriol black, it may serve instead of Galls to make Ink. It is efficacious in Loosenesses, Dysenteries, and all Fluxes of the Belly, in Hemorrhages, the *Fluor albus*, and *Gonorrhœas*; provided nevertheless that it be given cautiously, and not too soon. It powerfully strengthens the Tone of the Parts, whence it often produces contrary Effects: For *Bartholin* gives an Account of a certain Woman, who, by taking Pomegranate-Bark, was cured of a Suppression of her *Menses*; and we have before observed the same contrary Effects of opening and astringing in the Use of Chalybeates. *Constantius* asserts that a Decoction of this Bark with Wine kills Worms in the Belly, particularly those which are called *Ascarides*.

It

It is prescribed in Powder from ʒfs. to ʒj. and in Decoction to ʒfs. It is likewise used in Gargarisms, and astringent Clysters.

ARTIC. IX. Of AMOMUM.

Amomum racemosum, Off. Ἄμωμον, Diosc. et Gal. Βόλβόεν ἄμωμον, *Andromach.* Βόλβος ἄμωμον, *Damocrat.* *Amomum*, *Plin.* *Hamemis* aut *Hamama*, *Arab.* The true Amomum, as we find it in the Shops, is a dry Fruit which grows in small Bunches, ten or twelve roundish, membranaceous, brittle Pods, about as big as common Grapes, standing without Foot-stalks upon one common Twig, and pressing close upon each other. The Twig is slender, an Inch or two long, and furnished with many thin fibrous Leaves of different Lengths; the shorter being distributed in a Series over the Twig, like Scales. The longer Leaves, which are about equal to Half an Inch, encompass the Fruit, six and six together, forming about each Pod a Kind of *Calyx*. The Pods are of a pale Colour, white, or palish with a Cast of red, having at their Point a small Protuberance, and some fine Threads or Nerves drawn like Lines through their Length; with three Furrows, and as many Eminencies between them, corresponding to three Rows of cornered Seeds contained within. These are separated by a thin Membrane, which likewise affords a particular Cover to each Seed. The Seeds in the three Orders are so closely ranged, that they exhibit the Appearance only of three long entire Seeds. Externally they are of a dark Colour, internally white, of an hard Substance, yet brittle, being more easily broken than Cardamom-Seed. The Bunches have a fragrant Smell, something like common Lavender, but sweeter. The Seeds separately

rately have a stronger Smell, and a more acrid hot Taste, somewhat resembling the Taste of Camphore. The Pods ought to be chosen inclining to red, for it has been observed that the Seeds of the white or pale-coloured Pods are seldom good.

This is evidently the Amomum of the Ancients, which is easily proved by comparing it with its Description in *Dioscorides*. In later Ages it continued for a long Time unknown, till *Cechinni Martinelli*, an Apothecary of *Verona*, as *Nicolas Maronea*, or *Marogna*, in a learned Treatise on this Subject tells us, brought it again to Light.

Botanical Writers have been surprizingly divided in their Opinions concerning the Plant which bears the true Amomum, scarce two of them agreeing upon the same; but all their Assertions on this Head have been learnedly refuted by *Maronea*. We have yet no Description of the Plant in any Author. Some suppose it to be the first *Species* of *Elettari*, or the Cardamom-Plant, described in the *Hortus Malabaricus*. But we may observe a great Difference between the Fruit of this *Elettari* and Amomum; since Cardamom or the Fruit of *Elettari* seems to be placed beneath the *Petala* of the Flower, and, consequently, to have been the *Calyx* of the Flower: On the contrary, the Pods of Amomum are contained within the *Petala* of the Flower or Leaves of the *Calyx*, and therefore arise from the Pistil of the Flower. We may therefore reasonably conclude that the Plants producing Cardamom and Amomum are of different Kinds. Besides, the Pods of Cardamom have each a proper Foot-stalk by which they hang together in Bunches, but those of Amomum adhere immediately to one common Stalk.

George Camelli, in the *Philosophical Transactions of London*, proposes a certain Plant which grows in the

the *Philippine* Islands, under the Name of *Tugus*, for the true *Amomum* of *Serapio*; but his Description of it is so inaccurate, that we may justly doubt whether it be the true *Amomum*, or a particular *Species* of *Cardamom*.

Amomum abounds with a thin, volatile, aromattick, essential Oil, which it yields in Distillation, if it be previously macerated in Water. By Virtue of this aromattick Oil, it resists Poisons, attenuates thick Humours, increases the Motion of the Blood, raises the Spirits when languid, restores the Oscillation of the Fibres, and helps Digestion. It is also diaphoretick, and provokes Urine and the *Menses*. It is an Ingredient in *Venice-Treacle* *. Among the Ancients it was chiefly used in Unguents.

ARTIC. X. Of CARDAMOM.

We shall perhaps find nothing in the whole *Materia Medica* which is the Subject of more Dispute than *Cardamom*. The Writers of all Ages, *Greeks* and *Arabians*, Ancients and Moderns, seem to have had different Notions concerning it. The older *Greeks* have taken Notice but of one Kind of *Cardamom*. *Pliny* makes four Kinds. *Avicenna*, among the *Arabians*, reckons two; one, which he calls *Cacula* or *Cacule*; another, *Cordumemi*: To this he attributes the same Virtues which *Dioscorides* attributes to *Cardamom*. He makes two *Species* of *Cacula* (viz.) the greater and the lesser. He likewise speaks of *Helbua* or *Hilbua*, and *Chairbua*, by which Words

* It being very rarely to be met with, its Place is generally supplied by the Seed of the *Amomum vulgare* or common *Amomum*, which *Caspar Baubine* calls *Sison quod Amomum Officinis nostris*. This, according to Mr. *Miller*, *Botan. Officin.* p. 31. is a little striated Seed, about the Bigness of Parsley Seed, of a pleasant, hot, spicy Smell and Taste, something like a Nutmeg.
some

some Authors suppose is meant Cardamom, or, at least, Meleguette. *Serapio* treats of Cardamom under the Name of *Cacula*, and distinguishes two *Species*: The greater he calls *Hil* or *Heil*; the lesser, *Hilbane*, *Hilbave*, or *Hilbua*. All the modern *Greeks* interpret the *Cacula* of the *Arabians* by the Word *Καρδάμωμον*; and *Myrepsus* also, after the *Arabians*, frequently mentions the *καρδάμωμον μέγα* καὶ *μικρόν*, the great and the small Cardamom.

Hence we may infer, that the *Arabians* and modern *Greeks* were acquainted with two *Species* of Cardamom. Moreover, from what may be gathered from *Dioscorides*, *Galen*, and *Paulus Ægineta*, we may conclude, that what was used under this Name by the ancient *Greeks* was the same with our lesser Cardamom.

Matthiolus speaks of three Sorts of Cardamom, which at this Time are found in the Shops (*viz.*)

1. *Cardamomum majus*, the greater Cardamom;
2. *Cardamomum medium*, the middle Cardamom;
3. *Cardamomum minus*, the lesser Cardamom.

1. *Cardamomum majus*, *Matthiol.* *Fruetus Longouze*, *Steph. de Flacourt*, *Hist. Insul. Madagasc.* This is a dry Fruit of an oblong Figure almost like a Fig, and about the same Bigness, with a broad circular Crown divided into three Sections on its upper Part. The outside Covering is thin, membranaceous, tough, and fibrous, marked with *Striæ*, or Furrows, running along it, and of a brown or reddish Colour. It is divided within into three Cells, containing a great Number of uneven, shining, reddish Grains or Seed, which are separated and covered by several Membranes intermixed with them. Some Writers have called them *Meleguettæ*, from their resemblance to the *Millium indicum*, which *Matthiolus* tells us goes among the *Italians* by the Name of *Melega*. They have a quick aromatick

matick Taste, something like Camphore, Lavender, and Thyme, and an agreeable sweet Smell. Hence some have termed them *Grana Paradysi*, or Grains of Paradise.

Matthiolus supposes the officinal Meleguette to be the Seed of this Fruit, which is taken out of the Pods and brought to us. But *Cordus* is of another Opinion; for Cardamom-Seeds, says he, have a quick and agreeable Taste, without any burning Acrimony upon the Tongue; and Meleguette, on the contrary, is extremely hot and acrid like Pepper. And indeed their Difference in Taste is considerable, Cardamom being less acrid and more aromatick, approaching to the Taste of Lavender and Camphore. However, the Pods of Meleguette, as *Cordus* himself acknowledges, bear a great Resemblance to the greater Cardamom, being full of Seeds like that, and commonly about the Bigness of an Egg: We are therefore of Opinion that it ought to be ranked under the same Genus, and may be called, in order to distinguish it from the true Sort, *Cardamomum majus Semine piperato*. In the Shops it is called *Meleguetta* or *Maniguetta*; by some Authors *Grana Paradysi* *, and is the *Mellegetta seu Cardamomum piperatum* of *Cordus*. It is a shining square-cornered Seed, less than Pepper, of a reddish brown Colour on the Surface, and white within, having an acrid, hot and burning Taste, like Pepper and Ginger, being also not unlike them in Smell. It is imported in large Quantities, and serves instead of Pepper for seasoning Food; and sometimes is falsely substituted in Medicines for Cardamom-Seed. It grows in *Africa*, *Madagascar*, and the *East Indies*, from which Places it is brought by the *Dutch*.

* By this Name it is generally substituted in our Shops for the true *Cardamomum majus*.

2. *Cardamomum medium*, Matthiol. *Cardamomum majus*, Bontii. This is an oblong, slender, three-cornered Fruit or Pod, an Inch or an Inch and an half long, marked with *Striae*, ending obtusely at the Top, of an ashy Colour, hard to be broken, and containing in three Cells a large Quantity of oblong, flat, angular Seeds: These are wrapped up in very thin white Membranes, and divided through the Middle on one Side by a small Furrow, which is intersected by many transverse Lines. They are of a reddish white Colour, and their Substance is white, acrid, and aromattick. This Sort seldom comes to us.

The Plant is like that which bears the lesser Cardamom, of which we shall now speak; only that it grows sometimes higher, and has larger Leaves.

3. *Cardamomum minus*, Matthiol. *Cardamomum veterum Græcorum*. *Cardamomum simpliciter in Officinis dictum*, C. B. P. This also is a dry Fruit, or short triangular membranaceous Pod, about five Lines in length, blunt at the upper Extremity, and ending more in a Point towards the Stalk, of a pale reddish Colour, and striated as the former. The Husk is much thinner than in the *Cardamomum medium*, and when it is fully ripe opens at the Corners. Within it is usually divided into three Cells by fine Membranes which are easily lacerated. In each of these Cells are found two Rows of cornered rough Seeds, of a reddish yellow Colour, and white in their internal Substance. They have an acrid, bitterish, aromattick, and, as it were, camphorated Taste. Many Pods are sometimes found hanging by slender Pedicles upon one common Stalk; whence we may learn that they grow upon the Plant in Bunches. They are brought from the *East Indies*.

Some *Species* of Cardamom like the preceding but less are imported to us mixed with it. They are perhaps the imperfect or abortive Fruit of the same Plant, or some others like it: Of this Sort is the *Cardamomum minus*, C. B. P.

The Plant upon which the lesser Cardamom grows is imperfectly described by *Bontius*, but with much greater Accuracy in the *Hortus Malabaricus*, Vol. II. The learned Botanist *Paul Herman* reduces this Plant to the same Class with Turmeric, Galengal, Zedoary, Ginger, &c. And it may therefore be ranked under the Genus of *Cannacorus*, J. R. H. It is called *Elettari*, *Hort. Malab.* 11. 9. where we find it distinguished into three *Species*, the first of which many suppose to be the true officinal Amomum; though falsely, as we have made appear in the former Article. These Plants grow in many Parts of the *East Indies*. I have likewise seen a *Species* of Cardamom from *China*, which the *Chinese* call *Tsao-Keou*. The Pods are much larger and rounder than those of the lesser Cardamom.

The several *Species* of Cardamom abound with an aromack essential Oil, which they yield by being macerated in Water, and afterwards distilled.

The lesser Cardamom is most frequently used in the Shops; the Bark or Husk being generally separated from the Grains and thrown away. It ought to be fresh, with a Husk of a pale Colour on the outside, well closed, and full of sound, reddish brown, odorous, acrid, and aromack Seed.

It helps Concoction, fortifies the Stomach and Brain, provokes Urine, and the *Menses*, and is recommended by some to prevent Apoplexies and Giddiness. The Dose in Substance is from ℥ss. to ℥j. and to ℥ʒss. in Infusion.

ARTIC. XI. Of CUBEBS.

Authors have disputed much concerning Cubebs, some asserting they were known to the ancient *Greeks*, others denying it. The former build their Assertions upon the Authority of *Avicenna* and others of the *Arabians*, who have assigned to Cubebs whatever *Galen* had said of *Καρπήσιον*, as if they were the same, notwithstanding we may learn from *Galen* himself, that *Carpesium* was no Fruit, but either a Branch or twiggy Root. This (to omit others of the like Nature) is so obvious a Blunder, that it is reasonable to conclude, till better Authority to the contrary be produced, that Cubebs were entire Strangers to the Ancients. But leaving this Controversy, we proceed to treat of the Cubebs which are now found in the Shops.

Cubebæ Vulgares, Off. *Cubebæ* or *Quabebæ*, Arab. They are a dry Fruit, or spherical Grains, like Pepper, but sometimes a little larger, having a long slender Foot-Stalk, and a brownish gray Bark which is full of Wrinkles; though sometimes it is smooth and co-extended with a thin brittle Shell, which contains a roundish Seed of a dark Colour on the outside, and white within. They have a sweet, acrid, aromattick Taste; but in their Acrimony are much weaker than Pepper, though they are perceptible a long Time in the Mouth, and draw forth abundance of Spittle. Two Sorts of them come to us (*viz.*) the ripe, and the unripe. These last are light, wrinkled, and contain a small withered Kernel; the others are smooth, and perfectly full of Kernel, and are therefore the heavier. They are brought from *Java*, an Island in the *East Indies*; and the best are large, heavy and fresh.

Paul Herman calls the Plant upon which they grow *Curane*, *Cynos. Mat. Med.* It is a scandent Plant something like the *Smilax Asper*, and full of small Branches; but no Author hitherto has given us a Description of it.

Cubebs contain a subtile, aromatick, essential Oil, which is got from them in great Plenty by Distillation: Wherefore they are of great Service in an Apoplexy, Giddiness, Palsy, Stinking Breath, and Want of Appetite. They strengthen the Stomach when relaxed, discuss Flatulencies, attenuate thick tough Phlegm adhering to the Coats of the Stomach and other Bowels, and are useful in cold Disorders of the Brain and Womb. Being chewed along with Mastich they discharge Spittle, fortify the Brain, and cure Catarrhs. *Garcias* says the *Indians* use them much infused in Wine to excite Venerary, and the People of *Java* take them to warm the Stomach. They are likewise commended against Hoarseness and Loss of Voice. The Dose in Substance is from gr. iij. to ʒj. and from ʒj. to ʒij. infused in Wine, or some other proper Liquor.

ARTIC. XII. Of PEPPER.

Piper, *Latinor.* Πέπερι, *Græcor.* *Fulful et Fulfel*, *Arab.* Pepper is a Kind of Spice which has been much esteemed as a Seasoning for Food in all Ages and in all Countres. It was known both to the ancient and modern *Greeks* and the *Arabians*, and was much used among them. *Dioscorides*, *Galen*, and other Writers, distinguish three Kinds (*viz.*) black, white, and long Pepper; which they supposed to be all the same Fruit, differing only in Degrees of Ripeness. But the three Sorts which are at this Time in the Shops under these Names, are the Produce of three different Plants, which we shall here mention.

Piper Nigrum, Off. *Piper rotundum*, C. B. P. 411. Black Pepper is a small round Grain, or dry Fruit, about as big as a lesser Sort of Pea, with a black or dark brown wrinkled Bark, wherein is included an hardish and compact Substance; of which the exterior Orbit is of a yellowish green Colour, and the interior white, leaving when broken a small Hollow in the Middle. The whole is of an acrid and extremely hot, or burning Taste. It is brought from those Parts of the *East Indies* which belong to the *Dutch*. The larger, heavier, and less wrinkled it is, the better.

The Plant whereof it is the Fruit is called *Lada*, *aliis*, *Molanga*, *sive Piper Aromaticum*, *Pison. Mantis. Arom.* 180. *Molago-coddi*, *Hort. Malab.* 1723. It grows in *Java*, *Sumatra*, and in all Parts of *Malabar*.

Piper Album et Leucopiper, Off. *Piper rotundum album*, C. B. P. White Pepper is of two Sorts. The one native, which seldom comes to us: The other, which is very common, is factitious, being nothing but decorticated black Pepper. The Decortication is performed by macerating the black Pepper in Sea-Water till the Bark swells and cracks, so as to be easily separated from the inner Substance; and then it is laid in the Sun to dry. It differs from black Pepper in having a cineritious or whitish Colour, and milder Qualities.

The Plants to which the native white and the black Pepper belong, like the Vines producing white and black Grapes, are only distinguishable from each other when the Fruit is upon them; but the white is much scarcer, being to be met with no where but in some few Places in *Malabar* and *Malacca*. *Stephanus de Flacourt*, in his Description of *Madagascar*, tells us that a Species of white Pepper grows in that Island; but as he does not describe

scribe the Plant, we cannot determine whether it be the same, or no, with the white Pepper of which we are now speaking.

Piper longum et Macropiper, Offic. Piper longum Orientale, C. B. P. 412. Long Pepper is a dry unripe Fruit, an Inch, or Inch and half long, of an oblong and cylindrical Figure, like the *Juli* of the Beech-Tree, having many *Striæ* running obliquely, as it were, in a spiral Order, with Tubercles or small granular Excrescencies so disposed as to represent a Sort of Net-work. Within are several small membranaceous Cells lying regularly one after another in a Row, each containing a roundish Seed scarce a Line in Diameter, of a blackish Colour on the outside, whitish within, and of an acrid, hot, bitterish Taste. This Fruit, which is a kind of *Julus* or *Catkin*, hangs by one End upon a slender Foot-Stalk about an Inch in Length. It ought to be large, sound, fresh, and to make a slow, but lasting Impression, upon the Tongue. When it is perforated, carious, or adulterated, it is unfit for Use.

The Plant is called *Pimpilim sive Piper longum Pison. Mantis. Arom. 182. Cattu-Tirpali, Hort. Malab. 1727.* It grows in *Java, Malabar*, and other Parts of the *East Indies*.

Black Pepper in the Quantity of four Pounds yielded in Distillation from a Retort, eight Ounces, three Drachms and an half of Liquor, which had the Smell and Taste of Pepper, and was impregnated with some Portion of urinous Salt; then fourteen Ounces and eighteen Grains of reddish empyreumatick, acrid, and subacid Liquor, which gave Marks both of an urinous and acid Salt: After this two Ounces, five Drachms and twenty four Grains of urinous Spirit, with one Drachm of concremented volatile urinous Salt, half a Drachm of

limpid essential Oil, and eight Ounces of thicker Oil. The black Mass remaining in the Retort weighed eighteen Ounces, six Drachms and eighteen Grains. This being calcined for ten Hours, till it gave over smoking, left three Ounces, six Drachms and twenty four Grains of gray Ashes; from which were got one Ounce, three Drachms and twelve Grains of mere alkaline fixt Salt. The Loss of Parts in Distillation was one Pound, four Ounces and forty eight Grains: And in Calcination fourteen Ounces, six Drachms and eighteen Grains.

But six Pounds of black Pepper, macerated for six Days in Water and afterwards distilled, both from an Alembick with a Refrigeratory and from a Retort, gave up three Drachms of thin, transparent, yellowish, essential aromatick Oil, smelling like Pepper, and of an acrid Taste, but not very strong. The distilled Water also, upon which this Oil floated, had the Smell of Pepper, and an acrid Taste from the volatile urinous Salt which was dissolved in it, and made the Solution of corrosive Sublimate foul and milky. After the Grains had been thus macerated they were much deprived of their Taste. Whence it appears that Pepper abounds with a volatile oily Salt, to which its Virtues are chiefly owing.

The Use of Pepper is very common in all Nations in Sauces and Seasonings, which are intended to raise the Appetite and help Concoction. The common People among the *Indians* drink Water wherein a large Quantity of Pepper has been infused against a Languor or Weakness of the Stomach; and for the same Purpose, by fermenting fresh Pepper with Water, they prepare an extremely hot Spirit. Long Pepper they usually pickle with Vinegar for their Tables, and eat of it frequently in rainy Seasons, or to correct a phlegmatick Habit
of

of Body. With us here the Use of black Pepper is more general ; but the white, being less acrid, is more agreeable to nicer Palates. Long Pepper is chiefly confined to Medicines, because it is more acrid, and not so grateful in Sauces as the others. It must be noted, that when we meet with Pepper in Prescriptions without an Epithet, black Pepper is always to be understood, for the white and the long are never prescribed without their proper Distinctions.

These three *Species* of Pepper have the same Virtues (*viz.*) they heat, dry, attenuate, resolve, open, fortify the too lax Fibres of the Bowels, and excite their Oscillation, raise the Spirits, divide thick tough Humours, and accelerate the Motion of the Blood. Pepper is of singular Use in Coldness or Crudity of the Stomach, in colick Pains, and a cold *Intemperies* of the Brain. Some assert that in Powder it is heating ; and, on the other Hand, is cooling, when taken whole : But this appears to be a Mistake. It is true indeed the Powder, by adhering to the inner Coat of the Stomach, and by lying a long Time within its Foldings, in some Constitutions may produce Heat and Inflammation of the Part ; which seldom or never happens if the Grains are swallowed entire ; though their Efficacy is much the same. For it is evident that Pepper boiled or macerated with Victuals, whether it be whole or reduced to Powder, communicates an equal Acrimony to them : So that when taken whole, it is not cooling, but in the Bowels excites only a gentle Heat, and much less than the Powder.

Schroder observes, after *Galen*, that the Virtue of Pepper is very volatile ; the Reason of which is evident from its *Analysis*. Wherefore it ought never to be used in Extracts, nor in Medicines

which require long boiling, unless it be added towards the End.

Some Authors extol it greatly in intermitting Fevers, being taken to the Number of seven, eight, or nine Grains, either whole or grossly broken, a few Hours before the Paroxysm; and they even assert that a quartan Ague may be conquered by continuing the Use of it. We must confess that this Remedy, notwithstanding it has often met with but bad Success, has in many Cases been serviceable, either by provoking the Patient to vomit, or bringing on a plentiful Sweat towards the End of the Paroxysm. At least, it makes the cold Fit shorter; and with this Intention *Celsus*, L. 3. C. 12. recommends it with warm Water and Garlick. But if it be taken too late, or when the Fit is just beginning, *Etmuller* observes that it increases the Heat of the Fever.

It is likewise commended for an alexiterial Quality against coagulating Poisons, and for Catarrhs and Giddiness. However, the too frequent Use of it is hurtful; forasmuch as it disposes the Stomach, Intestines and the other Bowels, to Inflammation, and raises an inordinate Heat in the Blood and all the Humours of the Body. Upon these Accounts Persons of hot Temperaments, or who are subject to Inflammations, ought to avoid using it. The Dose in Substance is from gr. j. to x. and to ℥j. in Infusion.

Externally it is ordered in Apophlegmatisms, Gargles, and sneezing Powders, to incide viscid Lymph obstructing the Glands. It eases the Aching of a rotten Tooth, reduces a tumid *Uvula*, and removes Stitches of the Side, being applied immediately in the Beginning of the Disease. The *Indians* mix long Pepper with Ointments, which they use against Pains of the Limbs proceeding from

from Cold; and it is commended in a stubborn Head-Ache to be powdered and applied in a Bag to the coronal Suture, the Temples, or the lower Part of the Neck.

The Oil of Pepper is accounted excellent in Coldness of the Stomach, or a Laxness of its Fibres; and it is of great Service in a flatulent Colick. *Langius* often, with good Success, gave three or four Drops of it with the Extract of Gentian, before the Paroxysm in quartan Fevers. Being mixed with Oil of Bays, or of Nutmeg, and rubbed along the Spine, or upon the Stomach, it moderates the Coldness and Shivering of Agues. The same Lini-ment is very beneficial to Limbs affected with the Palsy.

Take nine Grains of black Pepper whole; and give them in white Wine two Hours before the Fit in intermitting Fevers, after proper Evacuations. Or,

Take of black Pepper grossly broken ℥j. Tops of Wormwood ℞j. Infuse them warm in ℥iij. of Vinegar for a Night, and strain for a Draught.

Take of long Pepper gr. vj. Powdered Alum gr. v. Mix, and make a Powder to be applied to the *Uvula*, when it is tumid and relaxed.

Take of long Pepper and white Amber ā q. f. Make a Powder to be applied in a Bag to the coronal Suture in a cold *Intemperies* of the Brain.

Take long Pepper in Powder q. v. Mix it with the White of an Egg and make a Cataplasm to be put upon the Temples or the lowest *Vertebra* of the Neck in a long Head-Ache, and to be often renewed.

Take

Take black Pepper and Cloves in Powder \bar{a} q. f. Make them into a Cataplasm with the White of an Egg, and apply it to the Side to remove Stitches.

Take long Pepper and white Hellebore \bar{a} ʒj. Marjoram \bar{z} fs. Make a Sneezing Powder to be used in sleepy Affections.

Take black and long Pepper \bar{a} ʒj. the Root of Arum, Pellitory, Cubebs, and Cardamoms, \bar{a} ʒij. Spirit of Sal Ammoniack \bar{z} ij. rectified Spirit of Wine \bar{z} vj. Let them macerate together for eight Days, and then decanting the Tincture add Oil of Amber and Lavender \bar{a} ʒij. Make a Liniment to be rubbed upon paralytick Limbs.

We have likewise another Kind of Pepper called *Piper Æthiopicum*, *Ethiopian Pepper*. *Piper Æthiopicum siliquosum*, J. B. It grows in long, slender, round, blackish Pods, which hang together in Clusters. It was well known to the *Arabians*, and the *Ethiopians* use it against the Tooth-ache; but it is seldom an Ingredient in Medicines*.

Some Years ago, a small Fruit or Kind of Berry was brought from the Island of *Jamaica*, under the Name of *Jamaica Pepper*; though it is entirely different from the several *Species* of Pepper above-mentioned. In the Shops it is called *Pimenta* or *Piper Jamaicense*. It is a round umbilicated Berry, gathered before it is ripe and dried in the Sun, generally larger than black Pepper, being some-

* It may be here proper to mention the *Capsicum* or *Guinea Pepper*. *Piper Indicum*, *sive Calecutium*, *sive Piper siliquastrum*, J. B. It is much the hottest and strongest of all the Peppers, and might therefore be taken advantageously in some Cases as a Medicine; but its Use at present is chiefly confined to the Kitchen.

times as large as a Juniper-Berry. The Bark is of a brown Colour, and includes two Seeds, together forming a Globe, each representing an Hemisphere; which are wrapped up in a dark green Membrane, and divided by a thin Film. It has a subacid, aromack or spicy Taste, partaking of the Taste of Cloves, Cinnamon, Pepper, &c. Whence in *England* it has obtained the Name of *All-Spice*.

The Tree is called *Myrtus Arborea Aromatica, foliis laurinis latioribus et subrotundis, Sloane Catal. Plant. Jamaic. Caryophyllus Aromaticus Americanus, Lauri acuminatis foliis, fructu orbiculari. Pluk. Phytograph. 155.* It grows in great Plenty in the Woods and mountainous Parts of *Jamaica*.

This Berry is an excellent Spice, and good in many Purposes of Physick. It strengthens the Stomach, helps Concoction, cheers the Spirits, and promotes the Motion of the Blood.

It yields in Distillation an essential Oil of a pleasant Smell, which sinks in Water.

ARTIC. XIII. Of CLOVES.

Upon these *Theophrastus, Dioscorides, and Galen,* are intirely silent: Yet *Serapio*, treating of Cloves, falsely cites the Authority of *Galen*. *Pliny* indeed, Lib. xii. Cap. 15. seems to mention them; for, says he, “There is still at this Time in the *Indies* a Grain which is something like Pepper; but larger, and of a more brittle Texture, and it is called *Garyophyllon*.” But the more judicious Criticks doubt whether this be the same with our Cloves; because these are not Grains, nor have they a Resemblance of Pepper. They therefore rather suspect the *Garyophyllon* of *Pliny* to be the officinal Cubebs. *Paulus Ægineta* first speaks of the Use of Cloves both in Food and Physick; and they were also known to the *Arabians*.

Caryophylli

Caryophylli Aromatici, Off. Καρυοφύλλον, *Pauli Æginet. Carunfel, Serapion*. They are a dry unripe Fruit, in Shape almost quadrangular and something like a Nail, about half an Inch long, of a blackish brown Colour and wrinkled, having on the Top four Points standing in a crucial Form, with a round Head or Cap in the Middle, which is composed of small Leaves folding over one another like Scales. When these Leaves are laid open we meet with a great Number of reddish brown Fibres, and among them arises out of a Cavity a four cornered Style of the same Colour. This Cap however is not always to be found, being very liable to be broken off in Carriage. They have an acrid, bitterish, and agreeable Taste, and a very fragrant Smell. The best are almost black, heavy, fat, hot in the Mouth, of a pleasant Smell, and give out a certain Moisture when they are pressed.

The Tree is called *Caryophyllus Aromaticus fructu oblongo*, C. B. P. 410. *Tshinka, Pison. Mantiss. Arom.* 177. It grows in the *Molucca* Islands, and particularly in *Ternate*, where it is industriously cultivated by the *Dutch*. When the Cloves are suffered to hang upon the Tree till they are fully ripe they are called *Antophylli*. These the *Dutch* preserve in Sugar, and eat them in long Voyages at Sea to help Digestion, and prevent the Scurvy.

Fresh Cloves yield a thick Oil by Expression, which is fragrant and of a reddish brown Colour. In Distillation they give up a large Quantity of essential Oil, which at first is transparent and yellowish, but afterwards inclines to red, and sinks in Water; and at last a Portion of thick empyreumatick Oil, with some acid Liquor. From the *Caput Mortuum*, after Calcination, is obtained a small Quantity of fixt neutral Salt.

The Use of this Fruit in the Kitchen is well known to every one. By Physicians it is reckoned heating and drying; to be good against cold Affections of the Brain, Giddiness, Weakness of Sight, Head-Ache, Fainting, Palpitation of the Heart, Debility of the Stomach, Impotency in Men, Suppression of the *Menses*, and hysterical Disorders. They resist the Contagion of the Air, being either eaten, or used in Fumigation. The Dose in Substance is from gr. iij. to ℥j. and in Infusion from ℥ss. to ℥ij. Externally they are made Use of in Bags, or Plaisters to apply to the Stomach against Vomiting, or Pains arising from Coldness. The Powder is sometimes scattered upon the Head to remove Pain or Heaviness; and in catarrhus Affections of the Brain, or Palsy of the Tongue, Cloves are useful to chew in the Mouth in order to draw forth the Spittle. The essential Oil has the same Virtues, and is also of great Service to carious Bones, and the Tooth-Ache. In Apoplexies it is rubbed upon the lower and back Part of the Head; and is taken inwardly to gutt. j. or ij.

Take Cloves and Cinnamon ā ℥j. Nutmeg gr. xv. Sugar ℥ss. Make a Powder to be taken in red Wine for Crudity or Flatulency of the Stomach, or for Vomitings.

Take of dry Angelica-Root ℥ij. Cloves, Nutmeg and Mace, ā ℥j. *Florentine* Orris and Lavender Flowers, ā ℥ss. solid Storax, male Frankincense and Amber, ā ℥j. Make a gross Powder, which is to be mixed with Cotton and sewed up into a Cap f. a. between a double Piece of Silk. A Cap made after this Manner may be warmed every Night with the Smoke of Amber and Mastich
thrown

thrown upon Gledes, and is proper to wear upon the Head in moist and pituitous Affections, or in long Pains arising from Catarrhs and Cold.

Take of the Oil of Cloves gutt. ij. Oil of Cinnamon gutt. viij. Tincture of Ambergrease gutt. j. Sugar-Candy ℥ss. Make a Powder to be kept in a Vessel close stopt. The Dose is ʒj. in red Wine or Sack to strengthen the Stomach and help Digestion.

ARTIC. XIV. Of the NUTMEG, and MACE.

Nux Moschata, Nux Myristica et Aromatica, Off. Giauziban, Avicen. Feuzbave vel Jusbaque, Serapion. Μοσχοκάρυον, Κάρυον μυρεψικόν, Μυρισικόν ἀρωμαλικόν, Græcor. recent. The Nutmeg is the Kernel of a Fruit, of a firm and compact Substance, yet easily breaking into Pieces in a Mortar. It is fattish, odorous, and somewhat wrinkled on the outside, where the Colour is almost cineritious; but within is marbled or variegated with reddish brown and whitish yellow Veins, running here and there without Order. The best are heavy and fat, and being pierced with a Needle emit an Oiliness. In the Shops we meet with two Sorts. The one has the Shape of an Olive, a pleasant aromatick Smell, and an acrid, aromatick Taste, with some astringency. This is called *Nux Moschata fœmina, the female Nutmeg*, and is very much used. The other is longer and almost cylindrical, has an aromatick Smell and Taste like the foregoing, but is inferior to it, and not so often made use of. This is called by some *Nux Moschata Mas, the male Nutmeg*. With these we sometimes find Nuts of irregular Figures, which are to be ranked under the *Lusus Naturæ*, or those Productions that deviate

deviate from the common Order of Nature. There are likewise other wild Nutmegs, many Species of which are distinguished by the *Dutch*; but they are never used in Physick.

J. Baubine supposes Nutmeg to be the *Κάρυα-ροιν* of *Theophrastus*, and that it was no Stranger to *Pliny*, being, as he affirms, the *Cinnamomum* of that Author; and that the expressed Juice, which was then called *Caryophon*, was the same with what occurs at this Time in the Shops by the Name of Oil of Nutmeg. This, however, is much to be doubted, since *Dioscorides* has said nothing either of Nutmeg or Mace: For the *Macer* which he speaks of was quite different from the Mace of our Shops, it being the Bark of a certain Wood, though at present it is very uncertain of what Sort. The *Arabians* were very well acquainted both with Nutmeg and Mace, and the first who mentions them is *Avicenna*.

The Tree bearing the female Nutmeg is distinguished, *Nux Moschata fructu rotundo*, C. B. P. 407. *Pala*, *Pison*. *Mantifs*. *Arom*. 173. It grows in the *Molucca* Islands spontaneously, and is cultivated in *Banda*.

Macis, *Off*. *Bongo-Pala Moluccensibus*, *Pison*. *Mantifs*. *Arom*. 173. *Bisbese*, *Serapion*. *Befbabe*. *Avicen*. Mace is the Produce of the same Tree, it being a Sort of membranaceous Substance that lies underneath the soft juicy Covering of the Fruit, which is like a Walnut, or small Peach, and is extended upon the hard woody Shell that incloses the Nutmeg. The best is tough and full of Oil with a Colour bordering upon that of Saffron, and an extremely fragrant Smell.

Nutmeg contains a large Quantity both of thin and thick essential Oil, united with some acid Salt and astringent Earth. A twofold Oil is got from

it by the Means of Distillation; for the Nuts bruised and macerated in a large Proportion of Water, yield about an Ounce of thinner Oil for every Pound of Nutmeg; and when the Distillation is ended a thick Oil swims upon the Water, which is like Suet, and almost void of aromattick Virtue. From three Ounces and two Drachms of Nutmeg, by Expression, are obtained sixteen Ounces of Oil of the Consistence of Suet, with the Smell and Taste of Nutmeg.

In Mace, the Oil is thinner and more copious; whereof the first Portion coming over in Distillation, is pellucid like Water, and of an excellent Smell and Taste; the second has a Cast of yellow, and the third, if the Fire be strong, is reddish.

The whole is so subtile and volatile, that a great Part of it is lost, unless the Bottles in which it is put be well stoppt. An Oil is likewise drawn from Mace by Expression, which is thinner than the expressed Oil of Nutmeg, being nearly of the Consistence of Lard.

Nutmeg is useful not only for seasoning Food, but also in Physick. It is stomachick, helps Concoction, relieves Vomiting, fortifies the Bowels, discusses Wind, appeases colick Pains, stops Loosenesses, increases the Motion of the Blood, resists Poison, and is of great Service in Catarrhs, and cold Affections of the Nerves. *Etmuller* recommends it against a Palsy of the Parts which are subservient to Deglutition to be chewed in the Mouth, and swallowed gradually. It likewise induces Sleep, and on this Account an immoderate Use of it ought to be avoided; for *Bontius*, in his Notes upon *Garcias*, tells us of several Persons who by using it too freely have lain one or two Days without either Speech or Motion, much in
the

the same Manner as if they had been seized with a *Carus*. The *Dutch* also observe that the Nuts when they are candied, being eaten every Day, or in too large Quantities, occasion Drowsiness and Loss of Memory. Moreover, they oppress the Stomach, disorder Digestion, and spoil the Appetite, as well by their oily Particles, which render the gastrick Juice inert, as by their active Particles, which dispose the Coats of the Stomach, to Inflammation. In flatulent Disorders of the Womb, in Pain or Inflation of it after Delivery proceeding from Cold, a Fumigation of Nutmeg is recommended as an approved Remedy. It is sometimes toasted to make it more astringent, and is thus ordered in Loosenesses and Dysenteries. The Dose is from ℥ss. to ʒss. in Substance, and to ʒj. toasted.

Mace has the same Virtues as Nutmeg, only it is less astringent. In too large a Quantity likewise it is attended with equal Danger. *Casp. Hoffman* speaks of a Girl, who, to provoke her menstrual Discharges, taking over largely of it, was delirious for some Hours after.

Take of Nutmeg ʒss. Cinnamon ʒij. Cloves ʒss. Sugar ʒj. Mix and make a Powder, of which take ʒij. in a Draught of Wine after Meals to help Digestion.

Take of Nutmeg toasted ʒss. *Japan* Earth ℥j. Quince-Marmalade q. s. to make a Bolus, to be repeated two or three Times a Day in a *Diarrhœa*.

Take of Nutmeg ʒj. *Venice* Treacle ʒss. *Diacodium* q. s. Make a Bolus, to be given in colick Pains, a Dysentery, *Tenesmus*, &c.

Take of Mace ʒss. Anise and Coriander Seed ā ℥j. white Sugar ʒiss. Bruise them grossly and infuse for some Hours in a Glass of

Wine; then strain and let the Liquor be drank to remove a flatulent Colick.

The Oils by Distillation and Expression, both of Nutmeg and Mace, having the same Virtues, are made use of indifferently. They do good in Gripings of the Belly and nephritick Pains, given inwardly from gutt. j. to iv. Externally they are commended against nervous Affections, the Palsy, Gout, and Catarrhs. They strengthen the Stomach, stop Vomiting and the Hiccup, and help the Concoction of Food, being rubbed upon the Region of the Stomach: Upon the Navel they ease the Gripes in Children, and upon the Temples have a gentle Quality of procuring Sleep. Mr. *Ray* recommends the Oil of Nutmeg to anoint the Breasts of young Maids that are too small, assuring us, that it makes them grow larger in a short Time. The Oils of both are often used in cathartick Pills as Correctors, and are frequently mixed with apoplectick, cephalick, and hysterick Balsams.

Take of the Oil of Nutmeg by Expression ʒij.
Balsam of *Peru* ʒfs. the distilled Oils of Mace, Wormwood, Mint, Cinnamon, and Cloves, ā gutt. xij. Make a Balsam to be rubbed upon the Region of the Heart and Stomach, in Swooning, Anxiety at the Heart, Hiccup, *Nausea*, Vomiting, bad Digestion, and Weakness of the Stomach.

C H A P. VII.

Of LIQUID and CONCRETED JUICES of PLANTS.

BY the Word *Juice*, we here understand, not all the Juices of Plants in general and without Distinction, but such only as are used in Physick, distilling from their respective Plants either of their own accord, or more frequently by Incisions; and which are sometimes termed *Lachrymæ*, from their appearing in the Form of Tears or Drops as they fall down. These Juices, for the most Part, concrete, either into a Resin, or a Gum, or into a Substance of a middle Nature between both, which is called a Gum-Resin. In the Shops they are often confounded, the Name of Gum being there given to some Resins, and likewise to many Gum-Resins; but in order to distinguish them with greater Accuracy, we shall proceed to explain what is properly a Resin, a Gum, and a Gum-Resin.

A Resin is a fat, oily, inflammable Juice, soluble in Oil, but not in Water. It consists of sulphureous Parts united with an acid Salt. In Respect to its Consistence it is two-fold; the one liquid, which is viscid and tenacious; the other dry or solid, which is commonly friable, yet becomes soft by Heat. Among the liquid Resins are reckoned the Balm of *Gilead*, the Balsam of *Peru*, of *Tolu*, *Capivi*, Liquid Amber, Liquid Storax, the different Sorts of Turpentine, and Labdanum. In the Class of solid Resins are Storax, Benzoine, Tacamahac, Olibanum, Mastich, Sandarach, Dragon's Blood, Copal, Anime, Caranna, Elemi, Hederæ, and Camphore.

A Gum is a concreted Juice which easily dissolves in Water. In the Fire it neither melts nor flames, but only makes a crackling Noise. It is compounded of a small Portion of Sulphur combined with Earth, Water, and Salt, so as to constitute a Mucilage. Of this Sort are Gum Tragacanth, Arabick, the Gum of Plumb Trees, &c. and Manna.

A Gum-Resin is a concreted Juice equally soluble in Water and in Oils, either wholly or in the greatest Part. It is compounded of resinous and gummous Parts united together. If with these there be a sufficient Quantity of saline Parts, the whole is intirely soluble in Water; but if the Proportion of this Salt be not large, there remains in the Water something of a resinous Substance, which is only capable of being dissolved in Oil or Spirit of Wine. In this Rank are Bdelium, Myrrh, Assafœtida, Ammoniack, Euphorbium, Galbanum, Opopanax, Sagapenum, and Sarcocol.

We shall now give an Account of such of these as are commonly prescribed in Physick.

Of LIQUID RESINS.

ARTIC. I. Of the BALSAM of MECCA or BALM of GILEAD.

Opobalsamum, Balsamelæon, Balsamum Judaicum, Gileadense, Syriacum, E Meccâ, Constantinopolitanum, Album, Off. Ὀποβάλαμον, Græcor. This is a precious liquid Resin, of a whitish Colour, or something yellowish, having a fragrant Smell approaching to the Smell of Citron, and an acrid aromatick Taste. It ought to be chosen fresh, fluid, oily, and fragrant in its Smell; being not so valuable

able when it is thick, old, and adulterated with Turpentine, or other Mixtures, which the Smell and Taste easily discover.

The Plant, or Shrub, which yields this Balsam, is called *Balsamum Syriacum*, *Rutæ folio*, C. B. P. 400. *Balsamum verum*, J. B. 1. 298. *Balsamum Lentisci folio*, *Ægyptiacum*, Bellon. *Observ. Balsamum*, P. *Alpin.* 48.

Authors are not agreed concerning its native Soil. *Theophrastus*, *Dioscorides*, *Pliny*, and others, have supposed that it grew in *Judæa*: And they tell us that it was cultivated in the Valley of *Fericho* in two Gardens, the one consisting of about twenty Acres of Land, the other not so much. Hence it was called *Balsamum Judaicum*. *Pliny* asserts that it grew no where else but in *Judæa*; and relates that the *Jews*, in the last War between them and the *Romans*, destroyed all the Trees they could, and that the *Romans*, on the other Hand, fought to defend and get Possession of them. *Theophrastus* asserts that it grows no where spontaneously; but *Dioscorides* says it grows not only in *Judæa*, but likewise in *Egypt*. According to *Strabo* it grows in *Arabia*, in the maritime Parts of the Country of the *Sabæans*. In fine, it appears that neither *Judæa* nor *Egypt* have been its native Soil; for at this Time no Balsam-Trees are found in *Judæa*, nor were any to be found in the Time of *Bellonius*, having, as he supposes, been either entirely neglected, or plucked up, during the Invasion of the *Turks*. He saw them no where but in the *Sultan's* Gardens in one of the Suburbs of *Memphis*, now called *Cairo*, where they were cultivated with great Care; and, according to his Account, had been transplanted thither, at a vast Expence, from *Arabia fœlix*. Moreover, the same Author affirms that formerly, and likewise in his

Time, they were to be met with in *Arabia felix*, whence the Wood and Fruit had been brought in all Ages to *Memphis*, with other *Arabian* Commodities. When *Augustin Lippi* arrived at *Cairo* in the Year 1704, there were no Balsam-Trees remaining in the *Sultan's* Gardens, they having all perished long before. He relates, in his Epistles to *M. Fagon*, Physician to *Lewis XIV.* that they are only to be found growing wild in *Mecca* and other Provinces of *Arabia felix*, as he was informed by a certain Prince, Son of the King of *Mecca*; from whom also he learnt the Method of extracting the Balsam. We may therefore conclude that the Balsam-Tree was always a Native of *Arabia felix*, and that it never grew spontaneously either in *Egypt* or *Judæa*.

The Balsam of *Mecca*, according to *Alpinus*, when it is first drawn from the Tree, is of a white Colour, and an excellent, penetrating Smell, something like Turpentine, but much more fragrant, and of a bitter, acrid, astringent Taste. At first it is thick and turbid, like the Oil of Olives when first expressed from the Fruit; afterwards it becomes extremely thin, limpid and light: Its Colour turns greenish, then approaches to the Colour of Gold, and at length resembles Honey. It also grows thick and tenacious with Age, like Turpentine, and is greatly deprived of its Smell: Being dropt into Water, when fresh, it does not sink in the Water by Reason of its Lightness, but being let fall from a considerable Height, it subsides a while beneath its Surface, whence it almost continually rises up and expands itself over the Water; and mixes with it so, that it is very difficultly separated. In a short Time after, it concretes in the Water, and coagulates, when, by an Iron-Pin or such like Instrument, the whole may be
taken

taken out entire, which then appears of a white Colour, like Milk. And these are the Marks of the genuine fresh Balsam.

The Ancients gathered only the Balsam which issued from slight Incisions in the Bark of the Tree, and in very small Quantities. At present, according to *Augustin Lippi*, there are three Sorts. The first may be called the true Balsam of *Mecca*, being the Juice which flows either of its own Accord or from Wounds made in the Bark of the Tree; but the Quantity obtained is so small that it scarce suffices for the *Grandeas*, and other Inhabitants of the Country, and therefore is very seldom carried abroad. The two other Sorts are procured thus. The small Branches, with the Leaves of the Tree, are put into a Pot and covered with Water, and when the Water boils, a thin limpid Oil swims upon the Top, which is carefully scummed off. This seldom comes to us, except by Way of Present to some Person of Distinction. It is reserved chiefly for the Use of the Ladies, who esteem it much as a Cosmetick, and Unguent for their Hair. The boiling being continued, another Oil rises to the Surface, somewhat thicker than the former, and neither so fragrant nor so valuable. This is sent away by *Caravans* to *Cairo*, and from thence into other Nations, and is the common Sort in *Europe*.

It yields in Distillation, when fresh, a very fragrant and thin Oil, and a reddish Kind of Resin remains behind. This, by a stronger Degree of Heat, gives up a Portion of thicker Oil, pretty much like Oil of Turpentine, and at the last a reddish Oil with some Drops of acid Liquor. Its Efficacy is chiefly owing to the thin and volatile Oil. The Virtues of this Balsam are undoubtedly very excellent, but are much impaired by long keeping. It has the Reputation of removing Pu-
trefaction

trefaction and Corruption of the Bowels, of being serviceable in Abscesses of the Lungs, Liver, and Kidneys, and likewise against the Bites and Stings of Serpents and other venomous Animals. In Times of Pestilence, the *Egyptians* reckon it inferior to nothing as a Preservative, being taken every Day in the Quantity of half a Drachm; and they frequently cure putrid Fevers by giving it till the Patient sweats plentifully. In chronical Fevers, in Crudity and Coldness of the Humours, and Obstructions of the Bowels, they find nothing more efficacious than two Scruples or a Drachm of this Balsam taken every Day. In short, according to *Alpinus*, they make use of no Medicine more than this, giving it in almost all Diseases; in those especially which are owing to a cold and moist *Intemperies*, or to Poisons. The Women also take it often with Success to cure Barrenness; and use it for the same Purpose by way of Suppository and Fumigation. In a *Gonorrhœa*, *Fluor Albus*, and Dysentery, it is given to good Advantage from twelve Drops to twenty every Day in the Morning fasting. Moreover, it is commended for dissolving crude Tubercles and Infarctions of the Lungs; and oftentimes does good in phtisical Dispositions, as well by restoring the Tone of the pulmonary Fibres, as by tempering the Acrimony of the Serum which falls upon the Lungs, and inciding the viscid Humours: And on this Account it is also beneficial to Asthmaticks. In Ulcers of the Lungs, Kidneys, and Bladder, and other internal Parts, it is advantageously prescribed, provided that the Ulcers are not erysipelatous, or attended, as they often are, with Inflammation; for then, as *Fred. Hoffman* observes, all Things of this Nature are extremely prejudicial, by increasing the Inflammation, and suppressing the Discharge of the

the

the purulent Matter. Therefore, whenever these Cafes are joined with an inflammatory Fever, Balsams ought to be avoided, or at least ought to be given with very great Caution.

It has been so famous in all Ages for curing Wounds externally, that other Vulneraries have usually been called Balsams from it; and by this Title Empiricks and Quacks endeavour to recommend their Medicines to the Vulgar. *Dioscorides* says it deterges and purifies fordid Ulcers, and *Prosper Alpinus* after him observes the same. Particular Instances might be brought of dangerous Wounds which have been healed in a little Time by this Balsam: But we must take Notice that it is principally useful in simple Wounds, or a mere Solution of Continuity, to procure a more speedy Coalition of the divided Parts; for when Wounds are attended with Contusion or Laceration of the fleshy Fibres, or others, a Suppuration always succeeds, and consequently a Re-union of the Parts is not to be expected from balsamick Applications; which in these Circumstances are prejudicial, and prolong the Cure.

The Dose is from gutt. vj. to ℥ss. in Sugar, or made into an Emulsion by dissolving it with the Yolk of an Egg in Broth, Wine, or any other convenient Liquor.

Take of the Balsam of *Mecca* gutt. xij. Sugar finely powdered q. s. Make a Bolus to be given in a *Gonorrhœa*, *Fluor Albus*, or *Dysentery*.

Take of the Balsam of *Mecca* ℥ss. the Yolks of Eggs N^o. ij. Sugar boiled in Rose-Water to the Consistence of a Syrup ℥ij. Mix and give a Spoonful in ℥vj. of the pectoral Decoction, or in a Draught of warm Milk, for a troublesome

some Cough, or in the Beginning of a Consumption, to resolve crude Tubercles of the Lungs.

Besides the Balsam, we likewise use the Fruit of the same Tree, which in the Shops is called *Carpobalsamum*. It is an oblong, roundish Berry, less than a Pea, ending in a small Point, and adhering to a short Pedicle. It has a brown, wrinkled Bark, marked with four Ribs, including, when the Fruit is perfectly ripe, a little balsamick, oily, whitish Pith, which has an agreeable Smell and Taste of the true Balsam. It ought to be yellowish, full, large, heavy, of an hot Taste in the Mouth, and gentle Smell of the Balsam. When it is old, carious, crumbling into Powder, empty, light and void of Smell, it is not fit for Use. It is an Ingredient in *Venice Treacle* and *Mithridate*.

The *Xylobalsamum* or Wood of the Balsam-Tree is now very seldom found in the Shops.

ARTIC. II. Of the BALSAM of PERU.

Several resinous Juices which are brought over to us from *America*, are dignified with the Name of Balsams, as having many excellent Virtues in common with the Balsam of *Mecca*. Among these the Balsam of *Peru*, the Balsam of *Tolu*, and the Balsam of *Capivi*, are the most noted. The Balsam of *Peru* is two-fold (*viz.*) the white and the brown.

I. *Balsamum Peruvianum album, Off.* The white Balsam of *Peru* is a fluid resinous Juice, of a tenacious Consistence, but somewhat thinner than Turpentine. It is inflammable, transparent, of a yellowish white Colour, a somewhat acrid bitterish Taste, and fragrant sweet Smell, something like Storax. It is brought from *Peru*, and other Parts of *America* belonging to *Spain*.

2. *Balsamum*

2. *Balsamum Peruvianum fuscum, vel, Nigricans, Off.* The brown Balsam of *Peru* is likewise a fluid, resinous, inflammable Juice, of the Consistence of Turpentine; having a dark reddish Colour, a fragrant Smell like Benzoine, and a gentle pungent, subacid Taste. When it appears black, and has an unpleasant Scent, as if it were burnt or smoaked, it is not fit for Use.

They are both obtained from the same Tree, which is called *Hoitziloxitl, seu Arbor Balsami Indici, Balsamifera prima, Hernand. 51. Balsamum ex Peru, J. B. 1. 295. Cabureiba, seu Balsamum Peruvianum, Pison. 119. Cabui Iba, Marcgrav. 137.* It grows in *Peru*, and other southern Parts of *America*. The white Balsam runs from an Incision in the Bark of the Tree; and the brown is got by a Method of Decoction much used by the *Indians*. They cast small Pieces of the Trunk, Bark, and Branches, into a large Cauldron full of Water, which they suffer to boil as long as convenient. When the Water has stood to cool, the Oil, which swims upon it, is gathered in Shells and put by.

The white Balsam, according to *Paul Herman*, being chymically treated, gives up an Oil which immediately concretes into a Salt resembling Sugar, and white like Camphore, consisting of fine oily Particles, and a volatile acid Salt intimately combined.

The Balsam of *Peru* (either the white or brown) is commended for the same Uses as the Balsam of *Mecca*, and is given in the same Manner, from four Drops to twelve in Asthmas, Consumptions, nephritick Pains, and Suppression of the *Menses*. Externally it eases Pains arising from cold Humours, restores contracted Nerves, and is excellent for curing Wounds. It is adviseable to be cautious in using it, because of its strong Smell, which disorders

orders and oppresses the Head, and sometimes causes Swooning. *Etmuller* observes that it is much more acrid and disagreeable when dissolved with the Yolk of an Egg, than when taken by itself.

Take of the Conserve of red Roses ʒj. *Luca-tellus's* Balsam ʒss. Balsam of *Peru* gutt. iij. Make a Bolus for an old Cough, a recent pulmonary Consumption, internal Ulcers, Falls, Bruises, and Dysenteries.

ARTIC. III. Of the BALSAM of TOLU.

Balsamum Tolutanum, Off. Balsamum solidum, quorund. This is a tough resinous Juice of a middle Consistence between a Liquid and a Solid, but growing dry and brittle by Age. It has a yellowish brown or somewhat golden Colour, and a very fragrant Smell approaching to the Smell of Benzoin and Citron, with a pleasant sweet Taste, not in the least nauseous like the other Balsams. It is brought in small Gourds from a southern Province of *America* lying between *Carthagena* and *Nombre de Dios*, which the *Indians* call *Tolu*, and the *Spaniards* *Honduras*.

The Tree which produces it is called *Balsamum Tolutanum, foliis Ceratiæ similibus, quod candidum est, C. B. P. 401. Balsamum de Tolu, J. B. 1. 196. Balsamum Provinciæ Tolu, Balsamifera, quarta, Hernandez. 53.* An Incision is made in the Bark during the hot Seasons, and the Juice issuing from it is received by Spoons formed of a black Kind of Wax. Afterwards it is put into Gourds, or other Vessels prepared for it.

This Balsam has the same Virtues ascribed to it as the Balsam of *Peru*, and by some is accounted preferable. In *England* the Use of it is more general, espec-

especially in Consumptions and Ulcers of the internal Parts. It is particularly celebrated for healing Wounds, and defending them from Putrefaction, in Wounds of the Joints, or Cuts, and Punctures of the Nerves. It has no Acrimony like the *Peruvian* Balsam, and therefore more agreeable to take dissolved in Liquors. A Syrup is ordered from it in the *London Dispensatory* which is much used in the *English* Shops.

ARTIC. IV. Of the BALSAM of CAPIVI.

Balsamum Brasiliense, Balsamum Oleumve Copaiba, Copaiva, vel Copaii, Off. Capiuus, Dale Pharmacol. This is a liquid resinous Juice of the Consistence of Oil, when fresh, but after some Time growing thick and glutinous. It is generally of a yellowish white Colour, an acrid, bitter, aromattick Taste, and fragrant Smell, resembling the Smell of the Wood called *Calambourg*. It is brought from *Brafile* into *Europe* by the *Portugueze*. In the Shops are two Sorts: The one is more limpid, of a pale or yellowish Colour, an agreeable Smell and bitterish Taste, being thinner or thicker, approaching to the Consistence of Turpentine, according to the Difference of its Age; and this Sort is the best: The other is not so clear, of a whitish Colour, and a thicker Consistence, like Honey; having withal an unpleasant terebinthinous Smell, and nauseous bitter Taste, with a certain Proportion of Water at the Bottom. This Sort seems either to be adulterated, or to be drawn from the Bark and Branches of the Tree by Decoction; and therefore is not esteemed.

The true Balsam is got by Incision from a Tree which is called *Copaiba. Pison. et Marcgrav. Arbor balsamifera Brasiliensis, fructu monospermo, Raii Hist.*

Hist. 1659. It grows in the inland Parts of *Brafile*, as also in *Maranbon*, and the neighbouring *Antilles*.

This Balsam in Distillation with a large Quantity of Water, yielded a clear Oil of a pleasant subtile Smell; and the distilled Water had the same Smell. The Portion remaining upon the Water in the Cucurbit had the Consistence and Smell of a Resin. This being distilled from a Retort gave up a certain Portion of etherial Oil, a pretty large Quantity of subacid Liquor, and at last some thick empyreumatick Oil, which at first was red, and afterwards brown. A shining, rare, light, black Mass or Coal, was left behind, which afforded no Salt by Lixiviation. Hence it appears that the Balsam of *Capivi* is compounded of both subtile and thick Oil united with some acid Salt; and its Virtues are owing to these Principles.

Thomas Fuller, a Physician of the University of *Cambridge*, observes that this Balsam communicates no violet Smell to the Urine like Turpentine, but imbues it with a manifest bitter Taste. The same Author extols it for many extraordinary Properties *. It softens the muriatick Saltness of the Serum, the Spittle, and the Urine, by involving the saline *Spicula*. It restores the Blood when impoverished by a Loss of its balsamick Parts: Cures its scorbutick, rancid and putredinous Cachexy: Is prevalent, either externally, or internally, against Ulcers; for it both cleanses and heals them. It cures all Sorts of Wounds, and particularly those of the Nerves: Stops Dysenteries and other Fluxes of the Belly; as also the *Fluor Albus* and *Gonorrbœa*. “ It wonderfully deterges (says *Dr. Fuller*) “ the Reins, Ureters, and Bladder, when obstruct- “ ed with Sand, *Mucus*, or Pus; strengthens them

* See his Dispensatory, p. 326. 327. of the *English* Edition.

“ when relaxed, and heals them when ulcerated.
 “ It provokes Urine, extinguishes its Heat, and
 “ cleanses off its bloody, foul, and purulent Con-
 “ tents more effectually than any Thing I ever
 “ yet met with *.”

He commends it likewise as the best of all Thoracicks. “ It deterges (says he) the *Bronchia*
 “ and Vesicles, recovers the Tone of the Lungs,
 “ heals their Breaches, and (as I have thought)
 “ even dissolves the *Tubercula cruda*; for I have
 “ seen where this Balsam alone hath (beyond all
 “ Expectation) cured dry deep Coughs, that ap-
 “ peared horribly dangerous, and manifestly threat-
 “ ened a Consumption †.

“ And notwithstanding it is intensely bitter, and
 “ manifestly hot, yet (which is an admirable Ad-
 “ vantage of it) I have found it mighty agreeable
 “ to hec tick Persons, and rather abates than aug-
 “ ments their Heats, as one might fear it would.
 “ The Reason of which is, I suppose, because it
 “ so powerfully subdues Saltness and Acrimony,
 “ and obliterates putredinous Inquinations.”

It is given either in a soft Egg, or mixed with Wine, or any other convenient Vehicle ||, or in the Form of a Bolus with Sugar, Liquorice-Root, or other proper Powders, from gutt. v. to .xv. or .xx. If it be given to zij. or ziiij. for a Dose, it purges like Turpentine.

* To this he adds. “ A Patient of mine, now living, who
 “ voided mere Chyle instead of Urine, and not one Drop of
 “ Water with it, and had great Pains and Weakness, was re-
 “ stored to perfect Health and Soundness by this Medicine.”

† “ And I have more than once (says he) cured with it
 “ Coughing up of Blood and Pus in frightful Quantities. At
 “ this very Time of Writing, I have a poor Workman that
 “ is an eminent Instance of it.”

|| The best Way of taking it, in a liquid Form, is to drop it into a Glass of Water.

Q

Take

Take of the Balsam of *Capivi* ℥ss. Yolks of Eggs N^o. ij. Syrup of Ground Ivy ℥ij. Strong white Wine ℥viiij. Make a Mixture, of which let a Spoonful or two be taken Night and Morning, for an Ulcer of the Lungs, or Tubercles.

Or,

Take of the Balsam of *Capivi* gutt. xv. Licorice-Root powdered and Amber prepared ā gr. xv. *Poterius's* Antihectick gr. xij. Syrup of Ground Ivy q. f. to make a Bolus.

Take of Blood-Stone, Mastich, and Dragon's Blood ā ℥ss. *Japan* Earth and red Coral prepared ā ℥j. Balsam of *Capivi* q. f. Mix and make an Electuary. The Dose is ℥j. twice a Day in the *Fluor Albus*.

Take of Rhubarb powdered ℥iiij. the mercurial *Panacea* ℥j. Balsam of *Capivi* ℥iss. Mix and make an Electuary, to be taken to ℥j. every Day, Morning and Evening in a Clap, a mercurial Purge being given every fourth Day.

However, in a febrile Effervescence we ought to be cautious of using Balsams internally ; because they raise an inflammatory Heat in the Blood : Whence by giving them improperly, or too long, or in too large a Dose, a Fever is excited, and Hemorrhages, Head-Aches, Palpitations of the Heart, and Inflammations of the Bowels succeed. They likewise often occasion Loss of Appetite, and bad Digestion ; forasmuch as by their resinous Particles they render the Ferment of the Stomach inert. Wherefore they ought to be given at a good Distance from Meals, and in moderate Doses.

ARTIC. V. Of TURPENTINE.

In the Shops the Name of Turpentine is given to four Kinds of resinous Juices ; though it properly belongs to one only, which is the Juice of the *Terebinthus*. These four Sorts of Turpentine are that of *Chio*, *Venice*, *Strasburgh*, and the *Common*.

I. *Terebinthina Chia vel Cypria*, *Off.* Πηλὴν τερεμινθίνην, *Græcor.* *Terebinthina*, *Latinor.* *Terebenthina vel Terminthina*, *quorumd.* and corruptedly *Ferentina*, *Ferebinthina*, *Trebenthina*, *Trementina*, or *Fermentina*. *Helc Alimbath* or *Helt Alimbach*, *Arab.* *Chio*, or *Cyprus*. Turpentine is a liquid resinous Juice which flows from the *Terebinthus*, of a whitish Colour, yellowish, glassy, or whitish inclining a little to blue, sometimes transparent, of a thicker or thinner Consistence, tough and glutinous, sometimes so dry that it is reducible to Crumbles by rubbing betwixt the Fingers, though oftener yielding and sticking to them, like a thicker Sort of Honey. The Smell is acrid, and not unpleasent, pretty much like the Smell of *Venice* Turpentine, especially when it is rubbed in the Hands or thrown upon Gledes ; and the Taste is moderately bitter and acrid. The best is brought from the Islands of *Chio* and *Cyprus*, whence it took its Name. It was known and frequently used by the ancient *Greeks*.

The Tree is distinguished, *Terebinthus Vulgaris*, *C. B. P.* *Terebinthus*, *J. B.* It grows plentifully not only in *Chio* and *Cyprus*, but also in *Languedoc*. The Turpentine is got by cutting or boring into the Trunk and Branches of the Tree, from whence it distils in the Form of a liquid Juice, which is afterwards gradually inspissated, and in Time becomes dry.

Kæmpfer speaks of an oriental Turpentine, not unlike this, which is got in *Persia*, *Media*, &c. It is much used by the Eastern People, being very common in the Shops in *Turkey*, *Persia*, and *Arabia*. In the *Turkish* Language it is called *Sakkis*, and in the *Persian*, *Kondruun*.

In a chymical *Analysis*, two Pounds and an half of *Chio*-Turpentine yielded nine Ounces of thin limpid Oil of the Colour of Water, five Ounces of yellowish Oil, and twenty two Ounces of thick reddish Oil, with sixty Grains of acid Liquor. The *Caput mortuum* left behind in the Retort weighed seven Drachms and thirty Grains, which was calcined for eight Hours, but no fixt Salt was afterwards obtained from it.

The Use of this Turpentine, as of the others, is either external or internal. Externally it is emollient, digestive, discutient, and resolvent; deterges Ulcers, and heals fresh Wounds; but with us it is seldom thus applied, because the Turpentine of the Larch-Tree is more common, cheaper, and nothing inferior in Virtue: Yet as this Sort is less acrid, it is often met with in Prescriptions for inward Use. It is accounted vulnerary and balsamick, and is undoubtedly an excellent Medicine for detarging and cleansing internal Ulcers; is given to Advantage in Exulcerations of the Lungs, Stomach, Intestines, Liver, Kidneys, Bladder, and the other Bowels, and is good in an old Cough and recent Consumption. It has a diuretick Property, giving a violet Smell to the Urine, and is serviceable in Heat or Suppression of the Urine, or in nephritick Pains, when they proceed from a glutinous and acrid Serum. It frequently removes Gravel by dissolving the slimy Matter which envelopes and holds it together: But we must always observe not to give it before the Inflammation

on has been quieted. It ought likewise to be omitted in Case of a Stone in the Kidneys too large to pass through the Ureters, for then it is either entirely useleſs, as having no lithontriptick Qualities, or it cauſes perhaps an Inflammation of the Part affected, which before had a Tendency thereto. However, ſome Phyſicians preſcribe it to prevent nephritick Diſorders to be taken a long Time together, whereby the viſcid Serum, which would otherwiſe form itſelf into ſtony Concretions, is diſſolved. It is moreover greatly extolled againſt the Gout and all other Diſeaſes of the Joints, the Quantity of an Haſel-Nut, as *Avicenna* directs, being taken every Morning faſting: And it is no Wonder that a Medicine which is good in the Stone, ſhould be likewiſe ſerviceable in the Gout, ſince theſe Diſeaſes are very near a-kin, having both the ſame continent or material Cauſe; whence they are frequently obſerved to change into each other. This Turpentine is alſo purgative. *Galen* reckons it a good Purge for old People. He uſed to give the Quantity of a large Filberd or more; and ſome give it to half an Ounce or upwards; But it is ſeldom ordered for this Purpoſe in the preſent Practice. The Doſe is generally from ʒſs. to ʒiſs. in a Bolus, or diſſolved with a little of the Yolk of an Egg in an aqueous Vehicle. Sometimes it is boiled to a thick Conſiſtence and made into Pills; but as the ſpirituſous Parts of the Turpentine are greatly evaporated by Decoction, this Management is thought improper. From *Chio* Turpentine may be prepared a Spirit, an Oil, and a Reſin or Colophony; but theſe Preparations of it are ſeldom found in the Shops, becauſe *Venice* Turpentine, which is not ſo ſcarce, is much fitter for this Treatment, and yields a larger Proportion of Spirit.

2. *Terebintbina Veneta, Larigna vel Laricea, Off.* Λάριξ, *Græcor.* Venice Turpentine, or the Turpentine of the Larch-Tree, is a liquid resinous Substance, viscid and tenacious, somewhat thicker than Oil, but thinner than Honey, yielding with some Degree of Resistance to the Finger, and running from it equally every Way. It is something transparent like Glass, of a yellowish Colour, and fragrant, acrid, resinous Smell, not unpleasant, though a little strong. The Taste is subtile, and bitterish; more acrid and hotter than *Cbio* Turpentine. It ought to be fresh, liquid, transparent, whitish, free from Filthiness, and of such a Consistence as to continue upon the Nail where it is put without running. It is called the Turpentine of *Venice*, because it was formerly brought from that Place, but at this Time it comes from *Dauphiny* and *Savoy* *. This Resin was known to the ancient *Greeks*, and in the Time of *Galen* was sometimes sold, as was also the Turpentine of the Fir-Tree, for the true Resin of the *Terebintbus*.

The Tree producing *Venice* Turpentine is called *Larix, folio deciduo, conifera*, J. B. 1. 265. *Larix, Dodon.* 868. It grows upon the *Alps* of *France*, *Savoy*, *Grison*, *Stiria* and *Carinthia*, as also upon the *Apennine* Hills in great Plenty. The Turpentine runs from it either of itself or by Incision in the Spring and Autumn; and in some Seasons a Sort of Manna exudes from it, which is therefore called *Manna Laricea*. The same Tree likewise produces Agarick. But of these in their proper Places.

* “ What goes now under this Name (in our Shops) is generally brought from *New England*. Whether produced from the Fir, or Pine, or Spruce Trees, or from them all is uncertain. The finer Sort comes very near the *Venice* Turpentine, both in Colour and Consistence, as the more ordinary is like what is gotten from the Pine.” *Miller’s Botanicum Officinale*. Upon this Account, I suppose, *Venice* Turpentine is now struck out of the Catalogue of the College.

In a chymical *Analysis*, two Pounds and eleven Ounces of *Venice* Turpentine distilled in B. V. yielded one Drachm and an half of subacid Phlegm; and ten Ounces, six Drachms and an half of subtile clear Oil. The *Residuum* being put into a Retort, and distilled with a reverberatory Fire, which was gradually increased, gave up two Ounces and two Drachms of acid Phlegm: A little urinous Phlegm; with twelve Ounces, two Drachms and fifty four Grains of yellowish Oil something thicker than the former, and at last seventeen Ounces and four Drachms of Oil which was still thicker and reddish. The Mass remaining behind in the Retort was black, shining, smooth and spongy, and weighed six Drachms and twelve Grains. This being calcined in a Crucible for eight Hours, acquired a reddish brown Colour, weighed only twenty two Grains, was entirely void of Taste, and yielded no Salt by Lixiviation. The Loss of Parts in Distillation was about one Drachm, and in Calcination almost six Drachms. Hence it appears that this Turpentine chiefly consists of subtile Oil and acid Salt, which are combined together so as to constitute a resinous Compound; and that the Proportion of Earth and alkaline Salt contained in it are exceeding small. In short, if the Spirit of Turpentine, and the acid Spirit of Vitriol, be digested together for some Days, they change into a Resin, like Turpentine; and this by a longer Digestion grows thicker and thicker, till at length it is converted into a black *Bitumen*.

We must observe that Turpentine gives a violet Smell to the Urine, not only when it is taken inwardly, or injected by way of Clyster, but also when it is applied externally, or only received by the Breath into the Lungs. Hence we may conclude, that its Efficacy is principally owing to spi-

rituous and volatile Particles, which are easily distributed over the whole Body, which penetrate, divide, and attenuate the Mass of Blood and other Humours, involve the acrid Salts, promote the due Secretions and Excretions, especially by the Kidneys and Intestines, detarging and besmearing the solid Fibres of these parts, and restoring their Oscillations. And this must be understood of Turpentine in general.

Venice Turpentine has the same Virtues with the *Chio* or *Cyprus*, and is given in the same Manner. For internal Use we generally prefer it to the others. It is balsamick, vulnerary, diuretick, and gently purgative. In Ulcers of the Lungs, Kidneys, Bladder, and other Bowels, it is very useful; as also in a *Gonorrhœa* and *Fluor Albus*. It is of extraordinary Service in resolving or ripening Imposthumations of the Bowels, forasmuch as it sometimes draws the purulent Matter from the Part affected, and discharges it by Urine. *Riverius* and other celebrated Physicians recommend it to prevent the Stone in the Kidneys; and for this Intention it is preferable to other Diureticks, because it relaxes the Belly as well as provokes Urine; whereby the more viscid Humours are evacuated by Stool, which other diuretick Medicines would only derive upon the Kidneys. Externally it is so much extolled for its balsamick and vulnerary Qualities, that the Use thereof in Unguents and Plaisters is almost universal. With this the Surgeons make a common and excellent Digestive for Wounds, by dissolving it first with q. s. of the Yolk of an Egg, and mixing it with Oil of Roses, or the like. Moreover, in Dysenteries, Ulcerations of the Intestines, nephritick Pains, and Suppression of Urine, it is injected in Clysters to good Advantage. However, Turpentine, like all other Diureticks, requires some

Caution

Caution to be observed in giving it. When we are apprehensive of the Approach of a Fever or Inflammation, it will be proper to order Bleeding previously to it, and to prepare the Patient by Medicines that deterge and relax the Stomach and Intestines; otherwise a Fever, Head-Ache, or inflammatory Heat in other Parts, may be the Consequence. *Fabricius Hildanus, Cent. 5. Observ. 59.* speaks of a Suppression of Urine which was brought on by the Use of Turpentine after crude and viscid Aliment. In the Shops, a Spirit, Oil, and Colophony, are prepared from *Venice Turpentine* after the following Manner.

Take of the purest *Venice Turpentine* q. v. Put it into a Glass Retort, leaving at least two Thirds empty. Distil it at first with a very gentle Fire, and a fine ethereal Oil comes over, which is mixed with a certain Proportion of Phlegm. This is commonly called the *Spirit of Turpentine*. Afterwards by increasing the Fire gradually, a yellow Oil rises up into the Receiver, and then a reddish Oil of a somewhat thicker Consistence. If the Fire be now taken away, and the Vessels left to cool, a solid, friable, pellucid, and reddish Mass is found at the Bottom of the Retort, which is termed *Colophony*. But if this resinous Mass be still urged by a stronger Degree of Heat, it gives up a thick blackish Oil, which is called by some the *Balsam of Turpentine*, and a light, porous, black Substance is left in the Retort.

The Spirit is given inwardly, and in the Quantity of a few Drops operates powerfully by Urine. It is proper in a Stoppage of making Water from a thick

Mucus

Mucus obstructing the Passages, in bloody and purulent Urine, proceeding from Ulcers of the Kidneys or Bladder; as also in Affections of the Lungs. *Bartholetus* recommends it in a Pleurisy, for resolving the Humour impacted in the *Thorax*, and carrying it off successfully by the urinary Passages. The yellow Oil is seldom given inwardly.

Both the Spirit and Oil in external Use are reckoned vulnerary and balsamick. Colophony is digestive, resolvent and consolidating. It is not so deterfive and penetrating as the Turpentine itself, as having been deprived of its oily Parts by Distillation. Sometimes it is given inwardly, though seldom; but is applied externally in some Plaisters.

Take of *Venice Turpentine*, ʒij. Oil of sweet Almonds, ʒfs. mix. Let this be given in an Asthma, nephritick Disorders, and Suppression of Urine.

Take of *Venice Turpentine* ʒfs. Liquorice-Root powdered, or Sugar, q. f. to make a Bolus. This is proper for Ulcers of the Lungs, Kidneys, or Bladder, &c.

Take of Rhubarb in Powder ʒfs. *Venice Turpentine*, q. f. Mix and make a Bolus to be given in the *Fluor Albus*.

Take of *Venice Turpentine* ʒfs. the mercurial *Panacea*, ʒj. Rhubarb ʒiij. Make an Electuary. The Dose is ʒj. twice a Day in a Clap, when the Patient has been previously treated with proper Remedies.

Take of *Venice Turpentine* ʒvj. or ʒj. dissolve it with the Yolk of an Egg in ℥j. of Whey, or any suitable Decoction for a Clyster.

3. *Terebinthina abiegna seu Abietina*, *Terebinthina Argentoratensis*, Off. Πηλὶν ἐλαλίον, *Græcor.* *Strasburg Turpentine*,

Turpentine, which is the resinous Juice of the Silver-Fir, is thinner when it is fresh than *Venice Turpentine*, clearer, and of a more agreeable bitter Smell, resembling in some Measure the Smell of Citron-Peel : But by Age it grows thick and yellow. It is brought from *Strasburg*, and therefore generally goes by the Name of that Town.

The Tree, from which it is got by making Incisions along the Trunk, is called *Abies, Taxifolio, fructu sursum spectante*, *Inst. R. H. 585. Abies, conis sursum spectantibus, sive Mas, C. B. P. 505. Abies Fœmina, sive ἐλάτη θήλεια*, *J. B. 1. 231*. It grows in great Plenty in *Germany*, and the Northern Countries.

The Turpentine, being at first liquid, drops down from the Tree, but at length it gradually thickens and ceases to flow ; and the Incisions (which are usually three Fingers broad, and made at the Distance of about four Inches from each other on all Sides of the Trunk) after two or three Years are filled with a thick Resin, of which the *Germans* make a Kind of Pitch, by melting it in Furnaces.

A resinous Juice is likewise got from certain Tubercles or Knobs which are found within the Bark, of a more agreeable Smell than the Resin of the Trunk. When it is dry, it somewhat resembles Frankincense, both in Colour and Smell, and is sometimes used in its Stead. It is distinguished by the Name of *Lachryma abiegna*, or *Oleum abietinum*, and is greatly valued, but is scarce, no more being usually obtained from each Tubercle than one or two Drops, according to *Bellonius*, who tells us, that the Peasants get it by applying the Mouth of a Cow's Horn to the Tubercles, and so expressing the Juice ; by which Method they are not able to procure above four Ounces a Day.

Strasburg Turpentine has the same Principles and much the same Virtues as the *Venice*; though as it is of a more acrid and bitter Taste, and thinner Consistence, *C. Hoffman* is of Opinion that it consists of somewhat finer Parts, and on that Account prefers it to *Venice* Turpentine for detarging inward Ulcers: But he affirms, that for the same Reason it is also more heating, and ought therefore to be used with greater Caution.

4. *Terebintina communis, et Resina Pineae, Off.*
 ἰνλίον πικρλίον καὶ στροβιλίον, *Græcor.* Common Turpentine is thicker and heavier than either *Strasburg* or *Venice* Turpentine, and not transparent; having a pale Colour, and the Consistence of Oil which has grown thickish by standing in the Cold. It has a strong resinous Smell, and an acrid, somewhat bitter and nauseous Taste.

It runs from several Sorts of Pines; but in *Provence* about *Marseilles* and *Toulon*, and in *Guienne* about *Bordeaux*, it is got chiefly from the *Pinus silvestris vulgaris Genevensis*, J. B. 1. 253. *Pinus silvestris*, C. B. P. 491. The Turpentine or Resin which flows from this Tree is two-fold; the one ouzes out of the Cones, and is therefore called *Resina strobilina*; the other is called *Resina pinea*; being that which runs from an Incision made in the Trunk.

This Turpentine is seldom used in Physick, though its Virtues are much the same as of the others; but it is many other Ways useful in Life, as it serves for different Purposes in Trade. From this also are made the common Sorts of Resin, Pitch, Tar, &c. These are:

1. *Resina candida, or Thus album*, white Resin (vulgarly Rosin) or white Frankincense. This is made by letting the Turpentine lie in small Trenches about the Root of the Tree till a white Crust is formed

formed upon its Surface by the Heat of the Sun. If this Crust have a brown Colour, and a Mixture of Dirt, it is called *Thus variegatum*, *Thus vulgare*, &c. Common Frankincense.

2. *Palimpissa*, dry Pitch, is what remains after Distillation of the grosser Part of the Turpentine, being an hard friable Substance, of a reddish, brown Colour.

3. *Pix nigra artificialis*, Artificial black Pitch, which is made of the *Palimpissa* and common Tar.

4. *Pix navalis*, common Pitch, which is prepared by mixing the artificial black Pitch with *Palimpissa*, Beef-Suet, and common Tar, and melting them together over the Fire.

5. *Zopissa* or *Apochyma*. This is the *Pix navalis*, after it has contracted a Saltness from the Sea-Water.

6. *Pix Burgundiaca*, Burgundy Pitch, which is compounded of white Resin, common Turpentine and Oil of common Turpentine melted together.

7. *Pix nigra liquida*, or *Pix liquida vulgaris*, Liquid Pitch or common Tar is got by burning the Trees when they are old, and full of Resin; whereby the black resinous Juice runs out into Trenches or Vessels prepared to receive it. This is done either when the Trees are standing, or in Furnaces which are built for that Purpose.

8. *Pissaeleum*, Oil of Tar, is a black oily Liquor which rises to the Top of the Tar after it has stood a while in Casks. Sometimes another Sort of *Palimpissa*, or dry Pitch, is made by boiling the thicker Part of the Tar to Dryness.

The Smoke of all these resinous Substances produces a black light Soot, which is called *noir de fumée*, and is often used in preparing some Colours, and in the Ink of Printers. Another Soot like it is gathered from the Burnt Lees of Oils, but this being fat and oily is not so much valued.

Both

Both the liquid and the dry Refins above described are emollient, resolvent, and digestive, and are used in many Plaisters and Unguents for Wounds and Ulcers. The liquid Pitch, or Tar, is suppurative and corrects tetterous Eruptions. The harder Pitch is more powerfully drying, and preferable for healing Wounds.

Of SOLID RESINS.

ARTIC. I. Of BENZOÏNE.

Benzoïnum, Belzoïnum, Belzoïm, Benjoïnum, Benivinum, Benivi, et Assa dulcis, Off. This is a dry, indurated, brittle, inflammable Resin, composed of many shining Particles, sometimes yellowish, sometimes whitish, which are compacted together into a Mass of a resinous fat Taste, and fragrant sweet Scent, especially when it is burnt. In the Shops are two Sorts: The one is distinguished *Amygdaloïdes*, being either pale, or reddish inclining to brown, and containing small white Lumps like Almonds; the other is blackish, and intermixed with very few or no Spots. It is brought from the Kingdom of *Siam* in the *East Indies*, and from the Islands of *Java* and *Sumatra*. The *Amygdaloïdes* is the best, and it ought to be pellucid, fragrant, and free from heterogeneous Substances.

Garcias ab horto makes it appear that this Resin was unknown to the ancient *Greeks* and *Arabians*.

The Tree is called *Belzoïnum*, C. B. P. 503. *Arbor Benzoïni, Grimmii Ephem. Germ. dec. 11. An. 1.* [*Laurus foliis enervibus, obversè ovatis, utrinque acutis, integris, annuis, Linn. Hort. Cliff. 154.*] In the *Hortus Amstelodamensis* there is a Figure and Description of a Tree under the Name of *Arbor Virginiana, Citriæ vel Limoniæ folio, Benzoïnum fundens*;

dens; which is the same with the former, only growing in a different Climate. The Resin is got from Trees about five or six Years old by cutting the Bark quite through to the Wood, beginning at the Top near the Branches and carrying the Incision obliquely down the Trunk. At first when it flows out of the Tree, it is thin, somewhat glutinous, white and pellucid, but in Time grows hard, and acquires a yellow or reddish Colour; or if it be suffered to lie long upon the Bark it appears of a dark brown Cast and full of Recrements. *Grimmius*, from whom we have taken this Account of the Manner in which it is got, tells us that the Quantity obtained from one Tree is seldom more than three Pounds; and that the Trees, after this becoming useles, are cut up, to make Room for others that are younger.

Benzoine affords by a chymical Treatment a large Quantity of Oil, whereof one Portion is thin, transparent, of a golden Colour, and fragrant, and the other is thick, having a Consistence like Butter; together with a considerable Proportion of acid Phlegm, a little Earth, and no fixt Salt. The acid Salt, joined with some Portion of Earth and Oil constitutes an essential Salt, which rises up in Sublimation in the Form of saline Flowers, or is drawn out by Decoction in common Water. This Salt dissolves in boiling Water like other essential Salts, and when the Water is cold, it shoots into Crystals or saline *Spicula* at the Bottom of the Liquor. The Quantity obtained from one Pound of Benzoine by Sublimation is an Ounce and half or two Ounces, and by Decoction one Ounce.

The Use of Benzoine is very common in Fumigations and Perfumes. Inwardly taken it promotes Expectoration, and is of great Service in Asthmas, Infarctions of the Lungs, and old Coughs:
But

But the Flowers, in these Cases, are more particularly recommended ; and have likewise a Virtue of provoking Sweat. Externally it is useful in Plaisters for strengthening the Head, Stomach, and nervous Parts which are relaxed. The Tincture is also used to cure Pimples and Redness of the Face.

The Flowers are prepared thus.

Take of Benzoine grossly broken q. v. Put it into a subliming Pot made of glazed Earth, and fitting a Cover upon it of double Paper in the Form of a Pyramid, set it in a Sand-heat or over a small Fire of Charcoal. The Flowers by this Means will presently begin to rise up and stick to the Paper, and are of a beautiful white shining Colour like Silk. The Cover must be taken off every Hour and another be put in its Stead, wiping out the Flowers always with a Feather, and then stopping them up close in a Phial. The Sublimation is to be repeated till the Flowers begin to appear yellow and oily. They are given from gr. iij. to xij. for a Dose, in some proper Liquor or a Bolus.

The resinous friable Substance remaining after the Operation, being put into a Retort with two or three Times as much Sand and distilled, gives up an Oil, which at first in a small Quantity is transparent and of a golden Colour ; afterwards reddish, and at last black and thick. This Oil may be rectified by distilling it again with Water, and is reckoned balsamick, vulnerary and sudorifick.

The Tincture is made with Spirit of Wine. A few Drops of this Tincture falling into Water render it foul and milky, for which Reason some give it the Title of *Lac Virginale*, and use it as a Cosmetick.

Take

Take the Flowers of Benzoin and Salt of Amber
 ā ʒss. Saffron ʒj. Gum Ammoniack ʒij. Con-
 serve of Elecampane ʒij. Mix and make an
 Electuary for four Doses. Give one every
 sixth Hour in an Asthma.

ARTIC. II. Of CAMPHORE.

*Camphora et Capbura, Off. Capbur, Arab. Kā-
 قهقرا, recent. Græcor. et Aëlii.* The Camphore of
 the Shops is a resinous, fattish Substance, growing
 somewhat viscid under the Teeth, white, transpa-
 rent, light, of an acrid, bitterish, aromattick Taste,
 burning the Mouth, though with a certain Sensa-
 tion of Cold, and of a fragrant Scent like Rose-
 mary, but more piercing and stronger. It is so
 very volatile, that being exposed to the open Air,
 it diminishes by little and little, and at length is
 entirely dissipated. It comes from *Japan*, and the
 other neighbouring Islands.

The Tree from which it is extracted is called
*Camphora Officinarum, C. B. P. 500. Arbor Cam-
 phorifera japonica, foliis Laurinis, fructu parvo glo-
 bofo, calyce brevissimo, Breyn. 2°. Prodr. et Hort.
 Amstel. [Laurus foliis Ovatis, utrinque acuminatis, tri-
 nerviis, nididis, petiolis laxis, Lin. Hort. Cliff. 154.]*
 In order to procure this Refin, the Wood and
 Root of the Tree are cut into small Pieces, and
 boiled in an Iron-Vessel with a certain Quantity of
 Water. The Vessel having a Cover of Straw
 fitted upon it, the Camphore rises up by Decoc-
 tion, and concreting upon the Straw like a white
 Soot, is shook off and compacted together into a
 Mass, which seems composed of many semi-trans-
 parent, gray, reddish, or yellowish Grains, having
 yet a considerable Mixture of Earth and other Im-
 R purities.

purities. It is now called *Camphre brute*, and is afterwards refined by the *Dutch*, who bring it from the *Indies*, by a particular Method of Sublimation. The Process, as described by *Gronovius* in his Dissertation upon Camphore, is as follows.

They first bruise the Camphore and pass it through a Sieve, to clear it from the Filth; then they put a Pound and half, or two or three Pounds into a low Glass-Vessel or Matrafs, leaving an empty Space at the Top. The Bottom of the Matrafs is flat, and the Neck narrow. This they place upon Sand, keeping its Sides quite free. The Pot containing the Sand descends downwards and gradually terminates in a Point like a Cone. Under this they kindle a strong Fire and keep it up till the Camphore boils like Water. Whilst it melts they cover the Matrafs with many Folds of Cloth sewed together, with a Hole in the Middle to receive the Neck of the Matrafs; upon which they then fix a Cone, something longer than the Neck, made of a metalline Substance which the *Dutch* call *Blith*.

When the Camphore is entirely melted, and in a strong Ebullition, they lessen the Fire, by taking away some of the Coals, and by throwing Ashes upon the rest, so as to suffer a moderate Heat to remain. Half an Hour after the Boiling has ceased, they take off the Cloths and Cone, leaving only some Cap-Paper corresponding to the Diameter of the Matrafs, with a Hole in the Middle, to prevent its breaking by the too immediate Action of the cold Air. They likewise cover the Neck of the Matrafs with a Cone of Paper, and thus with a gentle Heat they keep the Camphore melted, for some Hours. By this Digestion some of its oily and thinner Parts are thrown off, so that it will afterwards concrete into a more dry and solid Mass.

Having

Having stood a sufficient Time in Digestion they raise the Fire again, and continue it till the Camphore rises into the upper Part of the Matrafs; at which Time they are obliged to use the greatest Caution, to hinder it from immediately filling the Neck of the Vessel and bursting it: For this End a Rod of Iron, or Wood, is always thrust down into the Neck to keep it open. When the Camphore is all sublimed, they remove the Fire, and leave the Matrafs to cool. When it is cold they break it, and take out the Camphore, which from the Shape of the Vessel resembles a round Cake. The feculent Matter, if any were mixed with it, is found in the Bottom of the Matrafs; or if any Filth adheres to its Surface they pare it off with a Knife.

When it has been thus refined, if it be burnt in the open Air, it leaves not the least Portion of Earth or Ashes behind; but it is entirely dissipated in Flame; a Part of which is converted into black Soot, affording no Marks of Acidity; wherein it differs from Benzoine and many other Resins. If it be distilled in close Vessels, it is not resolved into its Principles, but rises up in Flowers like Brimstone. It is soluble in Spirit of Wine and Oils, like other Resins; and by procuring a large Quantity of common Water to the Spirit of Wine after a Solution of the Camphore, it presently separates again from it, and swims upon the Top of the Liquor like Snow. It dissolves also, or rather melts, in Spirit of Nitre and *Aqua Regia*, contrary to other Resins, which always in acid Liquors of this kind become hard. Again, it dissolves in strong Oil of Vitriol, but is not converted into Oil. It likewise melts in Spirit of Salt, one Part of it becoming a whitish viscid Oil, the other rising in Sublimation. The Salt of Tartar and Spirit of Sal

Ammoniack are altogether incapable of changing it. Whence it appears that Camphore is a Resin of a peculiar Nature, consisting of oily and acid Particles ; and that the acid is so very fine and subtle as to be discoverable only by Deflagration.

Neither *Dioscorides*, nor *Galen*, nor any of the ancient *Greeks*, before *Aëtius*, have mentioned it ; but the *Arabians* were well acquainted with its Use.

Authors dispute much about its Quality, some asserting that it is hot, others that it is cold. They who assert that Camphore is cold, alledge as an Argument, that it extinguishes Lust and Venery ; that it cures Ophthalmies, Inflammations, and Burns ; and likewise creates a Sensation of Cold when applied to the Part affected. The others, on the contrary, argue that it is hot from its great Inflammability, its fragrant, aromattick Scent, its piercing Taste, and the Fineness and Volatility of its Parts. And this Opinion is the more probable : For though it be a common Proverb,

Camphora per Nares castrat odore Mares,

the Truth of it, however common, may reasonably be called in Question ; since it hath been observed that many People, who are employed all their Lives in *Japan* in procuring it from the Trees, and in *Holland* also in the Purification of it, have yet no apparent Impotency ; being often the Fathers of many Children. It is true, indeed, that the Force of Nature in some Persons hath been impaired, and even destroyed by a long Use of Camphore ; but others on the contrary, who have taken it in order to moderate their Desires, have afterwards complained that they were more lascivious than before. Therefore, though this Drug has
a Pro-

a Property which renders it cooling in Inflammations and Fevers, it does not produce this Effect immediately of itself, but only *per Accidens*, that is by softening the Acrimony of the Humours, removing their Stagnation, resolving their Coagulation, and promoting their Discharge by the cutaneous Pores, or by driving them back into the Circulation by their proper Vessels; so that the Cause of the Inflammation being removed, there follows of Consequence a Cessation of Heat and Pain in the Part affected: And this is no more than what we experience every Day from Spirit of Wine, and other Applications, which by all Persons are allowed to be hot.

Camphore is much used both internally and externally. The Virtue thereof internally is diaphoretick and anodyne, resisting Poisons and Malignity of the Humours; wherefore it is frequently given in the Plague, in putrid Fevers, and malignant Distempers. It provokes the *Menses* and *Urine*; and is serviceable in uterine Suffocations. For this Intention it is taken either in Substance, or is set on Fire and quenched in some hysterical Water, and so drank; or else is dissolved in Clysters by the Means of Oil. It cures Ulcers of the Womb, Kidneys and Bladder; and is commended in a *Gonorrhœa* and *Fluor Albus*. Moreover, Dr. *Groenvelt*, in his Treatise *De tuto Cantharidum Ufu interno*, extols it as an excellent Corrector of *Cantharides*, asserting that it has a wonderful Efficacy in abating the Heat of Urine which is occasioned by giving them inwardly. The Dose is from gr. iij. to ℥j. in a Bolus, or dissolved in q. f. of the Oil of sweet Almonds. It is applied externally to paralytick Limbs, in rheumatick and gouty Pains, as also to allay Inflammations and *St. Anthony's Fire*, to resolve Tumours, remove Putrefaction, prevent Gangrenes,

grees, and to cure Burns. In these Cases it is commonly dissolved in Spirit of Wine; and sometimes it is mixed in Froutales, Fomentations, Collyriums, Unguents and Cerates. It is said likewise to be good against intermitting Fevers, if one Drachm be tied up in a Rag, so that it may hang from the Neck upon the Pit of the Stomach.

But we must observe that Camphore ought not to be used without Caution; forasmuch as being taken in larger Quantities than convenient, it oppresses the Head, produces Wakefulness, and disposes the Blood to Inflammation.

Take Camphore, the Roots of Butterbur and Bistort, \bar{a} zj . calcined Hartshorn zj . Mix and make a Powder. The Dose is zj . in the Plague and malignant Fevers.

Take of Camphore gr. xv. Oil of Cinnamon gutt. iij. purified Opium gr. j. Conserve of Rosemary-Flowers q. f. to make a sweating Bolus.

Take of Camphore gr. xij. Conserve of Marigold-Flowers q. f. Make a Bolus for a Suppression of the *Menses*.

Take Camphore, Assa foetida and Castor, \bar{a} gr. v. Myrrh and Aloes powdered \bar{a} gr. x. Oil of Amber gutt. iij. Conserve of Rue q. f. to make a Bolus.

Take of Camphore zj . Venice Turpentine zj . Dragon's Blood zij . Mix them well into a Mass for Pills. The Dose is zfs . in a *Gonorrhœa*.

Take of the distilled Water of Fennel zj . Camphorated Spirit of Wine zfs . Mix and make a Collyrium to be used in an Ophthalmy, *Glaucoma*, and beginning Cataract.

Take of the Tincture of Myrrh with Aloes ℥iv. camphorated Spirit of Wine ℥j. Make a Mixture; which is excellent for cleansing foetid and putrid Ulcers, especially where there is any Tendency to Sphacelation.

Take of the Sugar of Lead ℥ss. Camphore ʒss. Oil of Linseed and Oil of Eggs ā ℥j. Make a Liniment for Burns.

Take of the Oil of Worms ʒiij. camphorated Spirit of Wine ℥j. Oil of Turpentine ʒss. Spirit of Sal Ammoniack ʒj. Mix and make a Liniment for rheumatick Pains and Palsies.

Camphorated Spirit of Wine is made by dissolving ʒiss. of Camphore in ℥j. of the Spirit in a large Glass-Vessel, letting it stand in the Sun or in warm Sand. And after the same Manner is made camphorated Brandy.

An Oil of Camphore is prepared thus.

Take of Camphore rubbed into a gross Powder ʒiij. Spirit of Nitre ʒvj. Let them stand together to digest in B. M. in a Glass-Vessel well stopped, shaking the Vessel now and then, till the Camphore is quite dissolved. Then separate the Oil, which swims at the Top of the Spirit in the Quantity of ℥iv. This Oil is commended for stopping the *Caries*, and forwarding the Exfoliation of Bones.

There is another Sort of Camphore much esteemed by the eastern People, but is never brought into *Europe* by reason of its Scarceness. It is called *Camphora Borneensis* or *Sumatrana* from the Places where it is found. The Tree which produces it is distinguished *Arbor Liono dicta Sladi: Arbor camphorifera Sumatrana, foliis Caryophylli aromatici,*
R 4 *longius*

longius mucronatis, fructu Majori oblongo, Calyce amplissimo Tulipæ figuram quodam modo representante, Breyn. 2º. Prodr. This Camphore differs from the former in that it is taken out of the Tree in small Pieces or *Lamellæ* without any further Preparation, and continues in the open Air without wasting away. Again, other Sorts of Camphore are obtained from several Plants in the *East Indies*; as from the different Species of the Cinnamon-Tree, by distilling the Bark of the Roots in a large Quantity of Water: As likewise from the Roots of the *Zedoaria Zeylanica Camphoram redolens*, the *Mentha Zeylanica*, the *Scœnantium Arabicum, Persicum*, and other Vegetables. The Camphore of the Cinnamon-Tree is reckoned better than the common, but very little comes to us. The other Sorts are never used in Physick,

ARTIC. III. Of ELEMI.

The Elemi of the Shops is of two Sorts. The one is called *Elemi seu Elemni verum*, or *Æthiopicum*; the other *Elemi spurium*, or *Americanum*. They are generally called Gums, though improperly, being both of them Resins, easily taking Fire and dissolving in Oil.

I. *Elemi verum seu Æthiopicum, Off.* The true Elemi of *Æthiopia* is a Resin of a yellowish Colour, or whitish with a small Cast of Green, formed into cylindrical Glebes and commonly wrapped up in broad arundinaceous Leaves, or the Leaves of a Sort of Palm-Tree. Towards the outer Part it is harder, though not perfectly dry, within softer and somewhat tough; of a strong Smell, but not unpleasant, being something like that of Fennel. This Sort is seldom found in the Shops. We have as yet no certain Account of the Tree to which it belongs,

belongs, but the most probable Opinion is, that it is a wild Olive growing in *Æthiopia*.

2. *Elemi Americanum*, Off. The *Elemi* of *America* is a Sort of Resin which is sometimes whitish, and sometimes greenish, or yellowish, somewhat transparent, of a softer or harder Consistence, and a strong resinous Smell. This is very common in the Shops; and is made Choice of fresh, transparent, greenish, fat, tough, and of a good Smell. It is brought from *Brasile*, *New Spain*, and the Islands of *America*.

The Tree from which this is obtained by making a Wound in the Bark, is called *Icicariba Brasiliensis*, *Marcgr.* 98. *Icicariba, et illius gummi Icica, sive Elemni*, *Pison.* 122. *Arbor Brasiliensis gummi Elemi simile fundens, foliis pinnatis, flosculis verticillatis, fructu Olivæ figurâ et magnitudine*, *Raii Hist.* 1546.

In a chymical *Analysis* three Pounds of *Elemi* yielded three Ounces, two Drachms and sixty six Grains of Liquor, which at the first coming over had the Smell and Taste of the Resin, but afterwards was acid, changing the Tincture of Turnsole to a red Colour; then six Ounces, six Drachms and thirty six Grains of transparent reddish Oil, and twenty nine Ounces, six Drachms and thirty six Grains of thicker Oil of a brown Colour. The black Substance remaining in the Bottom of the Retort, like a Coal, weighed three Ounces, seven Drachms and thirty six Grains. This being calcined in a Crucible with a reverberatory Fire for sixteen Hours, till it gave over smoking, left only three Drachms and sixty Grains, and the black Colour was converted into a reddish yellow. At the last were obtained, by Lixivation, eighteen Grains of fixt neutral Salt. The Loss of Parts in Distillation was four Ounces and forty eight Grains, and

in Calcination three Ounces, two Drachms and forty eight Grains.

It afforded no Marks of alkaline Salt; whence it appears that this Resin, like almost all others, is compounded of a subtile acid Salt, and both a thin and thick Oil, intimately combined.

Elemi has a Virtue of resolving Tumours, detaching Ulcers, and asswaging internal Pains; is excellent for resisting Corruption, and is particularly commended in Wounds and Contusions of the Head, and Tendons. It is seldom given inwardly, though some greatly extol it as a Diuretick. The *Balsamum digestivum*, or *Linimentum Arcæi*, which is very much used by Surgeons is made thus.

Take Elemi and *Strasburg* Turpentine \bar{a} ζ iss.
old Mutton Suet, depurated and melted, ζ ij.
old Hog's Lard melted ζ j. Mix and make a
Liniment f. a.

Many resinous Substances of a yellowish, whitish, or ashy Colour, are brought from *America* for Elemi; but as they are inferior both in their Smell and Virtues they are easily distinguished from it.

ARTIC. IV. Of LADANUM.

Ladanum vel Labdanum, Off. *Λάδανον*, *Græcor.*
Loden et Laden, *Arab.* This is a resinous Substance, of which we have two Sorts: The one is formed into large Cakes, soft, approaching to the Consistence of a Plaister, or Extract, becoming tough and sticky betwixt the Fingers, of a pleasant Smell, a blackish red Colour, and covered with Bladders or Skins: The other Sort is in Rolls like *Spanish* Liquorice, or twisted up much in the same Manner with small Wax-Candle, dry, hard, and brittle, yet growing

growing somewhat softish by Heat, mixed with black Sand, of a black Colour, and weaker Scent. This Sort is the more common, but the first is better, which ought to be free from Mixture, inflammable, by Heat soon growing soft, and of a sweet pleasant and strong Smell, especially when it is burnt. It is brought from *Candy*, and other Islands of the *Archipelago*. The ancient *Greeks* were not acquainted with it.

In the Summer-Time it exudes out of the Leaves of a Shrub, which is called *Cistus Ladanifera*, *flore-purpureo*, *Cor. Inst. R. H. 19. Ladanum Creticum*, *Prof. Alpin. Exot. 88. M. Tournefort* mentions another *Species* of it (if it may be so called) differing only from the preceding in the Largeness of its Flowers, which he distinguishes, *Cistus Ladanifera, Orientalis, flore purpureo majore*, *Cor. Inst. R. H. 19.* This last grows in *Pontus*, and the other is very common in some Parts of *Candy*. In the Time of *Dioscorides* *Ladanum* was gathered after two different Ways. He tells us that when Goats browse upon the Leaves, the viscous Juice which ouzes out of them, sticks and gathers by Degrees upon their Beards and the Hair of their Legs, which is afterwards taken off by Combs. The other Method was by drawing a Rope over the Shrubs, and so collecting the Exudation. But in the Days of *Bellonius* it was gathered, and is still according to *M. Tournefort*, by a particular Sort of Instrument, which the *Greeks* inhabiting *Candy* term *Ἐρλάσιον*. This Instrument is something like a Rake without Teeth, having many leathern Straps or Belts fastened to it, which they sweep backward and forward over the Leaves of the Shrub, and the resinous Moisture, by this Means adhering to them, is afterwards scraped off with Knives. The gathering it in this Manner is a very laborious Employment,
being

being commonly done in the Dog-Days; though we are told that one Man, by following his Business closely, may collect above three Pounds in a Day. However, it is very hard to come at any which is entirely pure; for they who get it, being not content with their Gains, to encrease its Weight mix with it a Sort of black Sand, wherein is contained a certain Proportion of Iron.

In a chymical *Analysis* two Pounds of twisted Ladanum yielded two Ounces, two Drachms, and forty eight Grains of reddish Oil, of a pleasant Scent and acid Taste; three Drachms and an half of brown Liquor which was alkaline, coagulating the Solution of corrosive Sublimate and fermenting with Acids; four Drachms and twenty four Grains of reddish, transparent, odorous Oil; with one Ounce and three Drachms of brown Oil, somewhat empyreumatick and thick. The black Substance which was left behind weighed twenty six Ounces and seven Drachms; and being calcined by a reverberatory Fire in a Crucible for eight Hours acquired a brownish yellow Colour, which afterwards became reddish by continuing the Calcination for six Hours longer. At the last it appeared to be nothing more than an insipid Sand, affording scarce any fixt Salt at all. This Sand without doubt had been mixed with the Ladanum.

Hence then it is evident that Ladanum consists of a thin and thick Oil, combined with an essential ammoniacal Salt; and moreover that in two Pounds are contained about twenty four Ounces of Sand, so that one Pound of common or twisted Ladanum produces hardly four Ounces of the pure Refin. As the Sand has some Particles of Iron in it, it is no wonder that it changes red in Calcination like the *Crocus Martis*.

Ladanum in external Application is emollient, digestive, attenuating, and resolvent. Internally it astringes, fortifies and asswages Aches or Pains: But the internal Use of it is not so common. Sometimes it is prescribed to ℥j. to strengthen the Stomach, to help Concoction, against Defluxions of Serum and Catarrhs, and in Dysenteries. In a cold *Intemperies* of the Brain and Weakness of the Stomach, it is recommended to be applied over the Parts, and to be put to the Temples in the Tooth-Ache. It is reckoned good for Distempers of the Womb, and for old sinuous Ulcers attended with Swelling or Hardness. It is used likewise in Fumigations and Perfumes; and to correct a noxious Air is made into Balls with Musk, Amber-grease, and other Ingredients.

Take of pure Ladanum ℥j. Nutmeg ℥ss. Cardamom ℥j. Mastich gr. viij. powdered Jalap ℥j. Oil of Cinnamon gutt. vj. Syrup of Stœchas q. f. Make a Mass for Pills. The Dose is gr. xv. or xx. at Night against Catarrhs from a cold Cause.

Take of the purest Ladanum ℥j. red Coral prepared ℥j. Quince-Marmalade q. f. to make a Bolus for Weakness of the Stomach and Dysenteries.

An Oil of Ladanum is made thus,

Take of the best Ladanum ℔j. cut it small and boil it for half an Hour in ℥vj. of Rose-Water, and ℥iv. of the Oil of sweet Almonds, and then strain. This Oil, having a fragrant Smell, is mixed with Ointments and Pomatums.

ARTIC. V. Of MASTICH.

Mastiche, Mastix et Refina lentiscina, Off. ἰνλίνα σχιμίον, ἢ Μασίχην, Dioscor. Mastech, Arab. This is a dry pellucid Resin, of a yellow white Colour, concreted into Tears or Grains about as big as a small Pea or a Grain of Rice, brittle, breaking immediately into Pieces under the Teeth, but afterwards by the Heat of the Mouth becoming soft like Wax. Being thrown upon Gledes it takes Flame, emitting an agreeable Sort of Smell. The Taste is gently aromack, resinous, and somewhat restringent. It ought to be made Choice of white, or pale tending to yellow, pellucid, dry, brittle, crackly, and of a good Smell. When it is black, green, livid, or impure, it is of no Value.

It runs either of itself or from a Wound made in the Bark of a Tree very near a-kin to the *Terebinthus*, which is called *Lentiscus Vulgaris*, C. B. P. 399. It grows in *Cbio*, where it is cultivated with much Care, and from whence only the Mastich of the Shops is brought; though the Tree is found also in other Islands of the *Archipelago*, and in *Spain, Italy, and Languedoc*.

In a chymical *Analysis*, two Pounds of Mastich afforded one Ounce, seven Drachms and fifty four Grains, of limpid, odorous, and acid Phlegm; two Ounces, one Drachm and twelve Grains of brown Liquor, which was more acid with a kind of Bitterness; one Drachm and forty two Grains of transparent, reddish Liquor, subacid and somewhat alkaline, rendering the Solution of corrosive Sublimate turbid; one Drachm of transparent yellowish Oil; two Drachms of reddish Oil; two Ounces, one Drachm and ten Grains of brown Oil, which was transparent and fluid; with twenty Ounces
of

of thicker Oil, near the Consistence of Honey, and of a brown Colour. The Mass left in the Retort weighed three Ounces, of which three Drachms remained, after it had been burnt in a Crucible with a reverberatory Fire. From these were got, by Lixiviation, four Grains of fixt neutral Salt. The Loss of Parts in Distillation was two Ounces, one Drachm and twenty six Grains, and in Calcination two Ounces and five Drachms.

We may conclude from this *Analysis* that Mastich consists of a large Quantity of thick Oil, and acid Salt, with very little alkaline Salt and Earth; and that it contains but a small Proportion of fine and volatile Parts.

The Inhabitants of *Chio* have this Resin almost always in their Mouths, which they chew to strengthen their Teeth and Gums, and to correct an offensive Breath; and they usually mould and bake it in their Bread to improve its Taste. It is commended for many Purposes in Physick. It is gently aromatick, astringent, and stomachick. When the Bowels are weak or in a State of Relaxation from too much Moisture, it greatly conduces to dry and strengthen them. It obtunds the Acrimony of the Humours, both by involving the Points of the Salts, and by lubricating the Membranes; is useful in spitting of Blood and old Coughs, from ℥ss. to ʒss. as also to fortify the Stomach and suppress Vomiting; but an immoderate Use of it occasions Belchings. It cures catarrhus Affections, stops Loosenesses, and weakens the Irritation of Catharticks. Being chewed in the Mouth it contracts and strengthens the Gums, and draws forth Abundance of Spittle. *Simon Paulli* commends it thus against Catarrhs and Hardness of Hearing; and even prefers it to Pellitory or Tobacco; because it more abundantly draws forth Spittle, and

withal has a pleasant Smell and Taste. He says it cures Deafness by dislodging the peccant Matter within the Cavity of the Ear, and discharging it on the Palate. Externally upon the Region of the Stomach, it asswages colick Pains, *Nauseas*, and Vomiting; upon the Navel is of Service in *Diarrhœas*, and Superpurgations, and upon the Temples removes Defluxions and the Tooth-Ache.

Take of Mastich \mathfrak{z} ss. Boil it in $\mathfrak{℥}$ iiij. of Water to a Consumption of the third Part, and give the strained Liquor for common Drink in a Looseness.

Take of the Conserve of Roses \mathfrak{z} j. Mastich \mathfrak{z} ss. *Diacodium* q. f. Make a Bolus for Catarrhs and violent Coughs.

Take of Mastich \mathfrak{z} ss. Jalap in Powder gr. x. *Elixir Proprietatis*, or Balsam of *Peru*, q. f. to make them into Pills, to be given at Night in a Catarrh.

ARTIC. VI. Of FRANKINCENSE.

Olibanum, *Thus*, et *Thus Masculum*, Off. $\Lambda\iota\beta\alpha\nu\omicron\varsigma$, *Theoph.* et *Diosc.* $\Lambda\iota\beta\alpha\nu\omega\lambda\omicron\nu$, *Hippoc.* *Thus* vel *Tus*, *Latinor.* *Ronder*, *Conder*, et *Kateth*, *Arab.* This is a resinous Substance, in pale, yellowish, pellucid Tears or Drops like Mastich, but larger; of a somewhat acrid, bitterish, and resinous Taste, though not unpleasant, and of a fragrant Smell. Being put into a Flame it immediately takes Fire, and continues flaming a long Time; but without running in the Flame like Mastich. It immediately breaks betwixt the Teeth; but does not afterwards re-unite like Mastich: Nor can it like That be freely turned about the Mouth, because it sticks

sticks to the Teeth *. The Drops sometimes concreting two and two together, so as to resemble the Testicles of Men, or the Breasts of Women, according to their different Magnitudes, have given rise to the Distinction thereof into *Male* and *Female* Frankincense: And sometimes four or five are joined together in Lumps, as large as an Hasel-Nut, or larger, and adhere to a Piece of Bark, belonging to the Tree from whence the Resin is obtained. The small Grains which are rubbed off by the Collision of the Lumps with one another is what the *Greeks* termed *Manna of Frankincense*: The best Frankincense is whitish, pellucid, pure, shining, and dry. It was no Stranger to the remotest Antiquity, having been used in all Ages, and almost all Nations, in religious Worship.

The Place where it is found is not absolutely determined; for some assert that it is to be met with only in a certain Part of *Arabia*, and others tell us that it is also produced in *Æthiopia* †. Of what *Species* the Tree is from whence it is got,

* Hence it may be inferred that Frankincense is not a Resin, as most Writers have hitherto supposed, but a Gum Resin. This has been observed by an ingenious Author in a Treatise lately printed, intitled, *A new Method for the Improvement of the Manufacture of Drugs in a Treatise on the Elixir Proprietatis*, P. 3. “*Geoffroy*, says he, when he compares *Olibanum* to *Mastic*, unknowingly, discovers that it was not a Resin, but, what it truly is, an oily Gum, or Gum Resin. His Words are, *nec accensa diffluit, ut Mastiche. Dentibus statim comminuitur: verum comminuta non cogitur denuò ut Mastiche, neque sicut ea in ore liberè volutari potest, cum dentibus adhærescat.* The *Saliva* mixing with it begins to dissolve it, which hinders the Re-union of its Parts. Were it a Resin like *Mastic*, the Parts first divided by chewing, would re-unite by the Heat of the Mouth, upon continuing of that Chewing.”

† We have it imported to us from the *East Indies*; whence it seems more probable that it is got in *Arabia*, and perhaps in some other Parts of *Asia*.

we are still less certain; for we have no Accounts of it, of sufficient Authority to be depended on, either in ancient or modern Authors.

In a chymical *Analysis*, two Pounds of Frankincense yielded seven Ounces, seven Drachms and twenty four Grains of acid Phlegm, which was somewhat austere, odorous, and reddish; then one Ounce, two Drachms and forty six Grains of Phlegm, as well acid, as urinous, and of a red Colour; afterwards one Ounce, two Drachms and twenty four Grains, of transparent, fluid, yellowish and fragrant Oil; five Ounces and three Drachms of thick brown Oil; with six Ounces, five Drachms and thirty Grains of thicker Oil of the Consistence of Honey. The black Mass remaining in the Retort weighed five Ounces, six Drachms and forty three Grains, which being calcined for fifteen Hours in a Crucible, became of a reddish Colour, and left one Ounce, three Drachms and six Grains: From these were got by Lixiviation twenty two Grains of fixt alkaline Salt. The Loss of Parts in Distillation was four Ounces, three Drachms and twenty nine Grains; and in Calcination four Ounces, four Drachms and thirty seven Grains. Hence it appears that there is a larger Proportion of Earth, and somewhat more of an ammoniacal Salt in Frankincense than in Mastich; and that the saline and oily Parts are more intimately combined.

It is recommended internally for many Disorders of the Head and Breast, in Fluxes of the Womb and Belly; in Coughs, spitting of Blood, Loosenesses, and Dyfenteries; for it softens and obtunds the Acrimony of the Humours, especially the Lymph when overstocked with saline Particles. The Dose is from \mathfrak{zj} . to \mathfrak{zj} . or \mathfrak{zij} . It is reckoned a singular Specifick against a Pleurisy, and in particular when the Disease is epidemical. For this

End

End *Quercetanus*, in his Dispensatory, directs an Apple to be scooped hollow, so as to contain one Drachm of Frankincense in Powder, and then to be stopped up and roasted under Ashes: The Patient is to take the Apple with the Frankincense, drinking ζ ij. of the distilled Water of *Carduus benedictus* immediately after, and then to keep himself well covered in Bed to sweat. *Riverius*, in his Observations, assures us that he has been Witness to the Success of this Remedy in many Persons, who being reduced to Extremity were relieved in a short Time, either by sweating plentifully, or by a free Discharge of Matter from the Breast. I likewise have had recourse to this Remedy, and often, though not always, with good Success, the Patient having been twice or thrice let Blood before it was taken. In Case the first Dose be not succeeded by Sweat, it ought to be repeated about six Hours after.

Externally it is used in Fumigations for the Head in Catarrhs, Giddiness and Defluxions of Rheum upon the Nostrils, and is serviceable against the falling down of the *Rectum*, being burnt in a Close-stool. It is good in Wounds of the Head and Nerves, and to incarn and cicatrize Ulcers; which Virtues give it a Place in many vulnerary and healing Plaisters and Ointments. *Matthiolus* extols it as a sovereign Remedy against Redness of the Eyes, or Blearedness. He orders a Lump of Frankincense, stuck upon an Iron-pin or the like, to be set on Fire in a Wax-Candle, and to be suddenly quenched in four Ounces of Rose-Water, and so alternately for thirty Times. The Water afterwards, being strained through a clean linen Rag, is to be applied to the Corners of the Eyes every Night with a Feather. If the Disorder be very painful, an equal Quantity of Woman's Milk must

be mixed with the Rose-Water. A Liquor is got from Frankincense *per deliquium* by putting the Powder into the boiled White of an Egg while it is hot, and hanging them together in a Cellar. This Liquor is good to obliterate Scars and Spots of the Face. Moreover, the Oil which rises from Frankincense in Distillation is by some Persons accounted a very efficacious Remedy in a Consumption.

We must take Notice that *Dioscorides* looks upon the immoderate Use of Frankincense to be dangerous, asserting that in Health it occasions Madness, or even Death, when drank in a large Quantity with Wine. But *Galen* and the other Writers in Physick have been entirely silent upon this Quality; and no Inconvenience is observed from using it in common Practice.

Take of Frankincense in Powder ʒss. Flowers of Sulphur ʒj. candied Ginger or Conserve of Smallage q. s. to make a Bolus for an Asthma.

Take of Frankincense ʒj. Troches of Agarick ʒiv. Make ten Pills with q. s. of the Juice of Hyssop. Let one be taken every Night at Bed-time in a Catarrh, or Cough proceeding from a Defluxion of Phlegm.

Take Frankincense and Mastich ā ʒij. *Armenian* Bole ʒj. red Coral prepared and calcined Hartshorn, ā ʒss. Blood-stone ʒij. Mix and make a Powder. The Dose is ʒiss. in a Dyfentery.

ARTIC. VII. Of DRAGON'S BLOOD.

Sanguis Draconis, Off. Κιννάβαρις, *Diosc.* Ἰμα δράκοντος, *Græcor. recent.* Alachmen, *Arab.* This is a dry, friable, resinous Substance, easily melting in the Fire, inflammable, of a dark red Colour, but

but being reduced to Powder of a fine Redness resembling Blood, and appearing pellucid when it is spread into thin *Laminae*. It is void of Taste, and Smell also, except when it is burnt, and then it disperses a Smell not much unlike to liquid *Storax*. In the Shops are two Sorts: The one is in hard Drops, or in Lumps an Inch long, and half an Inch thick, which are wrapped up in Flags or Palm-Leaves. The other Sort is made into Cakes, and impure, having a Mixture of Bark, Wood, Earth, or other heterogeneous Substances. We sometimes meet with it also soft and tenacious, but growing hard in Time like the others. There is likewise a fictitious Sort of Dragon's Blood, very often sold in the Shops, which it is easy to distinguish from the true, as it is made up into round flat Cakes of a dull Colour. It is compounded of several Kinds of Gums, with a certain Proportion of the true Resin, or of *Brasile-Wood*, to give it a Colour. In the Fire it does not take Flame, but rises up into Bubbles and makes a Crackling; and in Water it grows viscid, and dissolves in the same Manner as a Gum. This is altogether unfit for Use. The best Dragon's Blood is in pure, shining Drops covered with Leaves, inflammable, and of a fine crimson red Colour, when reduced to Powder.

Dragon's Blood was known to the ancient *Greeks* by the Name of *Cinnabar*; and the *Cinnabar* of the Moderns was in those Ages called *Minium*.

In the Time of *Dioscorides* some were of Opinion that this Drug was the indurated Blood of a Dragon. *Dioscorides* indeed rejects this Notion as false, though he does not inform us himself what it is. However, it has long since been discovered to be the Juice of a Tree. We are told by *Monardus* that this Tree took the Name of *Draco* from its

having the Figure of a Dragon upon the Fruit; but the Name of the Tree, I rather think, has given Occasion to suppose the Resemblance, which perhaps is no more than imaginary. But leaving this to the Decision of others, we must observe that the Writers in Botany distinguish four *Species* of Trees, from which the officinal Dragon's Blood is procured.

The first is the *Draco Arbor*, *Clusii Hist.* i. C. B. P. 505. *Palma prunifera, foliis Yuccæ, è quâ Sanguis Draconis Officinarum, Commel. H. Amstel.* It grows in the *Canary Islands*, where the Juice in the Dog-Days flows of itself through the Bark which is commonly full of Chinks, and in a short Time grows hard and dry with the Sun.

The second, *Palma Amboinensis, Sanguinem Draconis fundens altera, foliis et caudice undique Spinis longis, acutissimis, nigris armata, D. Sberard, Dale pharmacol. Supplem. Arundo farcta Indiæ orientalis Sanguinem Draconis manans, Hist. Oxon. Palma-Pinus sive conifera, J. B. i. 398. Arundo Rotang, Bontii: Rottani Dsjerenang, Indorum: Arundo farcta seu Palma conifera spinosa, Kæmpfer. Amæn. exotic. 552.* This Tree grows in *Molucca, Java*, and other Parts of the *Indies*, bearing an oval scaly Fruit, bigger than an Hazel-Nut, from which is obtained the Dragon's Blood. The Method of procuring it, according to *Kæmpfer*, is this. They put the Fruit upon a Sort of Hurdle, over a Vessel, which is half full of Water. This Vessel being set upon a Fire, the Vapour rising up from the boiling Water renders the Fruit soft and flaccid, by which Means a red Juice exudes and lodges upon its Surface. Afterwards it is scraped off with a Stick and inclosed in Follicles made of Flags or the Leaves of a sort of Reed, which are hung upon Thread in the Air, till the Dragon's Blood is quite dry.

But others make use of Decoction only. They boil the Fruit, for Instance, in Water, which acquiring thence a red Tincture is evaporated till nothing but a thick Juice remains. This Juice is then put into Follicles like the former, and dried in the same Manner.

The Third is called *Ezquabuitl, seu Sanguinis Arbor, Hernand.* 59. It grows in Spain, where the Dragon's Blood, at certain Seasons, runs from it.

The Fourth is the *Draco Arbor Indica siliquosa, populi folio, Angsana vel Angsava Javanensibus, Com-mel. Hort. Med. Amstel. rarior.* 213. It grows in Java, and the Dragon's Blood is got from it, by making Incisions in the Trunk and Branches.

In the Shops the Juices obtained from the several Plants abovementioned are not distinguished; and in what their Difference does consist, if there be any that is material, I am not able to determine. The true Sort of Dragon's Blood is not soluble in Water, but in Spirit of Wine and oily Bodies only. In burning, the Smoke of it is subacid like that of Benzoine. It is a Resin compounded of a large Quantity of thick Oil and acid Salt. It contains but a small Proportion of volatile oily Parts, as we may conclude from its having neither Smell nor Taste.

As to its Virtues, it is drying, inspissating, and astringent, very useful in Dyfenteries, Hemorrhages, violent Fluxes, and inward Ulcers, being given from $\mathfrak{z}\mathfrak{s}$. to $\mathfrak{z}\mathfrak{j}$. Externally it dries up Ulcers, agglutinates Wounds, fastens loose Teeth, and strengthens the Gums.

Take Dragon's Blood and red Coral \bar{a} $\mathfrak{z}\mathfrak{j}$. Mix and make a Powder for six Doses, giving one every fourth or every sixth Hour against Spitting of Blood and Hemorrhages.

Take of Dragon's Blood ℥j. Alum ℥ij. Conserve of red Roses ℥iij. Make an Electuary, of which the Dose is ℥j. every fourth Hour in violent Hemorrhages.

Take Dragon's Blood, red Coral, *Japan* Earth and *Armenian* Bole washed, ā ℥fs. Quince-Marmalade q. f. Make an Electuary to be given at proper Intervals in Dysenteries.

Take of Dragon's Blood ℥iij. Camphore ℥ij. *Venice* Turpentine ℥ij. Make them into Pills. The Dose is ℥fs. for a *Gonorrhœa*.

ARTIC. VIII. Of STORAX.

Styrax Solidus vel Storax, Off. Στύραξ, *Diosc. et Græcor. Veter.* *Astarac vel Astorac, et Lebni, Avicen.* Solid Storax is a resinous Substance, whereof the ancient Greeks had two Sorts, which at this Time are also distinguished in the Shops (*viz.*) *Styrax Calamita*, and *Styrax Vulgaris*.

1. *Styrax Calamita, Off.* Στύραξ καλαμίτης, *Græcor.* This is a resinous, shining, solid Substance, in whitish and reddish Drops or Grains, somewhat fat, growing viscid under the Teeth, of a resinous subacid Taste, not unpleasant, and of a very fragrant Scent, especially when put upon warm Embers. It easily melts in the Fire, and is inflammable. According to *Galen* it was formerly brought from *Pamphylia*, in hollow Canes or Reeds; whence it was called *Calamita*.

2. *Styrax Vulgaris, seu in glebas compactus, Off.* *Styrax ruber, quorumd.* This is a resinous Substance in Glebes or Lumps, of a reddish yellow or brown Colour, interspersed with whitish Grains, shining, fat, somewhat viscid, and exuding a melleous sort of Liquor. It has the same Smell and Taste with the former.

These

These Resins are both the same; only that the first distils in Drops from slight Incisions or Cracks in the Tree, and is therefore speedily dried and gathered: But the other flowing from larger Wounds in much greater Quantities, requires a longer Time to dry: So that by the Heat, and Action of the Air, the Colour inclines more and more to red, or at length grows blackish. Storax ought to be chosen bright and pure, without any Mixture of Saw-dust, or other Dross, and of a fragrant Smell.

The Tree is the *Styrax folio Mali Cotonei*, C. B. P. 452. et *Inst.* R. H. 598. It grows in *Provence* and *Italy*, where it yields but little Resin, what we use in the Shops being got from Trees which grow in *Syria* and *Caramania*.

In a chymical *Analysis* two Pounds of pure Storax yielded two Ounces, seven Drachms and forty eight Grains of Phlegm, which was transparent, reddish and acid, with a resinous Smell like Storax; one Ounce, five Drachms and thirty six Grains of reddish and transparent essential Oil; two Ounces and two Drachms of thick Oil of the Consistence of Honey, together with some volatile Salt, or saline Flowers like those of Benzoine; (this Substance, which was something like Butter, after standing three or four Days was almost wholly dissolved into Oil) at last three Ounces and three Drachms of fluid reddish Oil somewhat empyreumatick. The black Mass remaining in the Retort weighed nine Ounces and five Drachms, which being calcined in a Crucible for twenty Hours, left one Ounce and four Drachms, and the black Colour was changed to a yellowish brown. From these were got, by Lixiviation, seven Grains of fixt neutral Salt. The Loss of Parts in Distillation was four Ounces and sixty Grains, and in Calcination eight Ounces and one Drachm. Hence it appears that Storax is a
Resin

Resin compounded of a large Quantity of thick Oil, and a smaller Proportion of thin Oil, with a moderate Portion of acid Salt, and a little Earth and alkaline Salt.

As Storax contains a larger Stock of thin Oil than Benzoine, it is somewhat more fragrant; but not so deterfive, because the Proportion of volatile essential Salt is less. Wherefore, notwithstanding it may sometimes be given to great Advantage in humoural Asthmas, and stubborn Coughs, either to remove Infarctions of the Lungs or to resolve Tubercles, yet Benzoine is accounted more efficacious. Storax, on account of its agreeable Fragrancy, is commended for strengthening the Brain, raising the Spirits and calming their inordinate Motions; wherefore it is useful in cordial Antidotes. It has a Property of resisting Poisons, in particular such as are reckoned offensive by their Coldness; though it is also observed to have an anodyne Virtue, whereby it eases Pains of the Head and Coughs, as it softens the Acrimony of the Humours by its oily Particles. The same Quality renders it serviceable against Hoarseness, Oppressions of the Head and Defluxions, being taken from ℥ss. to ʒss. Externally by way of Fumigation, it strengthens the Head, and relieves Giddiness and Catarrhs; and in Plaisters it fortifies the Stomach, helps Concoc-tion, and is conducive in Palsies; as also in Aches and Pains proceeding from Cold. In Fumigations and Perfumes it is often mixed with Benzoine.

Take Storax and Benzoine ā ℥j. Juice of Liquo-
rice ℥ss. Opium gr. fs. *Elixir Proprietatis* q. s.
to make them into Pills, which may be taken
at Bed-time against an Head-Ache, *Coriza*,
Catarrh, or Cough.

Take of Storax ʒfs. Balsam of *Peru* ʒfs. Make a Liniment for paralytick Members, or rheumatick Pains.

A very sweet and fragrant Oil is prepared from Storax, by letting it stand to macerate for three Days in a sufficient Quantity of common Water: For the Water being drawn off first by Distillation, there rises afterwards a yellow Oil, which in the Quantity of eight or ten Drops is an excellent Remedy for internal Ulcers, and particularly those of the Breast.

Flowers may be obtained from it as from Benzoin, and have the same Virtues, but are little used. A Tincture is likewise made of it by the Means of Spirit of Wine in the same Manner as of Benzoin, and is good for the same Purposes.

Of GUMS.

ARTIC. I. Of GUM ARABICK.

Gummi Arabicum, Off. κόμμι ἀραβίας ἀράβης, *Diosc.* κόμμι propriè dictum, et κόμμι Ἰνδικόν, *Gal.* *Gummi Babylonicum*, *Gummi Saracenicum*, *Quorumd.* Gum Arabick is a Juice concreted into Grumes or Lumps as large as a Filberd or Walnut, and larger, of a round Figure, but sometimes long and cylindrical like Worms, or like a small Worm twisted up into a Knot. They are transparent, of a pale yellow Colour, or entirely yellow, or red, on their Surface generally wrinkled, brittle, and within shining like Glafs. They grow soft in the Mouth, and stick to the Teeth, are void of Taste, and give a glutinous Viscidity to Water in which they are dissolved. This Gum is brought from *Egypt*, *Arabia*, and the Coasts of *Africa*. The best is
white

white or of a pale Yellow, transparent, shining, dry, and free from Filth. It likewise comes to us in larger Lumps, of a reddish Colour, and full of Impurities, which are reserved only for mechanical Uses.

The Tree which produces it is called *Acacia folio Scorpioides leguminosæ*, C. B. P. 392. *Acacia vera*, J. B. I. 429. *Acatia Sant Akakia*, P. Alpin. de Plant. *Ægypt* 15. *Acacia Ægyptia*, Fab. Columnæ in Recch. Observ. 866. *Acacia Ægyptiaca foliis Scorpioides leguminosæ, Siliquis albis compressis, isthmo interceptis, floribus luteis*, H. Ludg. Bat. In Egypt about Cairo, according to *Augustin Lippi*, it grows in great Plenty. The Juice expressed from the green Pods of this Tree is the *Acacia* of the Shops; but we shall treat of this in its proper Place. The Gum issues from Fissures in the Bark of the Trunk and Branches, in the Form of a viscid Juice, and in Time grows hard, not unlike the Gum which flows from Plumb-Trees, Cherry-Trees, &c. which have likewise much the same Qualities; but this is preferred, because its Virtues, having been confirmed by longer Experience, are better known. It appears in Grumes of different Sizes and Figures, as it happens to concrète upon the Tree, being either long, or round, or sometimes contorted like Worms: This last is called *Gummi Vermiculatum*, and was highly valued by the Ancients, but it differs from the rest only in Figure.

In a chymical *Analysis*, two Pounds of the purest Gum Arabick yielded three Ounces and five Drachms of clear Phlegm, without either Smell or Taste; ten Ounces, three Drachms, and fifty four Grains of acid and reddish Phlegm; one Ounce, six Drachms, and thirty six Grains of alkaline Liquor; and one Ounce, five Drachms, and twenty four Grains, both of thinner and thicker Oil. The black
Mafs

Mass remaining in the Retort weighed seven Ounces and six Drachms; which being calcined thirty Hours in a crucible by a reverberatory Fire, left one Ounce and thirty six Grains of gray Ashes; from which were got three Drachms and thirty six Grains of fixt alkaline Salt.

Gum Arabick is void both of Taste and Smell. It dissolves in Water, and not in Spirit of Wine or Oils. In the Fire it does not take Flame, but is converted into a Coal. Whence it appears, that it is compounded of a neutral Salt combined with a thick Oil, and a large Portion of Earth.

By its mucilaginous Parts it softens and inspissates sharp thin Lymph, and calms the too violent Motion of the Humours. It is given to Advantage in Disorders of the Jaws, in Hoarseness, Coughs, saline Catarrhs, Spitting of Blood, Stranguries, and bloody Urine. The Dose is from ℥j. to ℥ij. It is likewise serviceable where the *Mucus*, which covers the internal Parts, hath been abraded, as in the Jaws, Stomach, Intestines, Bladder, and *Urethra*; for it besmears the Passages over with its mucilaginous Parts, and preserves them from the corrosive Acrimony of the Humours. Moreover it is usefully mixed with acrid irritating Medicines, to obtund and temper their Force. Externally, being applied to Wounds, it stops Bleeding. We must observe, that to reduce it conveniently into Powder, the Mortar in which it is pounded ought to be hot.

It is given either in Powder, or dissolved in proper Liquors.

Take of Gum Arabick ℥j. Liquorice-Juice ℥ss. Sugar-Candy ℥ss. the distilled Water of Orange-Flowers, q. s. Make them into Troches, which may be used in Roughness of the Jaws, Hoarseness, and Coughs.

Take

Take of Gum Arabick ʒfs. Liquorice-Root ʒj.

Make a Powder for a scalding Heat of Urine.

Take of Gum Arabick ʒfs. dissolve it in ʒiij. of Scabious-Water; then add of *Venice Treacle* ʒj. *Diacodium* ʒfs. the spirituous Water of Cinnamon ʒj. Let a Spoonful of this Mixture be taken now and then in the Night, against a Cough which is troublesome in Bed.

Take of Gum Arabick ʒj. boil in ℥ij. of Barley-Water, till the Gum is dissolved. With this Solution, and the Seeds of Melons, white Poppies, and Sweet Almond blanch'd, ā ʒfs. make an Emulsion; to which add of the Syrup of Marsh-Mallows ʒiij. This may be drank by Glassefuls in any Heat of Urine whatever.

Take of Gum Arabick ʒfs. dissolve it in q. f. of Penny-Royal or red Poppy-Water; then add Linseed-Oil fresh drawn ʒj. Syrup of Marsh-Mallows, or Comfrey ʒij. Make a Linctus f. a. and give it in a Cough from a Catarrh, or in a Spitting of Blood.

Another Gum, entirely resembling Gum Arabick, is called *Gummi Senega* or *Senica*, from a Province of the *Negroes* situate upon the River *Senega*. It is in larger Lumps than Gum Arabick, and is now very common in the Shops; but from what Tree it flows, I know not, unless it be a certain *Species* of *Acacia*. The white and transparent Pieces of this Gum are frequently sold for Gum Arabick, being not distinguishable from it either by its Appearance or Qualities. The *Negroes* often feed upon it boiled in Milk. It is mostly consumed here in mechanical Uses.

ARTIC. II. Of GUM TRAGACANTH.

Tragacantha, Tragacanthum et Dragacanthum, Off. Τραγάκανθα, *Diosc. Cbitica, Itica, Chateth, Alcuted, Alchatad, Arab.* This is a gummous Juice in long Threads, or Fillets, resembling small Worms variously contorted, or in semi-transparent white Grumes, though sometimes yellowish, reddish, or inclining to black. It is dry, yet somewhat adhesive to the Touch, and without Taste or Smell. It is brought from *Candy, Greece, and Asia.* It ought to be chosen in vermicular Pieces, white, like Ising-Glass, and free from any Mixture of Filth. When it has a Cast of red or black in its Colour, it is not fit for Use, except in some Trades.

It flows either spontaneously or by Incision from the Trunk and Branches of a low thorny Shrub, which is called *Tragacantha Cretica incana, flore parvo, lineis purpureis striato, Cor. I. R. H. 29.* It grows in *Candy,* and many Parts of *Asia.* *Tournefort* found it growing very common about *Mount Ida,* where in the Month of *July,* not only the Vessels of the Bark, but the Pores of the Wood also, when the Branches are cut off, appear quite turgid with gummous Juice. When the woody Fibres are dried and contracted by the intense Heat of the Sun, they press with so much Force upon the Juice, that it bursts the Vessels which contain it, and issuing forth concretes into long vermicular Pieces, larger or smaller, in Proportion to its Quantity and the Bigness of the Wound. If the Bark of the Branches, which are often spread abroad upon the Ground, be trod upon and bruised, or torn by Beasts which feed on the Shrub, the Juice always flows more abundantly from those Parts.

In

In a chymical *Analysis*, two Pounds of Gum Tragacanth yielded three Ounces and seven Drachms of clear Phlegm, without either Smell or Taste; ten Ounces and forty eight Grains of reddish Phlegm, of an empyreumatick Scent, and a subacid Taste, and bitterish, something like Peach-Kernels, which gave Marks of a strong Acid; one Ounce, two Drachms and forty Grains of acid, and alkaline urinous Liquor, gently tinged with red; one Ounce, two Drachms and fifty six Grains of reddish Oil, reckoning both the thicker and the thinner. The *Residuum*, which was black and dense like a Coal, weighed eight Ounces. This being calcined for twenty eight Hours left one Ounce of gray Ashes; from which were got two Drachms and thirty Grains of fixt alkaline Salt. The Loss of Parts in Distillation was seven Ounces, two Drachms and three Grains; in Calcination seven Ounces.

Gum Tragacanth therefore has the same Principles, and nearly in the same Quantity with Gum Arabick; yet contains something more acid Salt and Earth, but less Oil. It is not soluble in Oils, or Spirit of Wine. It swells greatly in Water, and becomes a thick Mucilage, which a large Addition of Water can scarce dissolve. This Property renders it useful to Apothecaries in making Powders with Sugar into Pills and Troches; because by a very little of the Mucilage a great deal of Powder may be reduced into a Mass.

This Gum inspissates the Humours, abates their Motion, and softens their Acrimony. It covers, with its soft *Mucus*, Parts which are excoriated and sore, and so asswages their Pain. Whence in a Cough, Hoarseness, and other Affections of the Breast proceeding from sharp Lymph, it is frequently prescribed; as also in Disorders of the Urine occasioned by Acrimony, as in a Dysury, Strangury,
and

and Ulceration of the Kidneys. Its Powder is either mixed with other increasating and softening Medicines, or is made into a Mucilage with Rose-Water, &c. The Dose is from ℥ss. to ʒij.

It is seldom used externally. Some recommend it for Chaps in the Hands, Feet, and Nipples; but it generally does more Hurt than Good: For being applied to the Skin, and growing dry by the Heat of the Part, it draws asunder the Lips of the Chap, and enlarges it.

Take Liquorice Juice and *Japan* Earth ā ʒj. Sugar-Candy ʒiij. Opium gr. ij. Mucilage of Gum Tragacanth q. f. Make Troches, to stop catarrhus Defluxions, and Coughing.

Take of Gum Tragacanth bruised q. v. macerate it in q. f. of Scabious-Water, till the Water acquires the Consistence of a Syrup. Then,

Take of this Mucilage ʒiij. the Water of Orange-Flowers ʒj. Oil of Sweet Almonds ʒj. Syrup of Marsh-Mallows ʒij. Mix and make a Linctus.

Take of the Mucilage of Gum Tragacanth ʒij. Oil of Linseed ʒj. Syrup of Jujubs and white Poppies ā ʒj. Make a Linctus.

ARTIC. III. Of MANNA.

Manna is a Word of great Antiquity, having been received into most Languages since the Time of the *Hebrews*, but not always implying the same Thing. Among the Writers of the earlier Ages this Name was sometimes given to a Sort of concreted sweet Juice, which they imagined to fall from the Heavens like a Honey-Dew upon the Leaves of certain Trees. This Juice was probably
T
known,

known, under the same Name, to the *Israëlites*; who perhaps assigned it afterwards to that Celestial Food which *God* sent down for their Support in the Desert, only because it had some Resemblance of the Manna they were before acquainted with*.

The ancient *Greeks* by the Word *Μάννα* understood the small Pieces of Frankincense, as we have observed *Chap. VII. Artic. VI.* and the sweet Juice which was imagined to fall down in the Form of Dew they called *Δροσόμελι, Ἀερόμελι, Ελαιόμελι*, (*viz.*) *Honey-Dew, aërial Honey, and Honey-Oil.* Under these, or other Terms of the like Purport, it frequently occurs in their Writings. *Aristotle* seems

* That the Manna, wherewith the *Israëlites* were miraculously supported in the Desert, was a Substance of a peculiar Nature, and different from all other Sorts of Manna, may reasonably be concluded from its having different Qualities, which rendered it proper for Food; but that the *Israëlites* were acquainted with any Sort of Manna before they came into the Desert does not so evidently appear. *M. Geoffrey* supposes that the Word *Man* has the same Signification in the *Hebrew* with *Manna*, and therefore that the Words *Man-hu*, *Exod. c. xvi. v. 15.* the Expression of the *Israëlites* upon finding it, ought to be translated *it is Man* or *Manna*; whence it would seem that some such Thing was known to them before. For this Interpretation he brings the Authority of *Salmasius*: I shall however take the Liberty to subjoin, in Defence of the common Translation, Part of a Note which I find in an old Edition of the Bible (*viz.*) “ When the People of *Israel* in
“ the Desert had spent their Provision of Meate brought from
“ *Ægypt*, and according to *God’s* Promise had received Store
“ of Quails; going forth in the Morning they saw a strange
“ Thing lye upon the Ground like to hoare Frost, whereat
“ maruelling they said one to an other: *What is this!* in their
“ Language *Man hu!* Whereupon, saith *Theodoret* (q. 30. in
“ *Exod.*) *their Demand was turned into the Name, and it was*
“ *called Manna.*” This indeed seems the most probable Interpretation, because the Words immediately following inform us, that *they knew not what it was.* But we must leave the Decision of this Point to those who are versed in the *Hebrew* Tongue.

to speak of it more than once; but his Scholar *Theophrastus* was much better acquainted with it. In his *History of Plants*, l. 3. c. 9. he says that Honey is produced from the Air, and is found upon no Leaves more common than those of the Oak-tree: And besides in a Fragment of his Book upon Bees, preserved by *Photius* in his *Bibliotheca*, he distinguishes three Kinds of Honey, (*viz.*) One which the Bees make from Flowers; another which proceeds from the Air, when the humid Exhalations of the Earth fall down again after they have been concocted by the Sun, which usually happens in the Time of Harvest; and herein it agrees with our Manna: A third Kind which is found in Reeds, which is the same with our Sugar. *Dioscorides* tells us, that *Elæomeli* or *Honey-Oil* flows from a certain Tree in *Syria*; that it is an Oil thicker than Honey, and of a sweet Taste. He says, that being given to the Quantity of about three Ounces in a Pint of Water, it purges Bile and Crudities. This seems to agree pretty well with what we call *Manna pinguis* or *fat Manna*. *Galen* upon *Aliments*, l. 3. c. 39. distinguishes the Honey of Plants from that of Animals, and speaks of it thus. “ It
 “ is produced upon the Leaves of Plants; yet is
 “ neither their Juice, nor their Fruit, nor any Part
 “ of them, but is of the same Nature with Dew,
 “ though it does not fall down so constantly as that,
 “ nor in so great Abundance. I remember that one
 “ Day in the Summer-Season, when a great deal
 “ of Honey had been found upon the Leaves of
 “ Trees and Shrubs, the Peasants were sporting
 “ for Joy, and singing *Jupiter melle pluit, Jupiter*
 “ *makes it rain Honey*. Now the preceding Night
 “ having been cold for that Time of the Year
 “ (which as we have said was Summer) and the Day
 “ before hot and dry, the most skilful Interpreters

“ of Nature suppose, that the Exhalations from
 “ the Earth and Water, after being perfectly attenu-
 “ ated and digested by the Heat of the Sun, had
 “ been re-united and condensed by the Coldness
 “ of the Night following. But this seldom hap-
 “ pens with us, though often every Year upon
 “ Mount *Libanus*; where they spread Skins upon
 “ the Ground, and then shaking the Trees, gather
 “ what falls from them, and fill Jars and earthen
 “ Vessels with Honey; which they called *roscidum*
 “ and *aerium Mel*, *roral* and *aërial Honey*.” *Hip-
 pocrates* likewise in his Book concerning Ulcers seems
 to have mentioned this melleous Juice of Mount
Libanus. “ To cure Ulcers (says he) another Me-
 “ dicament is mixed with the Wine, namely, a
 “ little cedrine Honey, (*mel cedrinum*.)” So he terms
 it, because it was gathered upon the Cedars of this
 Mountain, in the same Manner as the Manna of
Brianzon is now gathered upon Larch-Trees in *Dau-
 phiny*. *Amyntas*, l. i. *de Asiæ Mansionibus*, accord-
 ing to *Athenæus*, gives the following Account of
 aërial Honey. “ They pull it from Trees with the
 “ Leaves upon which it is found, and then put it
 “ together in the Form of a *Syrian Mass*. Some
 “ make it into Balls, from which, when they have
 “ a Mind to take it, they break small Pieces. These
 “ being dissolved in Water, they afterwards strain
 “ the Liquor, and drink it out of wooden Cups
 “ which they call *Tabatæ*; and its Taste is like that
 “ of diluted Honey, or even much more agree-
 “ able.” These Words are applicable enough to
 some of our officinal Manna. *Pliny* speaks of this
 melleous Juice, agreeably indeed, but with very
 little Regard to Truth. “ Upon the first Approach
 “ of Morning (says he) the Leaves of Trees are
 “ found covered with Honey like Dew; and if any
 “ Person have been walking abroad early, he may
 “ perceive

“ perceive his Garments bedewed, and his Hairs
 “ matted together, by this Liquor, &c.” Neither
 have the *Latin* Poets been silent with Respect to this
 Juice. Thus *Virgil*, *Ecl.* 4.

Et duræ quercus sudabunt roscida Mella.

And *Ovid*, *Metamorph.* 1.

Flavaque de viridi stillabant Ilice mella.

The *Arabians* under aërial Honey comprehend *Tereniabin*, *Manna*, and *Sacchar Albuzar* or *Alasser*. Of these they enumerate many Sorts, but with so great Obscurity that it is impossible to ascertain their Distinctions. *Avicenna* defines *Manna* to be all the sweet Dew in general which falls from the Heavens upon Stones or Trees, and which grows thick like Honey, or hardens like Gum ; such as *Tereniabin*, *Siracon*, and the *Honey* which he says is brought from *Corasseni* in the Form of a *Rob* (perhaps the fat and liquid Honey of Mount *Libanus* in the Consistence of a thick Syrup.) In another Place he says, “ *Tereniabin* or *Trungubin*
 “ is a Dew which falls mostly in *Corasseni*, in the
 “ Countries beyond the River, and in our Country
 “ for the most Part upon the *Albagi*. *Sacchar Alas-*
 “ *ser* is *Manna* which falls upon the *Albusar* like
 “ Grains of Salt.”

According to *Serapio* *, *Tereniabin* is a Dew which falls from the Heavens resembling a concreted granular Honey. “ It is called (says he) *Honey of*
 “ *Dew*. It falls mostly upon Trees in an oriental
 “ Country called *Corasseni*. The Leaves of the

* He is commonly called *Serapion*, but I have wrote his Name as above out of Deference to my Author, who seems to have had a good Acquaintance with the medical Writings of the *Arabians*.

“ Trees are like to green Thorns, the Flowers red,
 “ and they bear no Fruit.” The Manna of which *Serapio* here speaks, is perhaps not different from that which *Avicenna* has above told us is gathered from the *Albagi*. I pass over the other *Arabians*, from whose Writings few certain Inferences can be drawn concerning the Nature and different Sorts of *Manna*. It is however very evident that this Juice, called *Manna* and *aërial Honey*, was known to them, as well as to the *Latins* and the *Greeks*.

Two Questions here offer themselves to our Consideration (*viz.*) 1. Whether that Honey-Dew, such as the Ancients imagined it, did ever really exist? 2. Whether our Manna falls down like Dew upon Trees and Plants, or be produced within them?

As to the first Question, I must indeed ingenuously confess that this Dew is entirely unknown to me; and, in my Opinion, no such is ever observed to descend either upon Flowers, Leaves, or Stones. The sweet Juice which is found in many Flowers, derives its Origin from the interior Organs of the Plant. The Juice which is sometimes perceived upon Leaves, whether liquid or concreted, hath either oozed out of the Pores of the Leaves, or hath distilled from the Leaves of other Trees. In fine, if Stones sometimes appear sprinkled as it were with Drops of a sweet Liquor, it hath not fallen upon them from the Heavens, but from the Leaves of some neighbouring Trees, or by some other Means hath been brought to them. *Bodæus a Stapel*, in his Notes upon *Theophrastus's* History of Plants, gives us an Account of an excellent Manna, extremely white, and as sweet as Sugar, which was found upon Willow-trees, upon Stones, and upon the Earth; where it had been deposited by an innumerable Swarm of large Flies in so great Plenty, that from the Number of Drops falling from a Willow-

Willow-Tree, upon which there was a large Collection of it, one would have said it was a Dew. This Liquor being deposited Drop by Drop upon Leaves and Stones, in a short Time concreted, and had the Whiteness, Sweetness, Consistence, and Virtue of the best Manna; and many Persons gathered it for Use: But that which fell upon the Earth or in dirty Places was lost. Now it is probable that the Flies, having gathered this sweet Juice either from the Willow-Trees or other Plants, had so satiated themselves with it, that they were forced to discharge in different Places what they had got; and this we may the rather suppose, because certain Parts of the Bodies of these Flies were observed to be more prominent than the rest, and full of little Holes, from which a great deal of Moisture issued, in very small white Drops, after the Manner of Sweat.

With Respect to the latter Question, the Learned have been divided in their Opinions. Almost all the Ancients, both *Greeks* and *Arabians*, believed that the Manna which was collected upon some Trees was formed of Vapours raised from the Earth by the Heat of the Sun, and condensed near its Surface by the Cold of the Night, in the same Manner as Dew or hoary Frost; or that it was an excellent Juice of the Earth, which being elevated by the Summer-Heat, and digested in the Air into a sweet Liquor, was condensed by the nocturnal Cold, and fell down like Dew upon the Leaves of Trees and Shrubs. *Angelus Palea* and *Bartholomæus*, two *Franciscan* Friars, who published Commentaries upon *Mesue* in the year 1543. were the first who asserted in Writing, that Manna was the inspissated Juice of the Ash-Tree, as well of the *common*, as of the *wild* Tree, which is called *Ornus*. Afterwards *Donatus Antonius Altomarus*, a Physician and Philosopher

pher of *Naples*, in great Fame about the Year 1558. confirmed this Opinion by the following Observations.

1. “ It is therefore (says he) the proper Juice of
 “ these Trees, which is gathered in the Dog-Days
 “ every Year for many Days successively. For
 “ though the Trees have been covered with Linen
 “ or Woollen Cloths for many Days and Nights,
 “ so that no Dew could fall upon them, they were
 “ nevertheless observed, during that Time, to pro-
 “ duce Manna. Now, we may conclude, that this
 “ could not have happened, unless it had flowed
 “ spontaneously from the Trees.

2. “ All People who gather Manna acknowledge,
 “ that when they have taken it off the Trees, af-
 “ terwards a fresh Quantity flows by little and little
 “ from the same Places, and is inspissated by the
 “ Heat of the Sun.

3. “ They moreover relate, that in the Trunks
 “ of Ash-Trees, upon the Bark, some Vesicles or
 “ Protuberances are often found, containing a white,
 “ sweet, thick Juice, which becomes an excellent
 “ Manna.

4. “ Further, if when these Trees are cut the
 “ same thick Juice be found in the Incisions, who
 “ can doubt that it is the Juice of the Trees which
 “ is protruded through their Trunk and Branches.

5. “ This is also confirmed by the Inhabitants of
 “ the Country, who assert that they have seen
 “ Grasshoppers, and other Animals, boring into the
 “ Bark of these Trees to suck out the Juice ; and
 “ when they have been driven away, they affirm
 “ more Manna to have still issued from the Per-
 “ forations.

6. “ I have likewise known Men worthy of Cre-
 “ dit, who have assured me they have often cut
 “ down Ash-Trees to make Hoops for Casks, and
 “ that when they were cloven, and exposed to the
 “ Sun,

“ Sun, they found a considerable Quantity of Manna
 “ in the Wood.

7. “ People who are employed in making Coals,
 “ frequently perceive, when they are burning their
 “ Wood, that the Heat of the Fire occasions Manna
 “ to exude from the neighbouring Ash-Trees.”

The same Author observes, that notwithstanding Manna is copiously produced on all Parts of the Ash-Tree usually called *Fraxinus*, yet on the *Ornus* or wild Ash it is very rarely found any where but upon the Trunk and the thicker Branches. Perhaps the Reason of this may be, that the wild Ash, growing in rocky, mountainous Places, and barren Soils, is of a drier Nature; wherefore, not containing so large a Stock of Moisture, nor so much diluted, a superfluous Quantity thereof is seldom propelled to the Leaves or smaller Twigs. Besides, as this Tree is very rough and knotty, its Juice is easily absorbed between the Bark of the Trunk, and larger Ramifications, before it can arrive at their Extremities.

He likewise adds that Manna is collected from the same Trees every Year, which yield it for thirty or forty Years successively; insomuch that many Persons are always found ready to purchase such Trees, on Account of their annual Produce of this Commodity. Moreover, there are some Trees in the same Place, and of the same *Species*, whereupon no Manna is to be found.

Lastly, These Observations of *Altomarus* have been confirmed by *Goropius* in his *Niloscopium*, by *Lobelius* and *Pena*, by *Costæus*, *Cornelius Consentinus*, *Paul Boccone*, &c. who have relied more upon what they have seen themselves, than upon the Authority of others.

Therefore, we shall define Manna to be a Sort of Gum exuding from different Kinds of Trees,

at first liquid, but afterwards thickening into Grumes under the Form of an essential, oily, concreted Salt. It is found not only upon Ash-Trees, but sometimes also upon the Larch-Tree, the Pine, Fir, Oak, Juniper, Maple, Olive, Fig-Tree, and others.

It differs according to its Consistence, its Form, the Trees from which it exudes, and the Places wherein it is gathered. One Sort is liquid, of the Consistence of Honey: Another in solid Drops, which is called *Masticina*. It sometimes forms itself into small Lumps, and is called *Manne en Marrons*; or sometimes runs into long Tears like Icicles, and then is termed *vermicularis* or *bombycina*. From the Trees out of which it flows, it takes the Names of *Cedrina*, *Fraxinea*, *Laricea*, *Albagina*, &c. With Respect to Place, it is divided into the *Oriental*, and *European*.

Oriental Manna, which is found in the *Indies*, in *Persia*, and *Arabia*, is twofold; the *liquid* which is like Honey, and the *concreted*. Many Authors make Mention of the liquid Sort. *Consentinus* and *Bellonius* tell us that it is called in *Arabia* by the old Name *Tereniabin*. They suppose it to be the *cedrine* Honey, *Κέδρινον μέλι*, of *Hippocrates*, and the *Dew of Mount Libanus* of which *Galen* speaks.

Bellonius, in his Observations, says that the Monks inhabiting *Mount Sina* gather a liquid Manna upon their Mountains, which they call *Tereniabin*, to distinguish it from the hard or solid Manna. *Garcias* and *Cæsalpinus* also relate that the same is met with in the *Indies*, and likewise in *Italy* upon the *Apen-nine* Hills, and that it resembles a white purified Honey, but is soon corrupted. This *liquid* Manna differs only in Consistence from the *solid*, into which it will concrete, if not prevented by the Humidity of the Air. *Avicenna*, *Garcias ab Horto*,
and

and *Acosta*, enumerate more Sorts of solid Manna; but not with sufficient Accuracy. We may however distinguish three principal Sorts, (*viz.*) 1. The *Mastichina*, so called, because it is in small indurated Grains, like Grains of Mastich. 2. The *Bombycina*, which is in long cylindrical Tears like Silk-Worms. 3. That which is compacted into small Masses like the Manna of *Athenæus* above-mentioned, or like the aërial Honey of the Ancients which was brought to them in Glebes: Such is likewise the Manna which now comes to us, commonly called *Manne en Marons*.

European Manna is of different Sorts; as the *Italian* or *Calabrian*, the *Sicilian*, and that of *France* or *Brianzon*; but these are not liquid.

It is also distinguished into many Sorts from the Trees upon which it is gathered; but that which is got from Ash-Trees in *Calabria* is what we chiefly use in Physick.

Manna Calabra, *Off.* *Calabrian* Manna of the Shops is a melleous concreted Juice, sometimes in friable Grains, and sometimes in long Tears or Grumes; when fresh, of a white Colour, somewhat transparent, but growing reddish with Age, and, when exposed to a moist Air, melting into the Consistence of Honey. It has an agreeable Taste of Sugar with some Acrimony. The best is white, or yellowish, in small Grains, or long hollow Grumes, of a sweet, and not unpleasent, Taste, and free from Impurities. When it is fat, like Honey, blackish, and full of Dirt, it is rejected. The fat Manna, commonly called *Manne grasse*, is injudiciously preferred by some; it being oftentimes nothing but Manna spoiled in the Carriage, either by the Moisture of the Air, or by the Casks, wherein it is contained, letting in Water from the Sea, or the Rain, &c. This fat Manna likewise is often composed of
coarse

coarse Sugar mixed with Honey and a little Scammony ; whence it sometimes purges more violently than the others. Moreover, under the Name of Manna we frequently meet with dense, white and opake Masses, which are made of Sugar and Manna boiled together to the Consistence of a solid Electuary : But this factitious Sort is easily distinguished from the genuine, by its Weight, Opacity, and different Taste.

Manna is got from two Sorts of Ash-Trees. The one is called *Fraxinus humilior, sive altera Theophrasti, minore et tenuiore folio*, C. B. P. 416. *Ornus, Ludg.* 83. The other is called *Fraxinus rotundiore folio*, C. B. P. 416. *Ornus, Quorumd.* They differ something from our common Ash, named *Fraxinus excelsior*, C. B. but not so much as to be properly accounted distinct *Species*. The Manna flows from them in *Calabria*, and *Sicily*, either spontaneously or from Incisions.

In *Calabria*, from about the twentieth Day of *June* to the End of *July*, provided the Weather be fair, it issues spontaneously from the Trunk and large Branches of these Trees, continuing to flow from Noon till Evening under the Form of a clear Liquor, which gradually thickens into hard white Grumes. If the following Night be serene, they scrape the Manna off in the Morning with wooden Knives ; but if the Weather during the Night have been wet or foggy, it melts and is entirely lost. When they have gathered it, they put it into unglazed earthen Vessels. Afterwards they expose it to the Sun in white Papers spread upon Boards, till it becomes so dry as not to adhere to the Fingers. This is called *Manna spontanea, spontaneous Manna*, and *Manna di corpo, Manna of the Trunk*.

About the End of *July*, when the Juice ceases to flow, the Country-People make Incisions into the
Trees,

Trees, of both Sorts, quite through their Bark, and then the Juice issues forth again, and runs into larger Grumes. The Quantity is often so great that it flows down to the Bottom of the Tree, and there forming itself into large Masses, is left a Day or two to thicken. Afterwards it is divided into Pieces and dried in the Sun. This is termed *Manna coacta*, and by the Inhabitants *Forzata* and *Forzatella*, because it is only obtained by making a Wound in the Bark. Its Colour is not very white, but rather reddish, and often inclining to Black, by Reason of the Dirt and Impurities which are mixed with it.

A third Sort, which is gathered upon the Leaves of some Ash-Trees, is called *Manna di frondo*. In *July* and *August*, about the Middle of the Day, it exudes spontaneously from the Leaves, like small, transparent, liquid Drops. These becoming dry with the Sun, concreate into white Grains, of the Bigness of Millet or Wheat; so that the Leaves sometimes appear in *August* as if they were covered with Snow. Notwithstanding this Manna was very much used formerly, it is now rarely met with in the Shops in *Italy*, by Reason of the Difficulty which attends the gathering it.

The Inhabitants of *Calabria* distinguish the Manna obtained by Incision from Trees which have yielded some of their own Accord before, from that which is drawn from such wild Ash-Trees as yield none of their own Accord. The latter is accounted more valuable, as the spontaneous Manna of the Trunk is preferred to the others. Sometimes also, when they have cut the Bark, they insert Straws and slender Twigs in the Wounds. The Juice, as it runs along these, is inspissated, forming long stactical Grumes, like Icicles. When they have acquired a proper Size, the Straws and Twigs being drawn out, they are laid in the Sun to dry, and afterwards

terwards appear in long, hollow, light Pieces, of a beautiful white Colour, sometimes mixed with a Cast of Red. They are then very carefully put up into wooden Casks, being highly valued; and indeed deservedly, since they are entirely free from Impurities. Next after this Sort, which we commonly term *Manne en larmes*, in our Shops we prefer the *Calabrian* Manna, and that which is gathered in *Apulia* about the Mountain *Garganus*; this however is something yellow, and not very dry. After these we rank the *Sicilian*, which is whiter and drier. Lastly, the Sort which is gathered near *Civita Vecchia* in the Territory of *Rome*, called *La Tolfa*, which is dry, more opaque, and heavy, is sold cheaper than the others, and is least esteemed.

In a chymical *Analysis*, two Pounds of choice Manna distilled in B. V. yielded two Ounces, six Drachms, and forty eight Grains of limpid Phlegm void of Taste and Smell, which yet inclined the Tincture of Turnsole to a red Colour. Then the *Residuum*, being dried, reduced to Powder, and distilled from a Retort, afforded one Ounce and one Drachm of clear Liquor manifestly acid; nine Ounces of reddish empyreumatick Liquor, both acid and a little urinous; two Ounces of thin reddish Oil; and two Ounces, four Drachms, of thick resinous Oil, concreted into Grumes. The black Mass in the Retort, weighing six Ounces, five Drachms, and twelve Grains, was hard, dense, and void of Taste. This being calcined for eight Hours in a reverberatory Fire, till it gave over smoking, left six Drachms and six Grains of brown Ashes; from which were extracted two Drachms of fixt alkaline Salt. The Loss of Parts in Distillation was seven Ounces, two Drachms and twelve Grains; in Calcination five Ounces, seven Drachms and six Grains. Manna therefore is composed of a copious essential

or tartarous Salt, and a small Portion of ammoniacal Salt, involved in a large Quantity of both thick and thin sulphur.

The solutive Virtue of Manna was not known to *Galen*, though *Dioscorides* seems not to have been ignorant of it, for he asserts that *Elaiomeli* draws off Bile and crude Humours. But *Aëturius* is the first among the *Greeks* who expressly mentions it as a Purge. “Black Cassia (says he) and Manna purge very gently. Cassia being taken to three or four Drachms scarce moves the Belly. Manna must still be taken in a larger Quantity, and it evacuates yellow Bile.” The *Arabians* ascribe to it a Virtue of purging gently, of lubricating the Throat and Breast, and detarging the Stomach. Among modern Physicians its Use is very common to relax the Belly, to draw off serous Humours, and to discharge thick viscid Matter from the first Passages. It is reckoned so mild a Cathartick, that it may be given safely to old People, and Children; likewise to pregnant Women, and those of the more delicate Constitutions.

It agrees particularly, says *Rolsincius*, in cold Diseases, in the cooler Temperaments, and in temperate Climates; it softens the Acrimony of the Humours, and dissolves their Lentor. Wherefore, in Catarrhs and Coughs from thin acrid Phlegm, in the Beginning, it is given with Success; for it immediately precipitates the Phlegm through the Intestines. It is useful in Distempers of the Breast, especially when the Lungs are stuffed with a tenacious viscid Phlegm, as in a humoural Asthma. In bilious Affections, and in others which are attended with Inflammation, as in the Pleurisy, Peripneumony, and a Tension of the Belly from thick fermenting Bile, it is very serviceable, by dissolving the Humours and carrying them off by Stool; whatever some may assert to the contrary.

In hot Temperaments it is hurtful, says *Rolfincius*, and in hot Diseases, unless it be mixed with Acids, as Tamarinds, &c. for otherwise it is converted into Bile, and supplies as it were Fuel to the hot and dry Cacochymy. *Rondeletius* and *Duretus* suppose it to be dangerous for Persons abounding with Bile. Indeed, a Medicine of this Kind ought not to be given to such, unless there be a Necessity of purging; but then no Purge can be more safe than this, if it be properly qualified with Acids, (*viz.*) with Tamarinds, Cream of Tartar, and Lemon-Juice, or with purified Nitre, &c.

Mesue says it operates slowly, and therefore directs it to be mixed with other Purgatives; which the modern Physicians have observed, who prescribe it with Cassia, Sena, Rhubarb, &c. It has also this Inconvenience, that it easily ferments, or, as *Hoffman* speaks, contains something flatulent: Wherefore he advises to give it in Decoction. The Boiling however, as *Rolfincius* cautions, ought to be gentle, lest by an Evaporation of the lighter Parts its Efficacy be destroyed. Some likewise object that it dissolves the Humours, and only evacuates Serum, and that it occasions Driness and Thirst; for which Reasons many Practitioners have entertained no very favourable Opinion of it.

But if we examine cathartick Medicines over scrupulously, we shall find no one without its Inconveniences, since they all seem, as *Galen* testifies, to be somewhat contrary to Nature; and this is more particularly to be understood of Hydragogues, which exert their Action not only by vellicating the Membranes of the Intestines, but also especially by fermenting and dissolving the Blood and Lymph.

However, since Purgatives, and sometimes even Hydragogues, are necessary, Manna ought to be preferred to others; because it is an efficacious Me-

dicine, and among Hydragogues the least prejudicial. Its Acrimony may be blunted by boiling it a little with Tamarinds or Cassia. If it require a *Stimulus*, some Rhubarb or Sena may be mixed with it ; or, to make it operate still more powerfully, a few Grains of emetick Tartar, in the Proportion of one Grain to each Dose. Thus a plentiful Evacuation of Bile and serous Humours may be promoted, without the least Pain or Sickness. Therefore Manna, provided it be properly given, will prove a sufficiently mild, and a useful Medicine.

Take of *Calabrian* Manna ζ ij. Crystal Mineral ζ j. Dissolve them in an alterative Broth, which may be taken to relax the Belly.

Take of choice Manna ζ ij. Tamarinds ζ j. Boil them in ζ xij. of Whey. Divide the strained Liquor into two Doses, to be drank at the Distance of an Hour from each other.

Take of Manna ζ iss. choice Rhubarb and Cream of Tartar, \bar{a} ζ j. Boil them gently in ζ vj. of a Decoction of the Roots of Dog's-Grass and wild Succory. To the strained Liquor add the Juice of an Orange or Citron.

Take of the Pulp of Cassia with the Stones ζ j. Manna ζ iss. *Sal Polychrestum* ζ j. Boil them in ζ vij. of Succory Water. In the strained Decoction dissolve of the compound Syrup of Apples, or of Peach-Blossoms, ζ j. Make a Potion to be given in the Morning on an empty Stomach.

Take of the Pulp of Cassia, fresh drawn, with the Stones ζ iiij. *Calabrian* Manna ζ ij. Boil them in ζ xij. of a Decoction of Barley. In the strained Liquor dissolve gr. ij. of emetick Tartar, and divide into two Doses, to be drank within about four Hours one after the other.

Take of the best Manna $\mathfrak{z}\text{ss}$. or $\mathfrak{z}\text{vj}$. Cow's Milk $\mathfrak{z}\text{ij}$. Boil them gently, and let the Milk be strained and given to Children.

Take of Manna $\mathfrak{z}\text{ij}$. common Salt $\mathfrak{z}\text{ss}$. Dissolve them in $\mathfrak{z}\text{iv}$. of Spring Water. Pour this Solution upon bitter Almonds bruised N^o. vi. and add $\mathfrak{z}\text{iv}$. of Cow's Milk. Let the Liquor be strained by Expression, and drank warm.

Take of pick'd Sena $\mathfrak{z}\text{iiss}$. Cinnamon and Coriander Seed, $\bar{\text{a}}$ $\mathfrak{z}\text{ss}$. Liquorice shaved and bruised $\mathfrak{z}\text{ij}$. Cream of Tartar $\mathfrak{z}\text{j}$. Let these be infused for six Hours in $\mathfrak{z}\text{vii}$. of clear Water, in which dissolve $\mathfrak{z}\text{iiss}$. of Manna. Clarify the strained Liquor with the White of an Egg, and $\mathfrak{z}\text{ss}$. of strong Vinegar, to make a Potion.

Take *Calabrian* Manna and the universal Confection, $\bar{\text{a}}$ $\mathfrak{z}\text{j}$. Boil them in $\mathfrak{z}\text{vj}$. of Plantain-Water, and give the strained Decoction in a Diarrhœa or Dysentery.

Take of Manna $\mathfrak{z}\text{iiss}$. of the universal Electuary with a double Quantity of Rhubarb $\mathfrak{z}\text{j}$. Let them boil a little in $\mathfrak{z}\text{vj}$. of a Decoction of the Roots of Dog's-Grass, and add to the strained Liquor $\mathfrak{z}\text{j}$. of the Oil of Sweet Almonds. Let this be drank in colick Pains, and Inflammation of the Bowels, when purging is required.

In some Compositions, as purgative Electuaries, &c. Manna may be employed instead of Conserve. Thus,

Take of choice Manna $\mathfrak{z}\text{vj}$. *Cornachine's* Powder $\mathfrak{z}\text{ij}$. Jalap $\mathfrak{z}\text{j}$. dulcified Mercury sublimate gr. xx. Syrup of Buckthorn q. s. for an Electuary.

Take Manna and Saffron of Iron prepared with May-Dew, $\bar{\text{a}}$ $\mathfrak{z}\text{ss}$. Myrrh, Saffron and dulcified Sublimate, $\bar{\text{a}}$ $\mathfrak{z}\text{ij}$. washed Aloes, Cream of Tartar

Tartar and Gum Ammoniack, ā ziiij. *Diagrydium* zifs. Mix with q. f. of the Syrup of Succory with Rhubarb, and make a Mass for Pills f. a. of which zfs. may be taken every Day, or zj. every third or fourth Day.

Besides the Sorts of Manna above described, we have another called *Manna Brigantiaca*, or *Laricea*, because it flows from Larch-Trees near *Brianzon* in *Dauphiny*. It is in small white Lumps, sometimes round and as big as Coriander-Seed, sometimes oblong and larger, of an agreeable sweet Taste somewhat resinous. This is seldom used at *Paris*, because the *Italian* is preferable, being much more purgative.

It is the nutritious Juice of the *Larix folio deciduo conifera*, J. B. which we have before mentioned in treating of Turpentine. From about the twentieth Day of *June* till the End of *August*, it exudes at different Times from the Leaves, provided the Weather be fair; for in rainy Seasons none appears. It adheres tenaciously to the Leaves, so as to be very difficultly separated from them: The Country People therefore cut down the Trees in the Morning, and pile up the Branches together in Parcels in a shady Place. By this Means the Juice, which is now too soft to be gathered, in the Space of twenty four Hours is inspissated and hardened. It is then gathered, and laid in the Sun till it becomes entirely dry; and afterwards is cleared as much as possible from the Leaves.

Some assert this Manna to be a Sort of Dew. But *Lobelius* and *Pena* relate that Manna has been found, in the Summer, upon Branches of the Larch-Tree which have been carried into a Cellar the Day before, when none was visible upon them; from which Experiment it evidently appears to be the Juice of the Tree.

Another Sort of Manna is used in the Eastern Countries, which is an Exudation from a small thorny Shrub, named *Albagi Maurorum*, *Rauwolf*. *Hist. Ludg.* 94. *Genista-Spartium Spinosum*, *foliis Polygoni*, C. B. P. 394. It grows plentifully in *Egypt*, *Armenia*, *Georgia*, *Persia*, about Mount *Ararat*, and in some Islands of the *Archipelago*. It is often found twisted about with Dodder. The whole Plant has an astringent Taste; and sometimes in *Egypt*, according to *Augustin Lippi*, it lets fall a red astringent Tear, like Dragon's Blood.

Rauwolfius and *Tournefort* tell us that upon its Leaves, Stalks and Branches, especially in *Persia*, the People collect Manna, which they term *Trunschibin*, and the *Arabians Tereniabin* and *Trungibin*. In the hotter Months of the Summer it breaks forth in Drops, which harden into reddish Grains of the Bigness of Coriander-Seed. These, when gathered, are compacted into a large Lump, with a Mixture of Leaves, Thorns, &c. If it were entirely pure, it would be no less efficacious than *Calabrian Manna*: But the Inhabitants give it to ℥iij. for a Dose; because it usually consists of a greater Proportion of Leaves than Juice.

The renowned *Tournefort* makes no Doubt but that this is the *Tereniabin* of *Serapio* and *Avicenna*, which, according to their Accounts, was a Manna of the same kind, descending from the Heavens, like Dew, upon certain thorny Shrubs.

Of GUM-RESINS.

ARTIC. I. Of GUM AMMONIACK.

Ammoniacum et Gummi Armoniacum, Off. *Αμμονιακόν*, *Diosc.* *Αμμονιακόν Συμίκμα*, *Gal.* *Gutta Hammoniaca*, *Latin.* *Raxach et Assach*, *Arab.* Gum Ammoniack

moniack (as it is called) is a concreted Juice of a middle Nature between a Gum and a Refin. It is sometimes in large Glebes composed of small Grumes, of a brownish Colour, with white or reddish Spots interspersed through its Substance, so as to resemble the Mixture in the *Benzoinum amygdaloïdes*. Sometimes it comes to us in dense, solid Tears, not unlike Frankincense, of a yellowish or brown Colour on the Outside, and white or inclining to yellow within, and shining. It has a sweet Taste when first taken into the Mouth, which afterwards becomes bitter, and a penetrating Smell, something like Galbanum, but stronger. It softens in the Hands, becomes ductile under the Teeth, and grows whiter upon chewing. Being thrown upon burning Coals it takes Flame; and is soluble in Vinegar, or hot Water. It is brought to us from *Alexandria* in *Egypt*.

For internal Use the Tears are preferred to the Glebes. The best are large, dry, and free from Impurities. The Glebes likewise, when clear and interspersed with granular Spots, are approved. If they have any Mixture of Filth, they are purified by being dissolved in Vinegar, and then strained and inspissated. But by this Preparation the Gum is greatly deprived of its volatile Parts.

The pure Ammoniack in Tears *Dioscorides* calls *γραῦσμα*, and that which is impure from a Mixture of Sand and Gravel, he calls *φύραμα*. He tells us that it is the Juice of a Sort of *Ferula*, growing in that Part of *Libya* which lies near the Temple of *Hammon*. This Shrub, says he, is called *ἀγασυλῖς*. *Pliny* gives it the Name of *Metopion*.

It is indeed evident that Gum Ammoniack is a milky Juice, flowing either spontaneously or by Incision from a certain umbelliferous Plant not yet described. This we may conclude from the Seeds,

which are sometimes mixed with the Glebes, being foliaceous, and like those of Dill, but larger. And the Plant grows in that Part of *Africa* which borders upon *Egypt* to the West, and is now called the Kingdom of *Barca* *, wherein there formerly stood a famous Temple dedicated to *Jupiter Ammon*; whence the Gum took the Name of *Ammoniacum*.

In a chymical *Analysis*, two Pounds of choice Gum Ammoniack yielded six Ounces, one Drachm, and thirty four Grains, of transparent, reddish, odorous, and subacid Phlegm; one Ounce, six Drachms of urinous Phlegm; two Ounces, five Drachms, and forty eight Grains of transparent, yellowish, odorous Oil; and seven Ounces, two Drachms, of yellowish and brown Oil, of a thicker Consistence. The black Mass remaining in the Retort weighed eight Ounces and seven Drachms; which being calcined in a Crucible for twenty Hours, left one Ounce and twelve Grains of brown Ashes: From which were extracted, by Lixiviation, one and sixty Grains of fixt alkaline Salt. In this Distillation the Loss of Parts was five Ounces and two Drachms; and in the Calcination seven Ounces, six Drachms, and sixty Grains.

By this *Analysis* Gum Ammoniack appears to be compounded of a large Quantity of Sulphur, both thick and thin, with some tartarous and ammoniacal Salt, and a small Portion of Earth.

It softens indurated Parts, incides and dissolves thick and tenacious Humours, and discusses Congestions. It is serviceable to Asthmaticks, dissipates crude Tubercles of the Lungs, resolves scirrhous Tumours of the Liver, Mesentery, Spleen, and Womb, promotes the menstrual Evacuations when suppressed, opens Obstructions, discusses

* In that Part of *Barca*, which in the old Geography was called *Marmorica*, and was a Province of the ancient *Libya*.

Tophes in the Joints, and sometimes gently relaxes the Belly. It is given internally from ℥ss. to ʒj. in the Form of an Emulsion, Electuary, Bolus or Pills. Externally it is applied to scirrhus, scrophulous, and other hard, obstinate Swellings.

Take of choice Gum Ammoniack ʒss. dissolve it in a Mortar with Hyssop-Water ʒiv. white Wine ʒij. Divide the strained Liquor into two Draughts to be taken in an Asthma.

Take Gum Ammoniack and Flowers of Benzoine, ā ʒss *. Balsam of Sulphur with Oil of Aniseed q. f. Mix and make a Bolus to dissolve Infarctions of the Lungs.

Take of the purest Gum Ammoniack ʒiss. Flowers of Benzoine ʒj. Powder of Wood-Lice ʒij. Extract of Saffron and Balsam of Peru, ā ℥ss. Balsam of Sulphur with Turpentine q. f. Mix and make Pills. These are highly commended by *Morton* in the Beginning of a scrophulous Consumption. The Dose is gr. xij. three Times a Day.

Take Gum Ammoniack and washed Aloes, ā ʒj. Myrrh, Sena and Saffron powdered, ā ʒss. Syrup of Wormwood q. f. Mix and make Pills. The Dose is ℥j. every Day in the Morning on an empty Stomach, in Obstructions of the Womb and Bowels.

Take Gum Ammoniack and powdered Wood-Lice, ā gr. xx. Æthiops Mineral ʒss. Conserve of Marygold Flowers q. f. Mix and make a Bolus, to be given every Day against scrophulous Affections, with the following Purge every fourth Day.

* Half a Drachm of the Flowers of Benzoine is too large a Dose. My Author has before confined the Dose between three Grains and twelve: I therefore suppose this must have been a Mistake of the Press.

Take Gum Ammoniack and dulcified Mercury Sublimate, ā gr. xv. Troches *Albandal* gr. x. Syrup of Peach-Blossoms q. f. for a Bolus.

Take Gum Ammoniack, Aloes, and the aperient Saffron of Iron, ā ʒj. Cinnamon and Nutmeg, ā ʒfs. Vitriolated Tartar ʒij. Conserve of Wormwood q. f. Mix and make an Electuary. The Dose is ʒij. twice a Day in a Suppression of the *Menses*, and Obstructions of the Liver and Womb.

Take Gum Ammoniack and Cream of Tartar, ā ʒj. Sena powdered ʒvj. Diaphoretick Mineral ʒiij. Troches of Agarick ʒij. Troches *Albandal* ʒij. *Diagrydium* ʒj. the universal Electuary ʒij. Syrup of Peach-Blossoms q. f. to make an Electuary, of which ʒiij. may be taken every other Day to remove inveterate Obstructions of the Mesentery.

Take Gum Ammoniack and the Plaister of Hemlock, ā p. æ. Mix and make a Plaister to be applied externally over a Scirrhus of the Liver, Spleen, or Mesentery.

Take of Gum Ammoniack q. v. Oil of Cloves and Oil of Sweet Almonds, ā q. f. Make them into a Liniment to resolve scrophulous Tumours and Tophes in the Joints.

The yellow or reddish Oil, which is obtained by distilling Gum Ammoniack from a Retort, is commended in the Asthma, and in difficult Respiration; and the dark coloured Oil, which comes over the last, is externally a good Resolvent in the Cases above-mentioned.

ARTIC. II. Of ASSA FOETIDA.

Assa Foetida, Off. Σίλφιον, *Diosc. et Theophrast.*
 Όπος, *Hippoc.* Όπος Μηδικός, Παρθικός, Κυρωναικός,
Nonnullor.

Nonnullor. Laser et Laserpitium, Plin. et Latinor. Albit, Avicen. Σκορδολάσαρον, Quorumd. recentior. Græcor. Hing, Persar. et Indor. Stercus Diaboli, Nonnullor. It is a Gum-Resin of a compact Substance, when fresh soft and ductile like Wax, in large Glebes composed of various shining Grumes, partly whitish or yellowish, and partly reddish, of a fleshy Colour, or tending to that of a Violet; of a foetid Smell, like Garlick, but stronger; and a bitter, acrid, biting Taste. In the Shops we meet with two Sorts: One impure and foul; another pure, of a clear reddish Colour, and variegated with a great Number of elegant white Tears. It comes to us from *Persia* and the *East Indies*. It ought to be chosen of a strong foetid Smell, not too fat, and full of Tears. When it is old, unctuous, black, opake, or mixed with Sand, Pieces of Bark, &c. it must be rejected.

This Juice was very famous amongst the Ancients, not only for its Use in Medicine, but also in Sauces. They distinguished two Sorts of it with Respect to the Places where it was produced: The one was called the *Cyrenaïck* Juice, being collected in *Cyrenaïca*, a Province of *Africa*; and this was the more valuable: The other was called the *Median* or *Persian* Juice, because it was brought to them from *Media* and *Persia*; but this Sort was more common, and cheaper. The *Cyrenaïck*, according to *Dioscorides*, had a strong Smell of Myrrh; and the *Persian* was more foetid, something like a Leek or Onion; whence it was named *Scordolasarum*. Its Smell was not much unlike that of *Sagapenum*; for *Dioscorides* says, that the Smell of *Sagapenum* is between the Smell of *Silphium* and *Galbanum*, and that *Silphium* is often adulterated with *Sagapenum*. Therefore, the principal Difference between the *Cyrenaïck* Juice and the *Persian* consisted in the Smell, which was more agreeable in the former.

In the Time of *Pliny* the *Cyrenaïck* Juice was no longer to be procured. One Stalk only of the *Laserpitium*, (*viz.* the Plant) which was then found in *Cyrenaïca*, was sent to the Emperor *Nero*; and for a long Time no other Sort of *Lasfer* was brought to *Rome*, but what was gathered in *Persia*, *Media*, or *Armenia*, as at present it is produced in the same Countries.

Authors have disputed much about the *Assa Fœtida* of the Shops (*viz.*) whether this was the *Silphium*, *Lasfer*, and *Succus Cyrenaïcus* of the Ancients, or no? The Reasons why they were so long undetermined on this Head were these.

1. Because *Lasfer* was so highly esteemed among the Ancients, that the *Cyrenéans* offered a Plant of *Silphium* to *Battus* the Founder of their City *Cyrene*, as a Mark of their Respect and Acknowledgment; and a Medal was struck, which on one Side represented *Battus*, and on the other the *Cyreneans* offering to him the Kingdom and *Silphium*: Whence these Expressions, *the Silphium of Battus*, and *He is worthy of Silphium*, became proverbial. They likewise offered yearly to *Apollo* of *Delphos* a Stalk of *Silphium*, which they made Choice of as thinking it more precious than the other Productions of the Earth.

2. Because both the *Cyrenaïck* and the *Persian Lasfer* were reckoned among the most agreeable Seasonings for Food, and among the best of Medicines, as we are informed by *Pliny*, *Lib. 19. cap. 15. 570. T. 3.* “ Next after these, says he, (speaking of
 “ Mushrooms, &c.) we must rank the famous
 “ *Laserpitium*, which the *Greeks* call *Silphion*. It
 “ was formerly found in the *Cyrenaïck* Province.
 “ Its Juice, termed *Lasfer*, is so highly esteemed
 “ for its medicinal and other Uses, that it is equal
 “ in Value to its Weight in Silver. It is now many
 “ Years

“ Years since any was found in that Country, &c.
 “ and for a long Time no other *Lasfer* has been
 “ brought to us, than that which grows abundantly
 “ in *Persia* or *Media*, and *Armenia*; but it is much
 “ inferior to the *Cyrenaïck*, &c.”

3. Because many Authors have told us that the best *Silphium*, namely the *Cyrenaïck*, had a pleasant Smell and Taste: Wherein it seems to have been vastly different from our *Assa Fætida*, which has a Smell so detestable to the Inhabitants of *Europe*, that they give it the Name of *Stercus Diaboli*, the *Devil's Dung*.

But we must observe, that if *Silphium* was so much esteemed by the *Cyreneans*, *Greeks* and *Latins*, it is now no less by the *Persians*, and almost all the People of *Asia*: For by these it is called *Cibus Deorum*, the *Food of the Gods*; and to procure it they undergo the greatest Fatigue, in wandering for many Days together over the Tops of wild Mountains, exposed to the most scorching Rays of the Sun.

Nor was *Silphium* more grateful to the Palate than *Assa Fætida*; since the Scent which it dispersed was so foetid and strong, that by some it was called *Κάυσμον Φυλάριον*, the *stinking Plant*. The *Indians*, on the other Hand, who eat *Assa Fætida* familiarly in their Food, think that it has a sweet Swell, and a most exquisite Taste.

Moreover, we are not to decide upon this Point according to our Taste; for it is evident that many Things were agreeable to former Ages, both in Taste and Smell, which are now thought unpleasant and foetid. On the contrary, we know that the Smell of the Citron was detestable to most of the Ancients. This strange Diversity of Tastes is likewise observable at present. Many, for Instance, have an extreme Aversion to Garlick, insomuch that
 the

the Breath of Persons who have eat it is insupportable to them ; and its Taste consequently in the highest Degree nauseous. Others, notwithstanding, think it has an excellent Savour, and are always cramming it into their Victuals as a Seasoning : So certain it is that there is no disputing about Tastes. The present Age hath likewise seen the same Inconstancy with Regard to Smells. The Compositions scented with Musk, which were so agreeable fifty Years ago, are now so much neglected, that Perhaps Posterity will be at a Loss concerning the Nature of that Perfume ; since they will probably find it difficult to reconcile its offensive Smell with the Sweetness formerly ascribed to it.

We are not to judge otherwise of the excellent *Cyrenaïck Silphium* ; to which some, without Doubt, have comparatively attributed a pleasant Taste and Smell. *Dioscorides* says the *Cyrenaïck* Juice is less foetid than the *Persian* ; but he does not absolutely deny that it is foetid. He tells us that it only differs from the *Persian* Juice in the Gentleness of its Smell, not infecting the Breath so much, nor continuing so long in the Mouth.

Forasmuch therefore as it is now almost universally agreed, that *Persia* is the native Soil of *Lasfer*, and of *Assa Fœtida* ; that the Use of this at present among the *Indians* is the same with the Use of *Lasfer* among the Ancients ; that their Esteem for it is the same ; that *Assa* is at this Time prepared in *Persia* entirely in the same Manner, as the Juice of *Silphium* was formerly ; and lastly, that the Juice of the *Cyrenaïck Silphium* only differs from the *Persian* in Mildness of Smell : We may certainly conclude that the *Silphium*, *Lasfer*, and *Succus Cyrenaïcus* of the Ancients, and the *Assa Fœtida* of our Shops, are not Juices of distinct Kinds, but the same, differing very little from each other.

The

The Plant, which by the *Greeks* was called *Silphium*, and by the *Latins* *Laserpitium*, according to *Theophrastus* and *Dioscorides*, had a very thick Root; a Stalk, named *Maspelum*, like the *Ferula*; a Leaf like Smallage, with a broad and foliaceous Seed: The Juice by some of the *Greeks*, by Way of Eminence, was termed ὄπος, *the Juice*, and ὄπος Σιλφίς, *the Juice of Silphium*, and the *Latins* gave it the Name of *Laser*.

All the Parts of this Plant had a Share in medicinal and culinary Uses. The Juice was not only distinguished on Account of the Countries from which it was brought, but also with Respect to the Part of the Plant from which it was drawn: Thus, that which was got from the Stalk was called καυλίας, and that from the Root ριζίας, which was reckoned inferior. There are, says *Theophrastus*, certain Measures as it were of cutting the Root, by which as much is reserved at first as they think sufficient, and afterwards they cut the rest. This Method of cutting the Root, according to certain Measures or Quantities, is to this Day observed in *Persia*.

The Authors who for many Ages after the Ancients wrote upon this Plant, have so far failed to throw any Light upon its History, that they have rendered it more obscure. We had no certain Knowledge of it, till *Kæmpfer*, returning from his Travels into the Eastern Countries, obliged the World with a very exact Account both of the Plant and the Method of obtaining its Juice.

In *Persia* the Plant is commonly called *Hingiseh*, and the Juice *Hiing*. *Kæmpfer* says it is an umbelliferous Plant a-kin to Lovage. It has a large Root of a black Colour on the Outside and white within, continuing many Years in the Earth, and always encreasing in its Bulk; from which arises a Stalk about as thick as one's Finger, and full of white Pith,

Pith, putting forth large winged Leaves, in Shape like Piony, but in Substance and other Respects liker Lovage. The Flowers consist of five pale Leaves, and the Seed is foliaceous, resembling that of the Parsnep, or Brank-Ursine. This Plant grows in *Persia*, and from thence is brought all the *Assa Fœtida* which comes into *Europe*. It is collected upon the Mountains about *Heraat* in the Province of *Chorasan*, and about *Disguun* in the Province of *Laar*. The Plant receives so great an Alteration from the Nature of the Soil wherein it is nourished, that at a small Distance from the Places above-mentioned its Juice is not worth the gathering, being either exceeding small in Quantity, or quite void of its foetid Smell. The Plant is even reported to be so sweet not far from *Disguun*, that the Goats greedily browse upon its Leaves, and become surprizingly fat.

Some distinguish two *Species* of the Plant, naming that which affords but little Juice *Hus-jeb*; but *Kæmpfer* asserts that their Difference is entirely owing to the Soil in which they grow.

The *Assa Fœtida* is now obtained only from the Root: Wherefore the Distinction which the Ancients made of it, with Respect to the Part of the Plant from which it was drawn, is no longer in Use. The Root till it is four Years old yields very little Juice, and is never cut; but the older and larger it is, the greater Quantity is got from it. When the Juice first flows from its Vessels it is extremely white, liquid, and fat, but not glutinous, being exactly like Cream; but by the Action of the Air and Sun, it becomes brownish, and viscous. The foetid Smell is the Mark of its Virtue; for the stronger that is, the better is the *Assa Fœtida*. On this Account, what we have in *Europe* is not to be compared to the Juice when first taken from the

Root ; since it loses so much with Age, that, according to *Kæmpfer*, one Drachm of the fresh Juice has a stronger Smell, than an hundred Pounds when old and dry, as it is here sold by the Druggists.

The Business of collecting *Assa Fætida* is every Year performed with great Order. About the Middle of *April*, at which Time the Leaves of the Plant grow pale, and begin to wither, several Families, or the Inhabitants of some neighbouring Hamlets flock together to the Mountains ; where they form themselves into a Society, agreeing to Share in common the Profits of their Labour. They divide into small Companies, to each of which a certain Tract of the Mountain is allotted, so that the Management of about two thousand Plants is usually undertaken by a Company consisting of four or five Men. They immediately fall to their Work with Alacrity and Emulation. In the first Place, they dig up the compact Earth, which encompasses the Root, with a Spade, and lay it bear to the Depth of a Span. Then with their Hands they twist off the Foot-Stalks of the Leaves, and the Fibres from the Top of the Root, wherewith it is generally covered. Afterwards they spread the Earth again lightly round the Root to the Top, and lay over it small Bundles, made of the Leaves which have been pulled off, or of whatever Herbs they can meet with. Upon these they put a Stone to hinder them from being carried away by the Wind, which is here oftentimes very boisterous. This Precaution is necessary to defend the naked Root from the Sun-Beams ; because being once struck by them, it rots in the Space of a Day. In thus preparing the Roots they commonly spend about three Days, and then return Home.

Thirty or forty Days after they repair again to the Mountains, every one to his respective Place, provided

provided with a sharp Knife to cut the Roots, a broad Iron-Spattle to scrape off the Juice, and a Cup fixed to his Thigh to receive it. They have all likewise two Baskets hung over their Shoulders, to carry the Juice when they have gathered it. We must observe, by the Way, that each Company divides the Roots, which grow in the Tract of Ground allotted to it, into two Classes, upon which they are employed every other Day alternately; for when the Juice has been drawn off, the Root requires the Space of a Day to recover a fresh Stock, and as long a Time that the Quantity which has issued from it may be duly inspissated.

Being now arrived at the Place where they propose to begin, they each without Delay apply themselves to a Root. They remove the Cover, and a Portion of the Earth which would otherwise be an Impediment to them. Then they cut off the Top of the Root transversely, so that the Trunk represents a Disk with a plane Surface, whereupon the exuding Liquor may settle, without Danger of flowing over. Afterwards they defend the wounded Root from the Sun in the same Manner as before, only with this Caution, that the Bundles may not touch upon the Disk they bend them into the Form of an Arch. And thus in Order they treat all the Roots of the first Class.

The next Day they proceed to the Roots of the second Class, and treat them as the former. The third Day, returning to the first Class, and withdrawing the Covers, they scrape off the Juice with their Spattles, and put it into the Cups which hang to their Thighs. Then removing so much of the Earth as may serve to allow them free Access to the Root, they pare a very thin circular Slice from the Surface of the Disk, scarce as thick as an Oat-Straw; for it is sufficient if the dry external Surface, whereby
the

the Pores were stopt up, be so far taken away, that a new Quantity of Juice may exude from its Canals. They empty their Cups now and then occasionally into larger Vessels, or upon Leaves spread upon the Ground, and expose the Juice to the Sun till it becomes harder. By this Means it acquires a Colour differing from its natural White according to its Softness, and the Difference of its Situation, by which it admits the Rays unequally. The Work is finished by covering the Root as last mentioned. The fourth Day they return to the second Class. They gather the Juice, cut the Roots again, and cover them. And thus the second Operation is completed by cutting the Roots three Times, and collecting their Juice twice. Then they leave them untouched for eight or ten Days, and carry the Juice Home in their Baskets hung over their Shoulders upon a Pole. The Quantity usually taken back by a Company of four or five Men is about fifty Pounds in Weight. The Juice of this first Gathering is not accounted the best *Assa Fœtida*, but inferior to that which is got afterwards.

The Roots having been left for eight or ten Days, to recover a fresh Stock of Juice, they make another Gathering. They begin with the Roots of the first Class by removing the Bundles and the Earth. They collect the Juice, pare away the Tops of the Roots, and cover them. The next Day they go to the second Class: And so the same Operation is performed on the same Roots every other Day for three Times, and at length they are covered up again, and left.

At the End of three Days the Labourers take their last Journey to the Mountains, and the Roots of both Classes are cut three Times alternately as before. After this they are left uncovered, whence they soon perish by the Admission of the Air and

Sun. Thus the Business of collecting *Affa Foetida* is generally concluded: Though if there be any Roots of a larger Size than ordinary (*viz.*) such as are twenty Years old or upwards, they are not left till they are nearly exhausted of their Juice.

In a chymical *Analysis* two Pounds of choice *Affa Foetida* yielded five Ounces, and three Drachms, of milky Phlegm, partaking of the Smell of Garlick, and acid; one Ounce and seven Drachms of reddish Phlegm, both acid and urinous; two Ounces, two Drachms, and thirty six Grains of foetid Oil, which was yellowish, fluid and transparent; and eleven Ounces, five Drachms, and twenty four Grains of red Oil, of a thicker Consistence. The black Mass remaining in the Retort weighed nine Ounces and two Drachms. This being calcined in a Crucible for thirty Hours, left two Ounces, four Drachms, and thirty six Grains of gray Ashes; from which were extracted twelve Grains of fixt neutral Salt. The Loss of Parts in Distillation was two Ounces, four Drachms, and twelve Grains; in Calcination six Ounces, five Drachms, and thirty six Grains.

Hence it appears that *Affa Foetida* is composed of a copious foetid Sulphur, both thick and thin, a large Portion of acid Salt, a small Quantity of volatile urinous Salt, and a little Earth. From these Principles arises a Salino-sulphureous Compound, whereof a considerable Portion dissolves in Spirit of Wine, and the greatest Part in hot Water.

The ancient Physicians have ascribed many excellent Virtues to *Lasfer*. They say that being taken internally it cures the Palsy and other Disorders of the Nerves, provokes the *Menses* and Urine, greatly helps the Concoction of Food, exhilarates the Mind in Sorrow, destroys the Poisons of Darts and Serpents, fattens the Body, cures the Plague and malignant

lignant Distempers, and that it is useful in the Dropfy, Jaundice, Pleurify, Spasmodick Contractions, Asthma, difficult Respiration, Coughs, and Hoarseness. Externally applied they say that it resolves tumid Spleens, draws down the menstrual Purgations, and that being mixed with Wax it extracts Corns of the Feet, if previously scarified round about with a Knife: That it is likewise very serviceable to invenom'd Wounds, the Bites of poisonous Animals, crude Ulcers, Carbuncles growing about the Fundament, and to rheumatick and gouty Pains.

Garcias and others tell us that no simple Medicine is in more common Use among the *Indians* than *Assa Foetida*, both in Physick and as a Seasoning in Food. They mix it with most of their Victuals, as their Soops, Pot-Herbs, &c. and first rub it over the Pot in which they are boiled. They take it as a Medicine to cure Loathing and raise the Appetite, to strengthen the Stomach, to discuss Flatulencies, and to excite Venery.

However *Galen*, l. 8. *de Simp.* asserts that all the Parts of *Silphium* are of a flatulent Nature, and therefore difficult of Digestion: But that outwardly used they are more efficacious, particularly its Juice, to which he attributes a powerful Virtue of drawing, as also of softening and dissolving Excrescencies.

Pliny likewise accuses *Lasër*, when mixed with Food, of being hard of Digestion. He says it produces Flatulencies, and Belchings, and is hurtful to the Urine. Moreover, he is afraid of using it in the Tooth-Ach from a very remarkable Instance which he had known of its bad Effects, in a certain Man whom it occasioned, in that Disorder, to throw himself headlong from an high Place to put an End to his Anguish. He also adds, that if it be daubed upon the Nostrils of Bulls, it makes them mad.

Wherefore it is not to be applied externally without Caution.

In *Europe* *Affa Foetida* is not only rejected entirely from among Seasonings, but is also seldomer used in Medicines on Account of its offensive Smell. It is however prescribed to Advantage in flatulent Colicks, and hysterick Affections, as well externally as internally. It is likewise proper for provoking the *Menses*, the *Lochia*, and *Secundines*. It powerfully promotes Perspiration and Sweat ; drives malignant Humours from the Centre to the Circumference, and is therefore of great Service in malignant Fevers, the small Pox; and the Measles: And it is a good Medicine in nervous Affections and the Palsy. It may be prescribed from gr. xij. to ʒj. or to ʒij. It is commended in an Asthma to be taken in a soft Egg, and is extolled as a most efficacious Remedy against the Force of Opium and other Narcoticks. By its Smell it frees Women from the hysterick Suffocation. Outwardly applied it powerfully softens and resolves ; wherefore it is commended for resolving Tumours of the Spleen.

An anti-hysterick Tincture is prepared from *Affa Foetida* with tartarized Spirit of Wine, which is given to ʒij. for a Dose.

Take of *Affa Foetida* ʒss. *Sal Ammoniack* gr. xvij. Extract of red Poppies q. f. Mix and make a Bolus to provoke a *Diaphoresis*.

Take *Affa Foetida* and *Myrrh* ā ʒj. Extract of Saffron gr. ij. Conserve of Marygold-Flowers q. f. Make a Bolus to provoke the *Menses*.

Take of *Affa Foetida* ʒj. Castor gr. vj. prepared Amber gr. xx. Extract of Baum q. f. to make a Bolus to be given in the hysterick Passion.

Take *Affa-Foetida*, Juniper-Berries and Castor, ā ʒss. Honey ʒivss. Make them into an Electuary.

tuary. The Dose is ʒj. against too much Sleep occasioned by taking Opium or other Narcotics.

ARTIC. III. Of BDELLIUM.

We are not sufficiently acquainted with the History of the Βδέλλα or Βδέλλιον of the ancient *Greeks* to determine with Certainty what it was, or whether that Drug has come down to us.

Dioscorides distinguishes three Kinds of Bdelium. The first is the Tear of a Plant growing in the Country of the *Sarracens*. It is a transparent Gum, like Glue, within fat, easily melting, free from the Mixture of Wood and Filth, of a bitter Taste, and Smelling, when burnt, like the *Unguis odoratus* *. The second is fordid, black, in large Glebes, with the Smell of *Aspalathum*, and brought from the *Indies*. The third, coming from a Town called *Petra*, is dry, resinous, and livid; but with Respect to Virtue he reckons this the second.

Galen, in his Book on Simple Medicines, makes mention of two Sorts of Bdelium: One from *Scythia*, which is blacker and more resinous; and another from *Arabia*, of a clearer Colour, and moist, and easily growing soft.

* The words of *Dioscorides* are these. Βδέλλιον ἐστὶ ἐνώδες ἐν τῇ θυμιάσει, καὶ εἰκὸς ὄνυχι, i. e. *Bdelium est odoratum in Suffitu, et simile Ungui*. Some Authors suppose the Word *Onyx* or *Unguis* to signify the Nail of the Hand, of which they imagine Bdelium to have a Resemblance, in being sometimes, like that, marked with Spots. But it is more probable that *Dioscorides* here means the *Unguis odoratus*, which was Part of a Shell found in the *Red Sea*, and other Places, of a Substance like Horn, nearly resembling our *Blatta Byzantina*, if not the same. See *Dale's Pharmacologia*, p. 522. and p. 549, 550, &c.

Pliny speaks of *Bdellium* thus. “ Near this Place
 “ (says he) is *Bactriana*, where the *Bdellium* is very
 “ famous. It is a black Tree, of the Bigness of
 “ an Olive, with a Leaf like the Oak, and a Fruit
 “ and Nature like the wild Fig-Tree. Its Gum
 “ some call *Brochon*, others *Malackbran*, others *Mal-*
 “ *dacon*, and when it is black, and in large Masses,
 “ *Hadrobolon*. It ought to be transparent, like
 “ Wax, of a quick Smell, and, when rubbed be-
 “ twixt the Fingers, fat, and of a bitter Taste
 “ without Acrimony. It grows in *Arabia*, in *In-*
 “ *dia*, and *Media*, and at *Babylon*. Some call that
 “ which is brought from *Media*, *Peraticum*. This
 “ is more brittle, dry, and bitter; but the *Indian*
 “ is gummous, and moister.”

By these Accounts we may discover how uncertain the History of *Bdellium* is in the Writings of the Ancients. Nor have the *Arabians* thrown any greater Light upon it; since *Serapio* makes two Kinds of *Bdellium*: One from *Judea*, which *Avicenna* calls *Mochel Judaicum*, and which seems to be the *Bdellium* of *Dioscorides*; another which he tells us is the Fruit of a certain Plant resembling a Palm-Tree. This *Avicenna* calls *Mochel Mecchense*.

Neither are the modern Authors agreed upon this Head. For some, according to *Matthiolum*, have supposed Myrrh to be the true *Bdellium*. Some, says *Clusius*, believe *Anime* to be the true *Bdellium*. Others, as *Olivus* testifies, understand by the Word *Bdellium*, the precious Stone called a Carbuncle; others, Crystal. *C. Baubine*, in *Matthiolum*, mentions six different Sorts of *Bdellium*.

The first is in large Glebes, of a reddish Colour, and, when it is broken, flies into a great Number of small Grumes, moderately shining.

The second is in small Glebes, of a brownish Colour, within reddish, and dividing, when broken,
 into

into two Parts, as if it were cut through the Middle. It is transparent, dense, glutinous, and fat, and when laid in a warm Place, a Moisture exudes from it in white Tears.

The third is black, of a dark reddish Colour within, glutinous, and tasting like a Mixture of Frankincense and the Gum of Cherry-Trees.

The fourth has likewise a black Colour, but within a brownish Yellow, or sometimes Purple. It is very transparent, soft, and glutinous, like the Gum of the Cherry-Tree, and has the same Taste.

The fifth has a Colour and Taste like the preceding, but within it is variegated with pale or white Spots.

The sixth is pale or white, in oblong Grumes of a moderate Bigness, composed of many long, concreted Drops. This has a bitter unpleasant Taste, and more acrid than all the other Sorts.

Samuel Dale, in his *Pharmacologia*, describes two Sorts of Bdelium. “ The first, says he, is a Substance between a Gum and a Resin, fat, like Wax, tenacious, glutinous, of a ferruginous Colour tending to Black, something like Myrrh, which it resembles in Taste and Smell. It is brought from *Arabia, Media, and India*. The second is a resinous Substance, hardish, blackish, and friable, in concreted Drops, with the Taste and Smell of the former. It is brought from *Guinea*.”

Peter Pomet, in his History of Drugs, observes, that many Sorts of Gum are often found in the Shops under the Name of Bdelium. Sometimes a Resin brought from *America*, called *Anime*, which flows from a Tree named *Courbaril*; sometimes the Resin of another Tree named *Canninga* or *Cassia caryophyllata*; sometimes the Resin of the *Costus corticosus*, which he calls Gum *Alouch*; or others not so well known.

But what we meet with in our Shops for true Bdelium, is not different from the first Sort described by *Dale*. It is a Gum-Resin in Glebes of different Figures and Magnitudes, externally sometimes resembling common Myrrh, of a reddish Colour like the Rust of Iron, sometimes of a deep Brown with a Cast of Red; internally somewhat transparent, and like Glue. It is brittle, but grows soft in the Mouth, and sticks to the Teeth. Its Taste is bitterish, much weaker than the Taste of Myrrh, and its Smell not unpleasent, especially when it is burnt. It takes Flame, and continues burning a long Time with a crackling Noise; during which, small liquid Grains, as it were, are observed to ouze out of it in several Places. It is often brought to us in Casks mixed with Myrrh, and sometimes with Gum *Senega*. If this be not the best Sort of Bdelium mentioned by *Dioscorides*, it comes at least very near it.

We have no certain Account of the Tree which produces Bdelium. According to *Pliny's* Description, it is black, of the Bigness of an Olive-Tree, with Leaves like the Oak, and a Fruit like the wild Fig. Others will have it to resemble very much the Tree which produces Myrrh; and *Thevet* affirms that he has seen two thousand Trees which yielded Myrrh and Bdelium growing together in the same Wood. *Lobelius* and *Pena* relate that they have picked from among other Commodities many Twigs of this Tree, of a solid Substance, covered with an hard Bark, of a blackish Colour, and beset with a great Number of strong prickly Thorns. Whence *Dale* questions if it be not the Tree which *Plukenet* calls *Arbor lactescens acculeata, foliis quernis, Americana, (Bdellifera fortè,) sive Arbor Bdelium ferens in America, Phytogr. Tab. 145.*

One Part of Bdelium dissolves in Water; and the other Part in Spirit of Wine, or Oils. It takes Fire, and burns with a vivid and durable Flame; but crackles a little, by Reason of the saline and aqueous Parts mixed with the Resin. It dissolves entirely in Spirit of Wine tartarized, in alkaline Liquors, and in Wine or Vinegar.

Bdelium is accounted emollient, and more efficaciously so when fresh. It is likewise greatly discutient, aperient, and deterfive, but at different Ages. If your Intention be to discuss, chuse it of a moderate Age; if only to deterge, the older it is, the better. It is seldom used inwardly; though it is commended in some Affections of the Breast, in Coughs, in difficult Respiration, and Imposthumes of the Lungs; as also to provoke Urine and expel Gravel. Many Authors, particularly *Sole-nander*, *Forestus*, and *Riverius*, highly extol it in the hemorrhoidal Flux, being made into Pills and given to ʒj. in a Dose: For it powerfully restrains the Flux, especially if assisted by a Fumigation of the same received by the *Anus*. Outwardly applied, it softens and resolves Tumours, ripens Abscesses, and heals fresh Wounds.

Take of the best Bdelium ʒxij. Seeds of Bishop's Weed ʒiij. Mother of Pearl calcined, and prepared Amber, ā ʒiifs. Yellow Myrobalans (or any of the other Sorts ʒj. Honey of Roses q. f. Mix and make Pills. The Dose is ʒj. in the hemorrhoidal Flux.

ARTIC. IV. Of GALBANUM.

Galbanum, Off. Χαλβάνη, *Diosc.* *Chene*, Arab. Galbanum is a fat Substance, ductile like Wax, semi-

femi-pellucid, shining, of a middle Nature between a Gum and a Resin ; for in the Fire it flames like Resin, and in aqueous Liquors dissolves like Gum, and not in Oils. When fresh it is almost transparent, of a whitish Colour, afterwards inclining to Yellow, or Red ; of an acrid, bitterish Taste, and strong, unpleasant Smell. In the Shops we meet with two Sorts : One in small Grumes or Tears, commonly called *Galbanon en larmes* ; another in Masses, called *Gabanon en Pains*. Galbanum ought to be chosen fresh, pure, fat, moderately viscous, inflammable, and composed of clear whitish Grumes. When it is brown, and mixed with Earth, Gravel, Wood, or other Dross, it is not good. It comes to us from *Syria*.

This Tear was known to the ancient *Greeks*. *Disocorides* says it drops from a Sort of *Ferula*, which was called *Metopion* : And accordingly it is now found to flow from a ferulaceous Plant, named *Oreoselinum Africanum*, *Galbaniferum*, *frutescens*, *Anisi folio*, *Inst. R. H.* 319. *Ferula Africana*, *Galbanifera*, *Ligustici foliis et facie*, *Paradis. Batav.* *Anisum Africanum frutescens*, *folio et caule rore cæruleo tinctis*, *Pluk. t.* 12. *Oreoselinum Anisoides arborescens*, *Ligustici foliis et facie*, *flore luteo*, *Capitis-bonæ-Spei*, *Breyn. 2. Prodr.* It grows in *Persia*, and many Parts of *Africa*, particularly in *Barbary*. The milky Juice contained in this Plant has all the Marks of the true Galbanum. It sometimes flows spontaneously from the Joints ; but is generally obtained by making an Incision into the Stalk about three Fingers Breadth above the Root, from which it issues in Drops, and in a few Hours becomes dry and hard enough to gather.

The *Ferula Galbanifera* of *Lobelius*, *Icon.* 779. which *Caspar Baubine* calls *Ferulago latiore folio*, is quite a different Plant. For this, as *Tournefort* hath observed,

observed, yields no Galbanum, but another Gum of a deep red Colour, without any strong Smell.

In a chymical *Analysis*, two Pounds of choice Galbanum afforded three Ounces and two Drachms of reddish Phlegm, which had some Smell, and was a little acid; three Ounces, five Drachms, and thirty four Grains of red, acid Liquor; seven Drachms and thirty six Grains of brown empyreumatick Liquor, partly acid, and partly alkaline; one Ounce, seven Drachms, and thirty Grains of fluid brown Oil; five Ounces, and five Drachms of thicker Oil, of a green Colour tending to brown; and seven Ounces of Oil of the Consistencce of Honey. The black Mass remaining in the Retort weighed seven Ounces, one Drachm, and thirty six Grains; which being calcined in a Crucible for twenty Hours left five Drachms and forty eight Grains of Ashes. From these were drawn, by Lixiviation, thirteen Grains of fixt Salt merely alkaline. The Loss of Parts in Distillation was two Ounces and four Drachms; in Calcination, six Ounces, three Drachms, and sixty Grains. The Oil which was obtained, being purified by repeated Distillations, appeared of an elegant Sky-blue Colour.

Galbanum dissolves in Wine and Vinegar, as also in warm Water; but not easily in Oils, or Spirit of Wine. It consists of a tartarous Salt, and a thick foetid Oil.

Galbanum taken inwardly has the same Virtues with Ammoniack, but is something weaker. It dissolves tenacious Phlegm; and for this Reason is of Service in Asthmas, and old Coughs. It diffuses Wind, and gives Ease in colick Pains; opens Obstructions of the Womb, promotes the menstrual Purgations, expels the *Fætus* and Secundine, and cleanses the Womb after Delivery. It relieves
 † hysterick

hysterick Affections proceeding from Obstruction of the Womb. It is also commended against coagulating Poisons. A Fumigation of it is serviceable in Suffocation of the Womb, and Fits of the Epilepsy. Externally it incides, draws, softens, and ripens; and is therefore an Ingredient in many Plaisters for suppurating Buboës, or other Swellings, and for resolving scirrhus Tumours. Applied to the Navel it appeases hysterick Disorders; and allays Spasms of the Intestines, Convulsions of the Limbs, and helps the Palsy, being spread upon Leather, and applied to the Part affected.

Take Galbanum and Gum Ammoniack, \bar{a} ζ ij.
Riverius's Vitriol of Iron ζ ss. *Diagrydium* ζ x.
 Syrup of Buckthorn q. f. Mix and make Pills.
 The Dose is from gr. v. to ϑ j. in Suppression of the *Menses*, and to promote the Purgations after Delivery, when stopped, provided there be no Inflammation,

Take Galbanum, *Assa Fœtida*, and Myrrh, \bar{a} ζ j.
 Camphore and Salt of Amber, \bar{a} ϑ ss. Borax ϑ ij. Syrup of Mugwort q. f. Mix and make Pills. The Dose is ϑ j. in the hysterick Passion, and Suppression of the *Lochia*.

Take Galbanum, *Assa Fœtida*, and Myrrh, \bar{a} ζ ss.
 Castor ϑ j. Mix and make Troches, to be used by Way of Fumigation in hysterick Fits.

Take of Galbanum q. v. dissolve in Oil of Amber and Oil of Spike, \bar{a} q. f. to make a Lini-ment, with which anoint Parts affected with Convulsions, or a Palsy.

From Galbanum is prepared the *Galbanetum Theophrasti* of *Paracelsus*, which is accounted an excellent Application in Contractions of the Nerves, spasmodick Affections, and convulsive Colicks, and to rub upon paralytick Limbs. It ought to be made thus.

Take

Take of Galbanum ℥j. Gum Hedera ℥iij. Oil of Turpentine ℔ss. Oil of Bays and Oil of Lavender, ā ℥j. Let them stand together in Digestion for two or three Days, and then distil them from a Retort. The Liquor which arises in the Distillation is to be put by for Use.

ARTIC. V. Of MYRRH.

The Ancients have mentioned many Kinds of Myrrh, which they have not exactly described, or distinguished from each other. We likewise find at present in Chests of Myrrh many Glebes differing in Taste, Smell, and Consistence. Sometimes they have a Smell of Myrrh, not unpleasant, sometimes strong and disagreeable; sometimes they are intensely bitter and nauseous, and sometimes they have a gentle Bitterness; besides that they are often mixed with Glebes of Bdellium, and Gum Arabick. Whence it is evident that there must be some Difference between the Tears of Myrrh, according as they flow from different Trees, or from different Parts of the same Trees, or are gathered at different Seasons of the Year, according to the different Culture of the Trees, or as they issue either spontaneously, or from Incisions.

Fuchsius suspects that the Myrrh of the Shops is not the true Myrrh of the Ancients, but that worse Sort, which *Dioscorides* calls *Caucalis* and *Ergasine*. But I am of Opinion that the several Sorts of Myrrh enumerated by the ancient Writers are at this Time brought to us mixed together.

Brassavolus and others have regarded our Myrrh as the Bdellium of the Ancients: But they are easily distinguished; because Myrrh is not so viscous as Bdellium,

Bdellium, has a more bitter Taste, and a sharper penetrating Smell. *Langius* and others, rejecting our Myrrh, substitute Benzoine for the Myrrh of the Ancients ; but in Benzoine, as *Langius* himself confesses, the Bitterness, which *Dioscorides* requires in Myrrh, is wanting. I therefore think, with *J. Baubine* and others, that the true Myrrh is still brought to us, though often mixed with Gum. Nor is it any Argument to the contrary that the Ancients reckoned Myrrh among the more agreeable Aromaticks, or that they used it to give a Flavour to their most precious Wines : For, as we have before said, there is no disputing about Tastes and Smells ; since the Inconstancy of Mankind is in nothing more observable than in Respect of these.

Two principal Kinds of Myrrh were distinguished by the Ancients ; the *liquid*, called *Stacte*, and the *solid*, which was brought to them in Glebes. Of the liquid Myrrh they moreover make two Sorts : The one was native, which either flowed of its own Accord from Trees before they were cut, to which, says *Pliny*, none is preferable ; or it was expressed from the fresh Glebes before they were dry, whilst their interior Substance was liquid and oily. Such Glebes of fresh Myrrh are sometimes to be met with in our Shops, full of an oily Juice, to which also the Druggists give the Name of *Stacte*. The other Sort was factitious. It was made by pounding fresh Myrrh with a small Quantity of Water, and then straining. This Preparation is now in Disuse, and generally unknown. Some affirm that the liquid Storax of the Shops is the Tear of the Tree which yields Myrrh, and that it was the *Stacte* of the Ancients. But this Opinion is very false : For liquid Storax, as we have made appear *, is quite different from Myrrh, being a Juice obtained by Coction from the Bark of a Tree.

* *Mater. medic.* Tom. II. p. 492.

Of solid Myrrh in Glebes the Ancients reckon up many Sorts. Among these the *Troglodytica*, so called from the Country of the *Troglodytæ* whence it was brought, is by *Galen* accounted the best. The next was the *Minnæa*, which was named from a Village belonging to the *Minnæi*. This Sort however *Dioscorides* seems to disapprove; unless, as some Authors will have it, the *Myrrha Aminea* of *Dioscorides* be different from the *Myrrha Minnæa* of *Galen*; which is a Point not easy to decide.

We must not omit what *Galen* relates concerning the *Opocalpasum* or *Opocarpasum*, which in his Time was often found mixed with Myrrh, and resembled the best Sort so nearly, that it could not be easily distinguished. It was a poisonous Juice, occasioning Sleep and sudden Suffocation. *Galen* tells us that he has seen many Persons die, from unknowingly taking Myrrh in which there was a Mixture of *Opocarpasum*. Of what Herb, Plant, or Tree, this *Opocarpasum* was the Juice, none of the Ancients have informed us, nor have any of the Moderns yet discovered.

Dioscorides speaks of a Sort of Myrrh termed *Myrrha Bæotica*, which was the Root of a certain Tree growing in *Bæotia* cut into Pieces. This is now an entire Stranger to us.

But to return to the Myrrh of the Shops. *Myrrha*, Off. *Σμύρινα*, *Diosc.* *Μύρρα*, *Hippoc.* *Ler*, *Mur*, seu *Mor*, *Arab*. It is a gummo-resinous Juice, concreted into brittle Glebes of different Magnitude, sometimes as large as a Filberd, sometimes larger; of a yellow, reddish, or ferruginous Colour, somewhat pellucid and shining, and discovering, when broken, white semi-circular Veins, or Spots, like those on the Nails of the Hand. It has a bitter, subacid Taste, and aromack, though nauseous; a strong Smell, striking the Nose when it is bruised,
and

and in burning disperses an Odour not unpleasant. The best is friable, light, of an uniform Colour, bitter, acrid, and of a quick Smell. When it is black, heavy, and mixed with Dross, it is bad. It is brought from that Part of *Æthiopia* which was formerly called the Country of the *Troglodytæ*.

Of the Tree which produces this Drug we have no certain Knowledge.

In a chymical *Analysis*, two Pounds of choice Myrrh yielded three Ounces, and four Drachms, of reddish Phlegm, partaking of the Smell and Taste of Myrrh; four Ounces, seven Drachms, and thirty four Grains of austere acid Liquor; one Ounce and five Drachms of Liquor, both acid and urinous; one Ounce, seven Drachms, and thirty two Grains of red Oil, which was transparent and scented; three Ounces, six Drachms, and thirty six Grains of brown Oil, somewhat empyreumatick, and of a thicker Consistence, like Syrup. The black Mass remaining in the Retort weighed nine Ounces, six Drachms, and fifty four Grains; which being calcined for twenty six Hours afforded two Ounces, three Drachms, and thirty six Grains of red Ashes. From these were drawn by Lixiviation eighteen Grains of fixt neutral Salt. The Loss of Parts in Distillation was six Ounces, two Drachms, and seventy Grains; and in Calcination seven Ounces, three Drachms, and eighteen Grains.

Myrrh takes Flame, like a Resin; though it does not perfectly dissolve, like Resins, in oily Substances, but partly runs into Grumes: Nor does it freely dissolve, like a Gum, in Water; but the greater Part remains undissolved, appearing like Mud. Rectified Spirit of Wine, by a long Digestion, extracts the resinous Part, the Gum only remaining, quite void of Smell and Bitterness, which is soluble in Water, or at least softens, and is converted

verted into a tough Mucilage. In Spirit of Wine tartarized, or joined with the urinous Spirit of Sal Ammoniack, it dissolves entirely.

Therefore Myrrh is compounded of Resin, Tartar, and Sal Ammoniack, so intimately combined, that it is scarce possible to separate them from each other.

Galen ascribes to Myrrh a drying and moderately deterfive Quality : Others allow it an extraordinary resolvent Virtue. Indeed it powerfully dissolves thick, viscid Blood, coagulated Bile, and glutinous, concreted Humours. Hence it is commended, internally, in Obstructions of the Womb, and Bowels. It promotes the *Menses*, the Purgations of Child-Bed Women, and the Flux of the Hemorrhoids ; expels a dead *Fœtus*, and the Secundine. It discusses Infarctions of the Lungs ; and is advantageously prescribed in an Asthma, Cough, or to resolve Infarctions of the Lungs ; as also in the Jaundice, in scorbutick Affections, and in Cachexies. It kills Worms, as well by its remarkable Bitterness, as by dissolving and cleansing away the viscid Humour which covers the internal Coats of the Stomach and Intestines, wherein the Eggs of those Animals lye concealed. It strengthens the Stomach, helps the Concoction of Food, and discusses Wind. In malignant, putrid, and pestilential Fevers, in the Small Pox, and Measles, it does good by removing the Putrefaction, by exciting a gentle *Diaphoresis*, and by accelerating the Eruption upon the Skin. Against Ulcers, whether internal, or external, it is commended as a singular Balsam, correcting their Corruption in all Parts of the Body. For this Reason it is used to Advantage in an *Empyema*, in Ulcers of the Lungs, Liver, Kidneys, Womb, or other Bowels, and likewise in Dysenteries. It is given in Substance, under the Form of a Bolus, or

Y

Pills,

Pills, from ℥ss. to ʒss. It is seldom given dissolved on Account of its Bitterness.

Externally, it attenuates, discusses, and is an excellent traumattick. It cleanses old Wounds, which are changed into Ulcers, and preserves them from verminous Putrefaction. It also resists Gangrenes and the Corruption of Wounds, proceeding from a Deficiency of Spirits in the Part injured; and it cures the *Caries* of Bones, whether mixed with Decoctions, Tinctures, Plaisters, or Unguents.

But Myrrh, however, is not always harmless; since its Smell, as *J. Baubine* after *Galen* observes, in some Persons occasions the Head-Ach. Besides, it does not only provoke the menstrual Evacuations of Women, but also excites or increases all Eruptions of Blood whatsoever: Wherefore People who are subject to Spitting of Blood, to bloody Urine, or other Hemorrhages, ought not to use it, since it will probably recal their Disorder. Neither ought it to be given indiscreetly to pregnant Women, lest it should cause Miscarriage.

The Preparations of Myrrh most in Use, are the Tincture, and Oil.

The Tincture is drawn by rectified Spirit of Wine, either alone, whereby the resinous Part only is taken up; or mixed with the volatile urinous Spirit of Sal Ammoniack: And then the whole Substance of the Myrrh is dissolved. Either Tincture may be given from gutt. v. to ʒss.

The Oil is got by distilling Myrrh from a Retort. The Fire must be very gentle in the Beginning, and then being gradually increased, a thick Oil is obtained, mixt with an acid Spirit. The Oil separated from the Spirit, and distilled again with a large Quantity of Water, becomes limpid, thin, and odorous. Another Liquor, improperly called in the Shops Oil of Myrrh *per Deliquium*, is procured
by

by enclosing some powdered Myrrh in the White of an Egg, boiled hard and split, and hanging them up together by a Thread in a Cellar, or other damp Place. The Liquor which drops from them, being catched in a Glass-Vessel, and evaporated by a gentle Heat to a Diminution of the fourth Part, is put by for Use. It is said to clear the Face from Tan, Freckles, &c. and to obliterate Scars, and other Deformities of the Skin.

Take of choice Myrrh gr. xij. the aperient Saffron of Iron and Gum Ammoniack, ā gr. x. Syrup of Wormwood q. f. Make a Bolus to be taken Morning and Evening in Suppression of the *Menses*.

Take of Myrrh gr. xv. Borax ℥j. Cinnamon gr. xvij. Conserve of Wormwood, or of Marygold-Flowers, q. f. to make a Bolus, which may be given to provoke the *Menses*, or the Purgations of Child-Bed Women, and to expel a dead *Fœtus*.

Take Myrrh and Frankincense, ā gr. xv. Saffron powdered gr. vj. Balm of *Gilead* q. f. Make Pills to be used in the Beginning of a Consumption, to resolve crude Tubercles, and to heal small Ulcers.

Take of choice Myrrh ℥ss. diaphoretick Mineral and *Virginian* Snake-Root, ā ℥j. Syrup of July-Flowers q. f. Mix and make a Bolus to be given in the Small Pox, Measles, and malignant Fevers.

Take the Root of round Birthwort, *Florentine* Orris, and Euphorbium, ā ℥j. Myrrh and Aloes, ā ℥iss. Make them into a Powder to be scattered upon a carious Bone. Or extract a Tincture from them with Spirit of Wine, which may likewise be used to rotton Bones.

ARTIC. VI. Of OPOPANAX.

Opopanax et Opopanacum, Off. Ὀποπανάξ, Græc.
 This is a Gum-Resin in Drops about as big as a Pea, sometimes larger, sometimes smaller, outwardly of a reddish Colour, but inwardly yellow tending to white, of a disagreeable strong Smell, an intense bitter, acrid Taste, somewhat nauseous, and fat, yet so as to be friable. It sometimes comes to us compacted into dirty Glebes, of a blackish red Colour, mixed with Fragments of Stalks and other Drops. It ought to be chosen in clear, fat, and friable Tears, of a Saffron Colour on the Outside, and whitish or inclining to Yellow within, of a bitter Taste, and strong unpleasent Smell. When it is black, and mixed with Impurities, it is not fit for Use. It is brought from the *East*.

We are entirely ignorant of the Plant from which it exudes ; though it was no Stranger to the *Greeks*. According to *Galen* it is drawn from the wounded Root and Stalk of the *Panax Heracleus* ; but we have no certain Accounts in Authors of the Plant to which this Name was given *.

In a chymical *Analysis*, two Pounds of the purest *Opopanax* yielded four Ounces and four Drachms of limpid, odorous, and subacid Phlegm ; four Ounces, five Drachms, and twelve Grains of reddish Liquor, which was acid and empyreumatick ; one Ounce, six Drachms, and sixty Grains of Liquor, both acid, and urinous ; one Ounce, one Drachm, and sixty six Grains of Oil, which was transparent, thin, light, and reddish ; four Ounces, one Drachm,

* It is generally believed to be the *Panax Heracleum majus* of *Gerard*, called by *Caspar Baubine* *Panax Pastinacæ folio*, and by *John Baubine* *Sphondylion vel potius Pastinacæ Germanicæ affinis* *Panax, vel Pseudo-Costus flore luteo*. See *Dale's Pharmacol.* p. 197. and *Miller's Botan. Off.* p. 370.

and twelve Grains of thicker Oil, heavier than Water, and of a brown Colour. The black Mass remaining in the Retort, of a rare spongius Texture, weighed eleven Ounces, and one Drachm; which being calcined during twenty six Hours in a Crucible, left one Ounce, three Drachms, and thirty six Grains of brown Ashes; from which were extracted two Drachms and forty two Grains of fixt alkaline Salt. The Loss in Distillation was four Ounces, three Drachms, and sixty six Grains; and in Calcination nine Ounces, five Drachms, and thirty six Grains.

Opopanax takes Flame like a Resin, and dissolves in Water like a Gum; but it renders the Water milky by Reason of the large Quantity of its Oil. It therefore consists of Oil, Tartar, and an ammoniacal Salt, closely united.

Inwardly taken it incides and attenuates thick and viscid Humours, discusses Wind, and purges without Uneasiness. Wherefore it is given to Advantage in Disorders of the Brain and Nerves, in the Palsy, Epilepsy, humoural Asthma, old Coughs, Obstructions of the Mesentery and Bowels, and in Suppression of the *Menses*. The Dose is from ʒss. to ʒj. Outwardly applied it softens and discusses Tumours, resolves such as are scirrhus, as also Nodes and Swellings of the Nerves and Tendons.

Take of Opopanax ʒss. Saffron gr. vj. Cinnamon ʒj. Syrup of Wormwood q. f. Mix and make a Bolus to be taken in Suppression of the *Menses*.

Take Opopanax, the Root of *Florentine* Orris and Agarick, ā ʒss. Syrup of Hedge-Mustard q. f. to make a Bolus for the Asthma.

ARTIC. VII. Of SAGAPENUM.

Sagapenum et Serapinum, Off. *Σαγάπηνου*, *Græc.* *Sachabenigi sive Sechbenigi*, *Arab.* This is a Juice of a middle Nature between a Gum and a Resin, sometimes in Drops like Frankincense, sometimes run together into large Glebes, externally of a reddish Colour, internally something like Horn, and growing soft and white under the Teeth, or betwixt the Fingers. It has a sharp biting Taste, and a strong unpleasant Smell, approaching to that of the Leek and Pine-Tree together, or resembling as it were a Mixture of *Assa Fœtida* and *Galbanum*. Being put to a Candle it takes Flame, and entirely dissolves, by boiling, in Water, Wine or Vinegar. We sometimes find it in the Shops run together into impure Glebes or Masses, of an obscure dirty Colour, but a Taste and Smell like the purer Sort. The best is pellucid, of a reddish brown Colour on the Outside, and appears within, when broken, to be composed of whitish or yellow Drops, grows soft and sticky betwixt the Fingers in Handling, and disperses a strong disagreeable Smell. *Charas* mentions a Sort of *Sagapenum* of a white Colour both on the Outside and within, which he thinks the best, supposing it to be fresh; but such is very rarely to be met with in the Shops.

It was known to the ancient *Greeks*. *Dioscorides* says it is Juice of a ferulaceous Plant which grows in *Media*. It now comes to us from *Persia*, and other Eastern Countries, but the Plant from which it flows is unknown; though from Pieces of the Stalk, and from the Seeds, which are often found mixed with the Juice, it is generally supposed to be a *Species* of *Ferula*.

In a chymical *Analysis*, two Pounds of the purest Sagapenum yielded six Ounces, three Drachms, and eighteen Grains of reddish, acid Phlegm, of a porraceous Smell, and a resinous Taste something like the Juniper; three Ounces, two Drachms, and thirty six Grains of acid Liquor, of a Saffron Colour, or brownish; one Ounce and one Drachm of alkaline urinous Liquor; one Ounce, six Drachms, and forty two Grains of Oil, which was transparent, fluid, and green; three Ounces, two Drachms, and forty two Grains of Oil, of an azure Colour; three Ounces three Drachms of thicker Oil, of a brown Colour tending to Red. The black Mass remaining in the Retort weighed eight Ounces and sixty six Grains: Which being calcined for twenty Hours in a Crucible, left one Ounce, three Drachms, and thirty six Grains of red Ashes. From these were got one Drachm and nine Grains of fixt neutral Salt. In Distillation the Loss of Parts was eight Ounces, six Drachms, and forty two Grains; in Calcination six Ounces, five Drachms, and thirty Grains.

Sagapenum therefore consists of Sulphur, an acid and volatile urinous Salt, with a small Quantity of Earth. These Principles constitute a resinous and ammoniacal saline Compound.

The *Arabian* Authors rank Sagapenum among Purgatives, though the *Greeks* have passed this Quality over in Silence. It has indeed a Virtue of moving the Belly, but so weak and inert, that it requires the Assistance of some other Cathartick. It most powerfully opens, discusses, and attenuates, and is greatly deterfive. Hence it is commended in Affections of the Breast proceeding from thick Phlegm, in hard and callous Tumours, especially of nervous Parts, and in old Disorders of the Head; in short, whenever thick and coagulated Humours

are to be dissolved and attenuated. It is prescribed from ℥j. to ʒj. The Custom hath obtained that this Drug is never given alone, but always mixed with other proper Medicines, and most frequently under the Form of a Pill by Reason of its disagreeable Taste. It is useful in the Asthma, Obstruction and Tumour of the Spleen; in the Dropsy, Disorders of the Nerves, Spasms, the Epilepsy, Trembling of the Limbs, and the Palsy. It provokes the menstrual Purgations, and is said to kill the *Fœtus*: For which Reason pregnant Women ought to abstain from it. Moreover, *Mesue* asserts that it hurts the Stomach and Liver: And on this Account it is mixed with astringent and strengthening Stomachicks, as with Spike, Mastich, Cinnamon, &c. It is likewise commended against a quartan Fever, and Pills are made of it described by *Quercetan*, which are called *Pilulæ de Sagapeno Camilli*, from one *Camillus* an eminent Physician of *Genoa* (*viz.*)

Take of choice Sagapenum ʒvj. the purest Gum Ammoniack ʒiij. Extract of the Troches *Albandal* ʒj. Scammony prepared ʒj. Sal Gem zifs. Mix these with the Syrup of Violets, rendered acid with the Spirit of Vitriol or the like, and make Pills of the Bigness of Peas or Vetches. Let one be taken in the Beginning of the Paroxysm, and be repeated for some Days. They are likewise serviceable in stubborn Affections, in hypochondriack Disorders, and in Infarctions of the Bowels from thick and glutinous Humours.

Rolfincius ascribes to Sagapenum so great a Power of curing Obstructions, that he says, if it be only applied externally, it removes Obstructions of the Bowels like a Charm. It also resolves scirrhus Swellings

Swellings of the Spleen, Hardness of the Bowels, and asswages Pains of the Side.

ARTIC. VIII. Of SARCOCOL.

Sarcocolla, Off. Σαρκοκόλλη, Græcor. *Ansarot*, *Anazaron* et *Auzurut*, Arab. Sarcocol is a gummous Juice, somewhat resinous, consisting of small, or, as it were, crumbled Grumes, of a whitish Colour, reddish white, or red, spongiuous, friable, and sometimes mixed with shining Grains; of a subacid, bitter Taste, with a flat Kind of Sweetness, unpleasant, and something nauseous. This Juice seems at first to concrete into Drops as large as a Pea, or Hazel Nut, and to be afterwards broken into the Grains above described, which are not much larger than Poppy-Seed. It grows soft under the Teeth, dissolves in Water, and being put to a Candle rises up into Bubbles, and then breaks out into a bright Flame. It ought to be chosen of a rare Texture, spongiuous, white, and bitter. It is brought from *Persia* and *Arabia*.

There is another Sort of Sarcocol, in fowl Lumps, of a brown Colour, of which *Pomet* makes mention; but it ought to be rejected.

No Author, either among the Ancients, or the Moderns, has described the Plant which produces this Juice; and it is still unknown.

In a chymical *Analysis*, two Pounds of Sarcocol yielded two Ounces and six Drachms of transparent, reddish Phlegm, tasting a little saline, yet was somewhat insipid, and gave Marks, though slight, of a urinous Alkali; five Ounces, six Drachms, and thirty six Grains of reddish acid Liquor; two Ounces, three Drachms, and thirty six Grains of Liquor, both acid, and urinous; three Ounces and six Drachms of fluid brown Oil; four Ounces
and

and thirty six Grains of thicker Oil. The black Mass remaining in the Retort weighed seven Ounces, six Drachms, and sixty six Grains: Which being calcined for twenty four Hours in a Crucible, left seven Drachms and fifty four Grains of reddish brown Ashes. From these were got one Drachm and nine Grains of fixt neutral Salt. The Loss of Parts in Distillation was five Ounces, two Drachms, and forty two Grains; in Calcination six Ounces, seven Drachms, and twelve Grains.

Therefore Sarcocol consists of a copious Oil, a moderate Portion of acid Salt, a large Quantity of alkaline Salt, both volatile and fixt, and a considerable Stock of Earth; from which arises a gummy or saponaceous, and somewhat resinous, Compound.

Authors are not agreed concerning the Virtues of Sarcocol. The ancient *Greeks* have said nothing of its purgative Virtue, and they only used it externally. The *Arabians* ascribe to it a Quality of purging thick and glutinous Phlegm. *Galen* says it consolidates Wounds, and dries without Corrosion. *Serapio* reckons it among Catharticks. He asserts that being outwardly used it eats away Flesh in Ulcers, and that inwardly taken it ulcerates the Intestines, and occasions Baldness; yet he proposes it to be given from ℥j. to ℥iij. provided it be tempered, like Euphorbium, with Oil of Almonds, or Nuts. But *C. Hoffman* condemns and entirely disallows the internal Use of it.

It is generally commended in Ases or Women's Milk against Ophthalmies, or Fluxions of the Eyes, which it appeases by softening the Acrimony of the Lymph. It likewise deterges, heals, and cicatrizes Wounds; and is therefore called *Sarcocolla* or *Flesh-Glue*.

Take

Take of Sarcocol macerated in Milk ʒj. prepared Tutty ʒfs. Mucilage of Quince-Seed extracted by Rose-Water ʒiij. Mix and make a Collyrium for Inflammations of the Eyes.

Take Myrrh, Aloes and Sarcocol, ā q. v. Make a Powder to consolidate Wounds.

C H A P. VIII.

Of Juices extracted from Plants by Art.

HA V I N G spoke of the liquid and concreted Juices, which flow from Plants, either spontaneously, or by Incision, we are now to treat of some other concreted Juices, which are drawn from their respective Plants by Art. These either preserve the Consistence of a solid Extract; or they put on the Appearance of Salt. Of the first Kind are Aloes, Scammony, Gamboge, Opium, Acacia, Hypocistis, and *Japan-Earth*; of the last, Sugar and Tartar.

ARTIC. I. *Of ALOES.*

Aloe et Succus Aloes, Off. 'Αλόη, Diosc. Laber et Cebur, Arab. Aloes is an inspissated Juice, which in the Shops is distinguished into various Sorts, either from the Places whence it is brought, or from the *Species* of the Plants which produce it, or from some Difference in its Substance.

The Ancients reckoned but two Sorts, according to *Dioscorides*: The one was pure of a yellowish red Colour, resembling the Liver, and thence named *hepatick*; the other was impure, coarse, and gritty, being only the Dregs of the finer Sort.

At

At present Aloes is most commonly distinguished in the Shops, from the Difference of its Substance, into the *Soccotrina*, *hepatica*, and *caballina*, the *Soccotrine*, *hepatick*, and *caballine* or *Horse-Aloes*: But this Distinction was unknown to the Ancients, who seem to have included the two former under one Name. For the *hepatick Aloes* named by the ancient *Greeks* Ἡπατις and Ἡπαλίζυσα, by the *Barbarians* was termed *Sycotina*, from συκωτὸν, a Word used by the modern *Greeks* to signify the *Liver*. But when the best *hepatick Aloes* was brought from the Island of *Socctora*, it was then, instead of *Sycotina*, called *Sycotrina*, and *Soccotrina* *; by which we no longer understand, as formerly, the *hepatick*, but only the purest Aloes, of a reddish brown, or yellowish Colour, clear, and pellucid; whence it is also called *Aloe lucida*. It has a bitter, astringent Taste, somewhat aromack, and a strong Smell, but not unpleasant.

That which is now called *hepatick Aloes* is dense, dry, opaque, approaching to the Colour of the Liver, of a more bitter and astringent Taste, and stronger Smell.

Lastly, the *caballine*, which is the worst Sort, is heavy, dense, black, full of Earth and Gravel, extremely bitter and nauseous, and offensive to the Smell.

But we shall here, with the more accurate Writers on Botany, after *Commelinus*, distinguish Aloes into the *Soccotrine* or finer, the *common* or inferior, and the *fatid* or *caballine*. Again, the *common*, and also the *fatid*, when pure, are called *hepatick*, and both likewise, when impure, are called *caballine*.

The *Soccotrine Aloes* is very pure, bright, shining, fat, friable in the Winter, softish in the Sum-

* Likewise *Succotrina*, and in the new Catalogue of the College, *Socotorina* or *Socotorine Aloes*.

mer, growing sticky in the Hands, yellowish, or reddish with a Cast of Purple, and when reduced to Powder of a shining golden Colour. It has an aromack bitter Taste, and a strong Smell, but not very ungrateful, being somewhat aromack, not much unlike Myrrh.

It is drawn from a Plant named *Aloe succotrina, angustifolia, Spinosa, flore purpureo*, Breyn. *Prodrom.* 2. *Commelin. Hort. Amstel. rarior.* 91. *Aloe Indiæ orientalis serrata, sive Succotrina vera, floribus Phœniceis*, Hort. Beaumont. *Aloe Americana, Ananæ folio, floribus suavè-rubentibus*, Pluk, *Phytogr. tab.* 240. fig. 4. The Leaves of this Plant pulled from the Root being gently pressed by the Hand, or an Instrument, the Juice drops from them into a Vessel set under to receive it, and having stood all Night that the gross Parts may subside, it is poured off into another Vessel, and placed in the Sun till it concretes and becomes dry, and then it acquires a yellowish Colour. It comes to us in Skins from the Island of *Soccotora*.

The inferior Aloes or hepatick is more obscure, less shining, more dense and dry, resembling the Colour of a Liver, of a stronger Smell, and more intense bitter Taste.

The Plant from which this Sort is obtained is called *Aloe vulgaris*, C. B. P. 286. This Plant grows both in the *East* and *West*; and its Juice is prepared not only in several Places in the *Indies*, as in *Cambaia* and *Bengal*, but also in many Parts of *America*, as in *Mexico*, *New Spain*, *Brasile*, and *Barbadoes*, &c. The Leaves cut small and bruised are put into an oblong Vessel, of the Form of a Cylinder, where they continue for twenty five Days, during which a Froth rises to the Top, which being useles is thrown away. The upper Part of the Juice is then separated from the Dregs, and by the Heat

Heat of the Sun concretes into the hepatick Aloes : And the Dregs inspissated afford an impure Extract, called caballine Aloes.

The caballine Aloes is easily distinguished from the other Sorts by its ungrateful, strong Smell, though in other Respects it may agree pretty much with the common : It is sometimes even so pure and bright, that its offensive Smell is the only Mark whereby it can be known from the Soccotrine. For this Reason it is called *fœtid* ; and *caballine* because it is employed only by Farriers in the Distempers of Horses, &c.

The Soccotrine Aloes is almost universally required for internal Use, and the hepatick for external ; yet some, on the other Hand, assert that the hepatick, whether internally or externally used, is preferable.

It is certain *M. Boulduc* has discovered a great Difference between them ; the bright Soccotrine Aloes containing a less Quantity of Resin or Sulphur than the hepatick, and more of a Gum, or saline Substance. For four Ounces of Soccotrine Aloes being put into boiling Water and digested in a Sand-Heat, the whole Substance of the Aloes was dissolved ; but the Solution being set for some Hours in a cool Place, a certain resinous or heavier Portion fell to the Bottom of the Vessel, the aqueous Liquor swimming above it. The Sediment separated from the Liquor, and exposed to the Heat of the Sun till it was dry, weighed seven Drachms and twelve Grains. This resinous Substance he dissolved in Spirit of Wine, and found sixty Grains of an earthy or gritty Matter not taken up by the Menstruum. But the Spirit of Wine being evaporated by a gentle Heat, the Extract remaining, which was resinous and entirely inflammable, weighed six Drachms and twenty four Grains. The aqueous Liquor loaded with Gum, evaporated to Driness in an Ash-Heat,

left two Ounces and one Drachm of a gummous Extract.

In like Manner four Ounces of hepatick Aloes being wholly dissolved in boiling Water, and the Solution having stood some Time to cool, a resinous Sediment subsided. This, separated from the Liquor above it, and dried, was two Ounces in Weight; from which he got, by the Means of Spirit of Wine, eleven Drachms of an inflammable resinous Extract, four Drachms of a Saline earthy Substance remaining; which I suspect to be an essential Salt nearly resembling Tartar. From the aqueous Solution evaporated he obtained nine Drachms of a gummous Extract.

In these Processes the Loss of Parts was very considerable, (*viz.*) seven Drachms and sixty Grains from the Soccotrine Aloes; and five Drachms from the hepatick. Whence we may conclude that in the Soccotrine Aloes is contained a larger Stock of volatile Parts, whether saline or sulphureous, than in the hepatick; about half as much Resin; almost double the Quantity of Gum; and very little Earth and fixt Salt.

The same ingenious Author found by Experience that the Resin is void of cathartick Virtue, which resides only in the Gum, and that this even purges more strongly when separated from the Resin. He likewise asserts that the Soccotrine Aloes purges more violently than the hepatick: And indeed the Soccotrine is more plentifully stocked with volatile and active Parts, to which the cathartick Quality is principally owing. Besides, the saline Part in the hepatick is duly tempered with the resinous, and not so in the Soccotrine. Neither is the Soccotrine preferable for external Use, but, on the contrary, greatly inferior to the hepatick, which includes a larger Stock of sulphureous and balsamick Parts.

Parts. He moreover experienced the resinous Substance of Aloes to be possessed of an extraordinary balsamick Virtue, and to be very efficacious applied externally to Wounds. Hence it follows that the Hepatick Aloes ought to be preferred to the Socco-trine, both for external and internal Use: Which some Authors have before ventured to maintain, in Opposition to the vulgar Notion, as *Jubera*, a *Spanish* Apothecary, in *Zacutus Lusitanus*, and others in *Rolfincius*, p. 36. *De purgantibus*.

In a chymical *Analysis*, two Pounds of hepatick Aloes yielded four Drachms and thirty six Grains of limpid Phlegm, void of Taste and Smell; five Drachms and twenty six Grains of limpid, sub-astringent Liquor, which yet gave Marks of a volatile Alkali; ten Ounces, four Drachms, and eighteen Grains of Liquor, both acid and urinous, at first limpid, and of a bituminous Smell, afterwards reddish and empyreumatick; one Ounce, seven Drachms, and forty six Grains of thick Oil, of the Consistence of Syrup, of an acrid, pungent Taste, without Bitterness, and heavier than Water. The black Mass remaining in the Retort, of a rare Texture, light, and void of Taste, weighed fifteen Ounces and two Drachms: Which being calcined for some Hours left two Ounces, five Drachms, and forty two Grains of Ashes; from which were drawn three Drachms and thirty three Grains of fixt neutral Salt. The Loss of Parts in Distillation was three Ounces and seventeen Grains; and in Calcination twelve Ounces, four Drachms, and thirty Grains.

From this *Analysis* it follows, that Aloes consists of a copious thick Sulphur, a considerable Portion of ammoniacal Salt, and a small Quantity of Tartar, joined with a large Proportion of Earth. Whence arises a salino-gummous and resinous Compound.

Aloes, whether inwardly or outwardly used, has been much commended in all Ages. The Ancients ascribed to it a Virtue of purging, of strengthening the Bowels, opening the Veins, agglutinating Wounds and Ulcers, and stopping Fluxes of Blood. However, all Authors are not agreed upon these Virtues.

1. They doubt whether it ought to be reckoned among Eccoproticks, or among Catharticks. *Galen*, on the *Virtues of simple Medicines*, l. 6. ranks it with such Medicines as draw forth the fecal Matter from the Intestines, (*viz.*) with Eccoproticks; and *Paulus Aegineta* agrees with him. The same *Galen*, on the *Composition of Medicines secundum loca*, l. 8. c. 2. writes, that Aloes has a weak purgative Virtue, and only discharges what is lodged about the Belly. Again, on the *Method of preserving Health*, l. 6. c. 10. he says it only purges Bile in the Belly: And in another Place he excludes Phlegm, where he tells us, that Aloes is of no Service to Persons who have the Coats of their Stomach loaded with thick *Pituita* or Phlegm.

But the *Arabians* are of a contrary Opinion: And *Mesue* asserts that this Medicine purges Bile, Phlegm, and other viscid, tenacious and thick Humours, that it cleanses the Head and Stomach, and frees the Liver of Infarctions.

In short, Aloes not only discharges the fecal Matter lodged in the Belly, but also corrects the Faults of the Bile, by dividing and attenuating it when too thick, and by sharpening it when inert, so that afterwards it may flow with greater Ease, and in greater Plenty, through the Intestines. But if it be given to promote a large Evacuation, it does not draw forth the Humours so much as the Blood, which it ferments and rarefies in the hemorrhoidal Vessels. Therefore Aloes, given in a small

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Dose,

Dose, ought to be reckoned among Eccoproticks : But in a larger Dose it becomes not so properly a powerful cathartick, as a noxious one. So that if we would augment its purgative Force, it ought not to be done by enlarging its Dose, but by mixing with it some other Catharticks.

2. Authors are not more agreed with Respect to its Virtue of strengthening the Bowels, as the Stomach, Liver, &c. and of correcting other Purgatives. *Dioscorides* says, that Aloes mixed with other Purgatives renders them less hurtful to the Stomach. *Galen*, on the *Virtues of simple Medicines*, l. 6. asserts, that nothing is more agreeable to the Stomach: And *Paulus Ægineta* is of the same Opinion. “ All purging Medicines (says he) are unfriendly to the Stomach, except Aloes, which is agreeable.” *Mesue* pleads strongly for its good Effects : For he proposes Aloes as a Medicine greatly preferable to other Purgatives ; which is so far from weakening the Body, like them, that on the contrary it strengthens it ; that it corrects the Faults of other purging Medicines, cures the Disorders occasioned by them, and increases their Efficacy. In fine, others have stiled it a salutary Balsam ; inasmuch as it preserves the natural Humours, evacuates the preternatural, corrects those between both, and defends all from Corruption : Whence this common Proverb ; *Qui vult vivere annos Noe, sumat Pilulas de Aloe.*

Some, however, have quite a different Opinion of the Virtues of Aloes, asserting that it hurts the Stomach and Liver, and even go so far as to tell us that it shortens Life. *Galen*, l. 3. *Aphorism* 15. condemns the too frequent Use of all Purgatives whatever, in Words to this Effect. “ He who purges himself twice, or even once a Month, for Fear lest a Load of Excrements should be accumulated

“ mulated in his Body, will not only bring it to a
 “ bad Custom, but will also enfeeble and make it
 “ worfe.” Though this be not spoken of Aloes
 in particular, it is yet to be understood no less of
 that than of other Purgatives. And they who an-
 swer, from *Galen*, that Aloes is agreeable to the
 Stomach, meet with a sharp Reply from *Scaliger*
 and *Cardan*. For they assure us that Multitudes,
 under the same Mistake, hoping by this Medicine
 to prolong their Lives to a good old Age, have
 either died untimely by using it, or have been
 thrown into grievous Distempers.

Nor is the Judgment which *Fernelius* passes upon
 it, *l. 3. c. 9. of the Method of Cure*, much more
 favourable. “ Aloes (says he) is hurtful to the
 “ Liver, where it vellicates by its Bitterness and
 “ Acrimony the small Veins; it corrodes the Fun-
 “ dament, and opens the Hemorrhoids. It is highly
 “ prejudicial to those who vomit or spit Blood,
 “ or who are subject to any Flux of the same from
 “ the Womb or Belly. In hot and dry Constitu-
 “ tions, and in emaciated Bodies, it is useless, un-
 “ less there be a large Accumulation of excremen-
 “ titious Moisture. Neither is it proper for Chil-
 “ dren, nor safe for pregnant Women, nor conve-
 “ nient for old People who are not replete with Ex-
 “ crements.”

Caspar Hoffman, on *officinal Medicines*, writes, after
Helidæus, that the internal Use of Aloes is to be
 suspected, unless given to stir up the Motion of the
 Blood. He likewise thinks that the extravagant
 Commendations bestowed upon it by *Mesue*, and
 others, are to be cautiously interpreted; especially
 when they tell us it is agreeable to the Stomach,
 not only by occasioning a Constriction, but also by
 an occult Quality. For as it is a Purgative, pro-
 perly so called, it must necessarily include some-

thing contrary to Nature ; which they themselves tacitly acknowledge, when they attempt to correct it with Mastich, Saffron, and Cinnamon, &c.

Now, in Order to compose these Differences, we must observe that Aloes, either immoderately, or unseasonably used, is hurtful ; but that taken in due Time, and Measure, it is serviceable ; particularly to opulent Citizens and other Persons of Fortune, who living in the Midst of Plenty, are incessantly cramming themselves with Variety of Foods and Sauces ; so that the Stomach, weakened and oppressed by the continual Labour of Digestion, and an enormous Quantity of Victuals, may sometimes want the Assistance of this stimulating bitter Medicine, as well to incide and resolve the crude, tenacious Humours, adhering to its Membranes, as to carry them off, together with the filthy Matter wherewith the Intestines are loaded. Aloes, I say, is very beneficial to Persons who lead an idle, sedentary, and luxurious Life, whereby the Vessels of the Belly become more and more replete with thick, viscid, and foul Humours. In this Case it relieves the Stomach and Intestines, by discharging the *Fæces* by which they are overloaded, and by helping Concoction. It is also serviceable to the Liver by dissolving the inspissated Bile and Blood, rendering both more fluid, and by exciting their Motion. And whatever Detriment these Gluttons may suffer from a too frequent Use of Aloes, it ought to be regarded as nothing, in Comparison of the Ailments which a Redundancy of crude Humours might occasion. But with Respect to Persons who lead a Life of Sobriety we are to judge otherwise : For when the Body is free from Excrements, this Drug is injurious. In dry and bilious Temperaments, it augments the Dryness, and brings on an Atrophy. When the Bowels are

are hot, it inflames them, and causes Hemorrhages, and always increases the Effervescence of the Blood.

3. The *Arabians*, and many of the Moderns, attribute to the Juice of Aloes a Virtue of opening the Veins, and drawing forth Blood. But the *Greeks* are quite silent upon this Virtue: On the contrary, *Dioscorides* ascribes to it a Power of stopping an *Hæmoptysis*. However daily Experience teaches us, that a long Use of Aloes provokes the menstrual and hemorrhoidal Fluxes, and expels the *Fœtus*, and therefore, when the accustomed Evacuations, either by the uterine or hemorrhoidal Vessels are suppressed, all Physicians prescribe this Drug with Success to promote them.

This being granted, the next Question is, Whether Aloes, which has a Power of opening the inferior Blood-Vessels, does in like Manner open the superior, and particularly the Vessels of the Lungs, or no? *Dioscorides* writes, that Aloes with Water or Whey stops the Spitting of Blood; and *Pliny* relates the same. But *Galen*, though he allows it an astringent and agglutinating Property, when outwardly applied, yet he no where proposes it to be taken inwardly against the Spitting of Blood. Among the *Arabians*, *Serapio* following *Dioscorides*, defends his Opinion: But *Mesue* makes no Mention of its Efficacy that Way. Some of the Moderns, as *Mornardus*, &c. have ascribed to Aloes both these Virtues (*viz.*) of opening the inferior Vessels, and of closing the superior; and indeed in some Medicines we find the like contrary Qualities. Nevertheless the most judicious Physicians, after *Fernelius*, are afraid of giving it in the Vomiting or Spitting of Blood; and I think with them, that it is adviseable in these Cases to abstain from it, since we are provided with other Medicines less dangerous and much better.

4. As to the Virtue of agglutinating Wounds and Ulcers, and of staying Fluxes of Blood, ascribed to Aloes externally applied, it is scarce called in Question by any ; both the *Arabians* and Moderns herein agreeing with the Ancients. “ Aloes (says *Galen*, l. 6. concerning the Virtues of simple Medicines) “ agglutinates Sinuses, and heals Ulcers which “ are difficultly brought to cicatrize, especially “ when they are situated at the Extremity of the “ large Intestine and about the *Pudenda*.” And l. 5. c. 4. concerning the Method of Cure, he gives us to understand that it has a powerful Virtue of stopping Blood. “ Mix two Parts of Frankincense “ (says he) with one Part of Aloes, and blend them “ together with the White of an Egg till they have “ the Consistence of Honey ; then put them upon “ the softest Hare’s Fur, and apply them over the “ open Vessel or Ulcer.” *Avicenna* approves the same Application to the Hemorrhoids. The Moderns likewise commend it no less as a Balsamick and Vulnerary : For it is very much used by the Surgeons to cleanse Wounds, when disposed to change into Ulcers. They either boil it in Wine with Birthwort, Tobacco, Myrrh, &c. or mix it with proper Plaisters or Unguents ; or to cleanse sordid Ulcers, they use its Tincture with Brandy, or Spirit of Wine.

Besides the Virtues abovementioned, it is likewise accounted good to kill Worms, whether taken inwardly, or applied to the Navel.

Concerning the Dose of Aloes the Ancients differ from the Moderns, at least from the Physicians of these Climates. *Dioscorides* proposes ʒss. or ʒj. to relax the Belly, and ʒij. as a Purge. But at present this Dose is thought too large. It is now given only from ʒj. to ʒij. in a Bolus or Pills, being seldom taken dissolved by Reason of its bitter nauseous Taste.

They

They are no less at Variance in Regard of the Time of using it. *Paulus Ægineta* asserts that it ought to be taken in the Morning when the Stomach is empty: "For they who give it in the Evening (says he) or after Food, do Mischief; for it corrupts the Aliment." But at this Time Aloes is either taken fasting, and then it purges very well; or with Victuals, at the Beginning of Dinner or Supper, and then it purges slowly, or only relaxes the Belly.

Aloes was rarely prescribed by the Ancients, unless prepared by Lotion, or Nutrition. The Lotion or Washing is performed thus. The Aloes reduced to a smooth Powder, either alone, or, as *Œ. Sylvius* directs, with powdered Chalk, is thrown into clear Spring-Water and stirred about for some Time with a wooden Spattle. Afterwards it is suffered to stand a Quarter of an Hour or longer to settle, and then the clearer Liquor which is uppermost is poured off into another Vessel, and exhales to Dryness by the Heat of the Sun. If the Residue be not sufficiently pure and shining, it is powdered and washed again; and this Process may be repeated, if we please, a third, or a fourth Time. For the Ancients believed that Aloes, after so many Lotions, was in a great Measure deprived of its cathartick Virtue and Acrimony. Nevertheless some of the Moderns have judged otherwise: Among whom *Etmuller* makes it to consist of two Substances; the one mucilaginous, whereupon its purgative Virtue depends; the other resinous, wherein is lodged its Astringency. Wherefore, when purging alone is required, *washed Aloes* (which is the Gum, or the mucilaginous Part extracted by Water) is preferable to *unwashed Aloes*: But when the resinous balsamick Part is necessary, either to blunt the purgative Force of the other, or

to strengthen the Fibres of the Stomach and Intestines, &c. then Aloes ought to be made use of *unwashed*. This is also confirmed by the Experiments of *M. Boulduc*: And if Aloes washed after the Manner of the Ancients was less purgative, it was perhaps owing to the alkaline Particles of the Chalk obtunding the saline Parts of the Juice, and rendering them inert. We shall therefore conclude with *M. Boulduc*, that Lotion in Water is an useless Preparation, since it rather increases, than softens the cathartick Quality of the Aloes.

Nutrition, or, as some term it, *Insuccation*, being preferable to the former Method, is often practised in the Shops. They take the purest Aloes reduced to Powder and dissolve it in the Juice of Roses, or Violets, &c. and then, without straining, evaporate the Moisture with the Heat of the Sun, or a gentle Fire. They repeat this a second or third Time, and so procure what is named in the Shops *Aloe rosata*, or *violata*, that is Aloes mixed and tempered with the Extract of Roses or Violets. This Preparation of Aloes is also sometimes called *Lotion*, but improperly.

Some likewise require Aloes to be prepared by burning, in Order that it may strengthen the Belly more, and stop Fluxes: But this Treatment, instead of meliorating the Aloes, destroys its Substance.

But to recapitulate what we have said on the Virtues of Aloes. We have then concluded that it purges bilious and pituitous Humours, promotes the *Menses* and Hemorrhoids, opens Obstructions of the Womb, Liver, and Mesentery, corroborates the Stomach and Intestines, helps the Concoction of Food, raises the Appetite, kills Worms and expels them, and removes Putrefaction. It is proper in Distempers arising from Weakness and Obstruction
of

of the Bowels, in cachectick, cold, and moist Constitutions; but is hurtful to Persons whose Bowels are hot, whose Blood is bilious and in a State of Effervescence, to hectical and phthifical People, and to such as vomit or spit Blood, or are subject to Hemorrhages from any Part of the Body whatsoever. It is extremely noxious in acute and inflammatory Diseases; and pregnant Women ought to abstain from it. Externally it is employed to Advantage to deterge and heal fordid Ulcers; and is likewise commended for Ulcers of the Eyes.

Take of choice Aloes reduced to a fine Powder ℥ss. of the Juice of Roses as much as will rise four Fingers Breadth above the Powder. Stir them well together, and set them in the Sun, covered with a Sieve, till they are inspissated to the Consistence of Honey. Then pour on a fresh Quantity of Juice, and evaporate as before; and so repeat the same Process nine Times. At last dry the Mass to a due Consistence for Pills, and keep it in a Bladder for Use. This we call *Aloe rosata*, or *rosated Aloes*. When it is made into Pills, we must observe that the smaller they are, the better they work. In the same Manner may be prepared the *Aloe violata*, or *violated Aloes*.

Take rosated Aloes and the Extract of Rhubarb, ā ʒj. Mastich ʒj. Extract of Gentian and Wormwood, ā ʒss. Mix and make Pills to relax the Belly, strengthen the Stomach, and help Digestion. The Dose is ʒj. before Meals.

Take hepatick Aloes and powdered Jalap, ā ʒss. Troches *Albandal* gr. ij. Troches of Agarick gr. x. Oil of Aniseed gutt. ij. Syrup of Peach-Blossoms q. s. Mix and make purging Pills, to be taken in a Morning on an empty Stomach.

Take

Take of bright Aloes gr. xv. Gamboge gr. ij. dulcified Mercury Sublimate gr. vj. Syrup of Buckthorn q. f. Oil of Cinnamon gutt. j. Mix and make hydragogue Pills.

Take hepatick Aloes and Scammony, ā ʒij. Mastich and Liquorice-Juice, ā ʒij. Oil of Cloves gutt. vj. of the solutive Syrup of Roses q. f. to make them into a Mass for Pills. The Dose is ʒj. or ʒfs.

Take of bright Aloes ʒj. Myrrh ʒfs. Saffron gr. xv. Syrup of Wormwood q. f. Make them into Pills, which may be used to relax the Belly, to strengthen the Stomach, and to provoke the *Menses*. The Dose is ʒfs.

Take Soccotrine Aloes and Gum Ammoniack, ā ʒvj. of the aperient Saffron of Iron ʒv. the Extract of the lesser Centory ʒiv. Syrup of Wormwood q. f. Mix and make a Mass of opening Pills, to be given in the Green-Sickness, and in Cachexies. The Dose is ʒj. Morning and Evening.

Take of Soccotrine Aloes ʒfs. white Vitriol gr. v. the distilled Water of Fennel and Eyebright, ā ʒiij. Make a Collyrium f. a.

From Aloes are prepared a Tincture, and the *Elixir Proprietatis* of *Paracelsus*.

The Tincture is drawn by pouring upon powdered Aloes Spirit of Wine, to the Height of two or three Fingers Breadth, and digesting them together in B. A. till the Spirit acquires an intense red Colour; which is then separated from the *Fæces* and put by for Use. This Tincture has a purgative Virtue, but weaker than a Solution of Aloes in Water. It strengthens the Stomach, and kills Worms. Outwardly applied it is a good Vulnerary, and removes Putrefaction.

The

The *Elixir Proprietatis* of *Paracelsus* is prepared with Spirit of Wine, thus.

Take Soccotrine Aloes, choice Myrrh and the best Saffron cut small, ā ʒj. Spirit of Wine rectified ʒxxx. Let them stand together in Digestion in B. M. or in Horse-Dung, for fifteen Days. Afterwards decant the Liqueur, and set it in a warm Place for a Day or two, that the *Fæces* may settle; and then put it by for Use. Some add to this Tincture ʒj. of the Spirit of Sulphur by the Bell; others, the same Quantity of the volatile Spirit of Sal Ammoniac, and digest for three Weeks longer. It is then termed *Elixir Proprietatis cum Acido*, or *Elixir Proprietatis cum Alkali*.

This Elixir gently loosens the Belly, kills Worms, provokes Sweat, corroborates the Fibres of the Stomach and Bowels, promotes the monthly Purgations, and opens the hemorrhoidal Veins. It is an excellent Preservative in Cases of Putrefaction, in the Scurvy, Plague, and malignant and contagious Distempers; especially the Elixir prepared with the Acid. It is likewise serviceable in hysterick and hypochondriack Disorders. The Dose, as an Alterative and Strengtheners, is from gutt vj. to xx. and to promote an Evacuation, from ʒj. to ʒij. But it is to be given under the same Cautions as crude Aloes.

ARTIC. II. Of SCAMMONY.

Scammonium, Scammonia et Scammonea, Off. Σκαμμωνία, Diosc. Διακρύδιον, Trallian. et quorumd. Græcor. recentior. Diacrydium, Cæl. Aurelian. Scammonea et Sachmunia, Arab. This is a concreted Juice cor
list

fisting both of Gum and Refin, but much more of the latter. In the Shops we meet with two Sorts (*viz.*) the Scammony of *Aleppo*, and that of *Smyrna*.

Aleppo Scammony is light, rare, friable, of an Ash-Colour tending to Black; when broken, shining, and when rubbed to Powder by the Fingers, of a whitish or gray Colour. It has a bitterish Taste with a certain Acrimony, and an unpleasent Smell. It is collected about *Aleppo*.

Smyrna Scammony is more dense and ponderous, and of a black Colour. This comes to us from *Smyrna*; but is brought thither from a Town in *Galatia* called *Cutè*, and from *Cogni* a Town in *Cappadocia* not far from Mount *Taurus*; where, as I was informed by Doctor *Sberard*, who was thirteen Years *English* Consul at *Smyrna*, it is gathered in great Abundance.

The *Aleppo* Scammony is preferable to that of *Smyrna*. The best is bright, easily reduced to Powder, not violently acrimonious and burning when applied to the Tongue, and when mixed with Spittle, or other Liquors, grows white and milky. When it is adust, black, heavy, full of Stones, Sand, or other Dross, it is unfit for Use.

The Plant which yields this Juice is called *Convolvulus Syriacus et Scammonea Syriaca*, *Morisson. Hist. Oxon. part. 2. 12.* It grows in *Syria*, and in great Plenty in the fat Soil about *Aleppo*.

Tournefort observes, that *Dioscorides* describes a Species of the *Convolvulus* or Scammony-Plant with a rough Leaf, wherein it chiefly differs from the above-mentioned. He likewise tells us, that he found this rough-leaved *Convolvulus* not only in the Plains of *Mysia*, from whence *Dioscorides* says the best Scammony in his Time was brought, but also about *Smyrna*, and in other Parts of the *East*. Hence he is inclined to think that the *Aleppo* Scammony is got from the *Convolvulus folio glabro*, the smooth-leaved

leaved *Convolvulus*, otherwise called *Convolvulus Syriacus*, &c. as above ; and that the *Smyrna* Scammony is the Scammony of *Dioscorides* and drawn from the *Convolvulus folio hirsuto*, the rough-leaved *Convolvulus*. This however he does not affirm. Upon meeting with the ingenious Botanist Doctor *Sherard*, and desiring to be set right in this Point, he told me, that he himself had observed the rough-leaved *Convolvulus* growing about *Smyrna*, but that no Juice is drawn from it ; because the smooth-leaved *Convolvulus* is so common, that it yields more Juice than the Inhabitants have Occasion for ; and that therefore they draw it only from such Plants as grow upon the Declivity of the Hill under the Citadel belonging to the Town. They make an Incision into the Root, and apply to the Wound a Shell, in which the milky Juice is received, and set to dry. This Scammony in Shells is pellucid, of a whitish or yellowish Colour, like Resin or Glue ; but it is seldom or never sent into *Europe* ; the Scammony, which comes to us in Masses from *Smyrna*, being brought thither, as we have before mentioned, from *Cutè* and *Cogni* ; and the Merchants assure us, that in those Places it is got from the *Convolvulus folio glabro*, the smooth-leaved *Convolvulus*.

Dioscorides and *Mesue* have mentioned several Methods of obtaining this Juice, as well by Incision as Expression ; and it is probable that the Scammony of the Shops is now obtained both Ways, which may be the Reason why we find so much Difference in the same Lump.

Scammony, in a chymical *Analysis*, affords first a small Portion of thin Liquor, somewhat acrimonious, but giving no Marks either of Acid or Alkali ; then a large Quantity of acid Liquor ; afterwards some Liquor, both acid and urinous ; and at last

laſt a large Proportion of thick, empyreumatick Oil, with a little Earth and fixt Salt. From theſe Principles ariſes a Compound conſiſting both of Gum and Reſin; yet ſo, that from ſix Ounces of Scammony may be drawn, by Means of Spirit of Wine, five Ounces of Reſin. It diſſolves in the greateſt Part in Spirit of Wine, ſome ſaline-earthy mucilaginous Parts remaining. In watery Menſtrums it diſſolves entirely; but, from the Mixture of the refinous Parts with the ſaline and aqueous, the Solution appears milky.

Scammony was uſed both by the *Greeks* and *Arabians*. *Mefue* reckons it ſo much ſuperior to other Evacuants, that he ſometimes calls it ſimply the *Purgative*; and *Oribafius* regards it as the moſt violent of all purging Medicines. *Galen*, in his Book *concerning the Virtues of ſimple Medicines*, has not mentioned it, though he often ſpeaks of it elſewhere.

The Moderns in their Opinion of the Virtues of Scammony agree with the Ancients: Nor do they uſe it leſs frequently to draw forth bilious, and ferous Humours from remote Parts. It is commended in cold and pituitous Temperaments, in intermitting Fevers, and Crudity of the Juices; more eſpecially in robuſt Bodies, of a ſettled Age: But to Children and weakly People, to Women when pregnant or brought to Bed, in ardent Fevers, and in all hot Diſeaſes and Conſtitutions, it is not accounted ſo ſafe.

Now, this Medicine ſeems to me to exert its Operation after a twofold Manner, (*viz.*) by irritating the Membranes of the Stomach and Inteſtines to Contraction, by its Parts which are more acrid and fixt, and alſo by vellicating the Nerves, by its oily Parts which are acrid and volatile, and ſo expreſſing the Juices from the Glands. As to
the

the rest, it does not dissolve the Blood and viscid Lymph so much as Manna, Jalap, and other Hydragogues; and therefore promotes not so large an Evacuation of thin *Serum*. This Operation of Scammony is accurately described by *Fernelius* in his *Method of Cure*, l. 5. c. 9. “ It draws (says he) “ thin yellow Bile from the whole Body, and also “ yellow Water and ferous Humours. And as its “ Action is violent, it makes a sudden Derivation “ from the remote Parts. However, it does not “ dissolve and evacuate thick Humours, which are “ accumulated about the Bowels, and, as it were, “ adhere to them, whether pituitous or bilious; “ but producing its Effects by a precipitate Opera- “ tion, it only carries along with it such Humours “ as are fluid and disposed to Fluxion. These it “ evacuates both from the *Abdomen*, as in Hydro- “ picks, and likewise from the Veins, and the deep- “ est Parts of the Body. And hence succeeds a “ sparing Discharge of Urine after taking it.”

But as all purging Medicines are, in their own Nature, injurious to the Body, so Scammony being more violent than others, must be proportionably more injurious. And accordingly Physicians take Notice of many great Inconveniencies belonging to it: Among which, in Particular, they observe,

1. That it is a ticklish Medicine, of a very uncertain Operation; insomuch that a small Dose sometimes brings on an *Hypercatbarsis*, and, on the contrary, a due and suitable Dose is oftentimes useles and of no Effect.
2. That it produces an irritating offensive Flatulency in the Stomach, and so occasions a *Nausea*.
3. That by its vehement Acrimony it inflames the Parts; and hence raises an unquenchable Thirst, and a Fever, especially in those who are subject to Obstructions of the Bowels, or Putrefaction of the Humours.
4. That by the same Acrimony

Acrimony it opens the Mouths of the Veins, and so excites *Hypercatarses* or Superpurgations. 5. That it likewise abrades the *Mucus* of the Intestines, occasioning a Dysentery, or *Tenesmus*, and Ulcers in the other Bowels. 6. That it is offensive to the principal Parts, by a Kind of Malignity, being extremely noxious to the Heart, Stomach, Liver, &c.

However, by some Precautions these Inconveniences may possibly be prevented, as, 1. By giving it opportunely, that is, either immediately in the Beginning of the Disease when the Matter is turgid, or otherwise when the Humours are concocted and become fluid. 2. By ordering it in a proper Dose. 3. By duly preparing it.

With Respect to the Dose of this Medicine Authors are not agreed. The ancient *Greeks* never ventured upon Catharticks without the greatest Prudence and Deliberation, but always gave them in large Quantities: Whereas we, who in the Use of these Medicines are become bolder, are more timorous in Regard of their Doses. This, perhaps, is the Reason why we reap not the same Benefit from them: Though it must be confessed that our Bodies in this Climate are of a looser Texture, and more easy to purge than the robust Bodies of the *Greeks*, and the Inhabitants of other hot Climates, who were inured to Exercise and Labour. *Dioscorides*, therefore, to purge Bile and Phlegm, directs it to be taken in Mulse to ʒj. *Paulus Ægineta* and *Aëtius* gave it to ʒij. and *Mesue* only from gr. v. to xij. or xv. *Bodæus a Stapel* tells us, that he has often given it with good Success to gr. xx. or xxv. mixed with Syrup of Violets; to Children of eight, ten, or twelve Years of Age, to gr. xij. or xv. and to those of five, to gr. vj. or vij. *Wedelius* makes this Distinction. “ It is given (says he) either as “ the Basis or principal Ingredient, or as a *Stimu-*
“ *lus*

“*lus* or Auxiliary. As a *Stimulus* it is given to
 “ gr. ij. or iij. and as the *Basis* to gr. xv. or ʒj.”
 Lastly, *Fallopious* puts an End to all Dispute about
 the Dose. “ I advise (says he) always to administer
 “ it in a small Quantity, to serve only as a Spur.”
 By a *Spur* he means a few Grains added to other
 Purgatives, for Peasants, and others of athletick
 Constitutions. As for myself, I prescribe the best
 Scammony, carefully powdered, from gr. ij. or iij.
 to gr. x. or xij. at most; though very seldom, and
 never without some Solitude concerning its Ope-
 ration, which is always uncertain. For when the
 Coats of the Stomach and Intestines are covered
 with a feculent tenacious *Mucus*, then the Medicine,
 being involved in this *Mucus*, passes through the
 Belly without Action. But, on the other Hand,
 when their Coats are almost destitute of *Mucus*, it
 lodges within the Foldings of the Stomach, or
 Cells of the Intestines, and adhering to them by
 Means of its resinous Parts, irritates, inflames, and
 ulcerates the Membranes; and hence a small Dose
 is succeeded by a Superpurgation, a Dysentery, or
Tenesmus.

Since Scammony, as we have said, is a Substance
 compounded of both Gum and Resin, but so that
 the Resin greatly predominates, therefore, though
 it dissolves in Water, the Solution is not perfect,
 because the resinous Part gradually separates into
 Grumes, and subsides. For this Reason it cannot
 be safely drank dissolved in aqueous Liquors. Where-
 fore it is usually taken in the Form of a Bolus or
 Pills, and seldom in Potions; in which it is not
 given, unless divided by Spirits, Oils, or Salts.

To temper the Acrimony of this Drug, and to
 subdue its other Faults, many Corrections and Pre-
 parations have been contrived.

The first Method of preparing it used by the Ancients is described by *Galen* thus, *l. i. concerning the Qualities of Aliments*. They scooped out the Seeds and some of the Pulp of a Quince, and filling the Cavity with Scammony, covered it with Paste made of Meal and Water, and roasted it: Then they gave the Quince to be eaten together with the Scammony. At present the Pulp is commonly thrown away, and the Scammony retained. Others retain the Pulp, and reject the Scammony: And others, with *Galen*, retain both.

In what Manner soever this Medicine is prepared, it is now called in the Shops *Diacrydium*, *Diagrydium*, and *Diadagrydium*, to distinguish it from crude Scammony. The Preparation abovementioned is termed *Diagrydium Cydoniatum*.

The Ancients likewise tempered it with the Cream of their Ptisan, as may be seen in *Galen* in the Place above quoted. *Mesue* bakes it under Gledes, or in an Oven, with the Seeds of Daucus, of Fennel, and with Galangal. *Valerius Cordus* macerates it in Oil of Violets by Infusion; then roasts it in a Quince covered with Paste; and lastly, pouring upon it the Juice of Quinces in which Myrobalans have been infused, sets it in a warm Place to dry. Again, some only mix it with the expressed Juice of Quinces, and gradually evaporate it.

The Moderns have attempted to correct its malignant Quality with the Juice of Liquorice, or with Sulphur: Whence it is named *Diagrydium glycyrrbizatum*, or *Sulphuratum*. The first is prepared by boiling a sufficient Quantity of Liquorice in common Water, which they strain and evaporate to the Thickness of a Syrup. Then they add q. s. of choice Scammony, reduced to a fine Powder, and placing the Mixture in B. M. stir it about continually, till it acquires the Consistence of an Extract.

The latter is made thus. They spread some bruised Scammony upon Paper, and hold it in the Fume of Sulphur thrown upon burning Coals, stirring it about continually with a Spattle, till it seems to melt. The longer the Scammony is held to take in the Fume of the Sulphur, the better it is supposed to be prepared.

This sulphurated *Diagrydium* is the *Basis* of a famous Medicine of the Shops, called *Pulvis de tribus* from the Number of its Ingredients; and *Pulvis Comitum Varvicensis* from an illustrious *Englishman*, *Robert Dudley*, Earl of *Warwick*, who was the Author of it. It is likewise called *Pulvis Cornachini*, because of the extraordinary Commendations bestowed upon it by *Marcus Cornachini*, Professor of Physick at *Pisa*, in a Treatise intitled *Methodus quâ omnes humani Corporis Affectiones ab Humoribus copiâ vel qualitate peccantibus genitæ, tutò, citò et jucundè curantur*. It is compounded of sulphurated Scammony, diaphoretick Antimony, and Cream of Tartar: But their Proportions are varied in this Author, with Regard to the peccant Humours. For he prescribes the *Diagrydium* from gr. vj. to xxij. the diaphoretick Antimony from gr. iv. to xx. and the Cream of Tartar from gr. ij. to vj. But at present this Powder is kept in the Shops, by the Apothecaries of *Paris*, prepared with equal Parts of *Diagrydium*, diaphoretick Antimony and Cream of Tartar: And thus it may be suited with greater Ease and Safety to different Ages and Constitutions, by knowing how much Scammony is contained in each Dose of the Powder. It is prescribed from gr. vj. to ix. for sucking Children; and to ʒj. or ʒfs. for Adults. *Cornachini* extols it as a *Panacea* for curing or preventing all Diseases incident to the human Body. He commends it, in particular, in intermitting, putrid, and acute Fevers, in

Deliriousness without a Fever, in the *cholera Morbus*, Dropsy, and Pleurisy, in Loosenesses, Dysenteries, the Gout, and Small-Pox, and against Worms. But nothing is so excellent, but that too free an Use of it may be hurtful; and this Medicine requires the same Cautions in its Administration, with Scammony, and other Catharticks: Yet we must acknowledge, that when thus prepared it is less obnoxious to the Inconveniencies abovementioned, may be prescribed by the Physician more safely, and be taken by the Patient without Disgust.

We are obliged to the Chymists for a Tincture of this Drug, and a resinous Extract, improperly called its *Magistry*. The Tincture is made by dissolving Scammony in Spirit of Wine, and separating the clear Liquor from the *Fæces*. The Extract is made by evaporating the Tincture to Half, and pouring Water to it, by which Means the Spirit, which before kept the Resin suspended, forsakes it, and the resinous Particles fall to the Bottom under the Appearance of Turpentine. The Sediment, after many Ablutions in Water, is at last dried in the Heat of the Sun. But this Resin purges less than Scammony in the same Dose, yet irritates the Intestines more violently, and often inflames them: Which we have before observed of the Resins of some other Catharticks.

Moreover, others try to correct Scammony with acid Liquors. They either dissolve it in Citron-Juice, then strain the Solution, and evaporate to the Consistence of an Extract; or they moisten the Powder with Spirit of Sulphur or Vitriol, and dry it. But these Corrections in some Measure destroy its Substance, and therefore lessen its Efficacy: So that it is better to mix it with some Powders, as in the *Pulvis Cornachini*.

But a much more commendable Method of correcting Scammony is observed in many pharmaceutical Compositions, wherein it is extended and softened by the Juices of Plants, the Pulps of Fruits, and the oily Parts of odoriferous Seeds, and Aromatics; such are purging Electuaries, and Pills. In these Scammony is employed, either as the *Basis*, or as a *Stimulus* to the other Ingredients. Nevertheless we must take Notice that in Pills it is not quite so safe, since in them its resinous Parts cannot be sufficiently extended; and on this Account it ought only to be used in that Form as a *Stimulus*.

Lastly, I shall here add the Judgment which the learned *Hecquet* has given of this Drug, in his *Treatise on Purgatives*, (*viz.*) That there is no Kind of Medicine which requires more Prudence in the Physician, a more convenient Time with Respect to the Patient, or more Observance of Rule in both.

It was used by the Ancients externally in Liniments and Unguents against the Scab, and cold Affections of the Head, to resolve hard, or scirrhus Swellings, to remove sciatick Pains, &c. and was applied upon Wool to draw down the *Menses*. At this Time it is scarce ever used but as a Purge.

Take of choice Scammony reduced to an impalpable Powder gr. viij. of the Yolk of an Egg ʒij. rub them in a marble Mortar with a wooden Pestle, till the Scammony seems dissolved; then add of the Syrup of Maiden-Hair ʒj. When these are perfectly mixed, make them into a Potion by gradually pouring upon them ʒvj. of Barley-Water, and a few Drops of the distilled Water of Orange-Flowers. This Medicine is not unpleasant.

Take of choice Scammony powdered gr. xv.
Sweet Almonds blanched ʒiv. beat them into

A a 3 a fine

a fine Pulp, pouring upon them by little and little ℥xij. of Barley-Water. Strain with a strong Expression, and in the Liquor dissolve of the Syrup of Violets, or of Maiden-Hair, ℥ifs. Cinnamon-Water ℥ifs. Make a Purging Emulsion for two Doses.

Take of Diagrydium prepared with Liquorice gr. vj. white Sugar ℥j. soluble Tartar ℥ij. Let them be rubbed together and perfectly mixed; then add ℔j. of common Water, the Juice of two Citrons, and gutt. x. of Orange-Flower Water. This Mixture may be drank by Glassefuls on an empty Stomach.

Take of Scammony in Powder ℥v. Spirit of Wine ℔j. set them in Digestion for nine Days, and filtre the Spirit through Paper: Then distil it to Half; and whilst it is warm, dissolve in it ℔ifs. of white Sugar, to make a Syrup; to which add a few Drops of the Oil of Cinnamon. The Dose is from ℥ifs. to ℥j. in any proper Liquor.

Take of Scammony ℥iv. Cinnamon ℥ij. Cloves ℥fs. rectified Spirit of Wine ℔j. Let them digest together for nine Days, now and then shaking the Vessel. To the Liquor poured off clear, add ℔j. of the Syrup of Quinces, and keep the Mixture for Use. The Dose is from ℥ifs. to ℥iij.

Take of Diagrydium prepared with Liquorice gr. vj. Rhubarb powdered ℥j. Quince-Marmalade q. f. Mix them into a Bolus.

Take of Diagrydium with Liquorice gr. vj. Powder of Jalap gr. xv. dulcified Mercury Sublimate gr. x. Pulp of Cassia fresh drawn ℥ij. Mix and make a Bolus.

Take powdered Sena, Rhubarb and Cream of Tartar, ā gr. xv. Diagrydium gr. iij. Conserve of Roses q. f. for a Bolus.

Take

Take sulphurated Diagrydium and diaphoretick Mineral, \bar{a} \bar{z} fs. the aperient Saffron of Iron and Cinnamon, \bar{a} \bar{z} ij. of Gum Ammoniack \bar{z} j. Syrup of Wormwood q. s. Make a Mass for Pills. The Dose is from gr. vj. to $\bar{\theta}$ j. in a Cachexy, and Obstructions of the Mesentery.

Take of Diagrydium prepared with a Quince \bar{z} j. bright Aloes \bar{z} ij. Troches *Albandal* \bar{z} ij. Mastich and Mace, \bar{a} \bar{z} j. Saffron \bar{z} fs. Syrup of Peach-Blossoms q. s. to make Pills. The Dose is from gr. x. to $\bar{\theta}$ j.

Take of Diagrydium prepared with a Quince and dulcified Mercury Sublimate, \bar{a} $\bar{\theta}$ j. the Extracts of Fumitory and Gentian, \bar{a} \bar{z} j. Mix and make Pills. The Dose is from \bar{z} fs. to $\bar{\theta}$ ij.

ARTIC. III. Of GAMBOGE.

Gummi Gutta, Gummi Guttæ, Gummi Gamandræ, Gummi de Gamandrâ, Cambodium, Cambogium, Gambogia, &c. Off. Gamboge is a concreted Juice, compounded of Gum and Resin, inflammable, dry, dense, hard, shining, opaque, of a yellowish Saffron-Colour, without Smell, and almost void of Taste; at least, when held in the Mouth it tastes only at first like Gum Arabick, but soon after it impresses a gentle Acrimony, and leaves behind it a certain Dryness. It comes to us in Cakes, or Rolls, from several eastern Countries, and also from some Provinces of *America*.

It was not known in *Europe* before the Year 1603, at which Time it was sent to *Clusius*, and afterwards by Degrees came into Use; though much more among Painters than Physicians. The best is pure, free from Sand, and other Dross, of a yellowish red or yellowish Saffron-Colour, readily takes Fire, and gives to Water, or the Spittle, a yellow Colour, or a Colour like Brimstone.

Authors were a long Time uncertain concerning the Origin of this Juice, and have formed very different Conjectures about it. To omit the rest, *Bontius* in particular, *De Medicinâ Indorum*, c. 9. says it is the Juice of a *Species* of the *Tithymalus* or *Esula Indica*; and this Opinion has mostly prevailed. But herein *Bontius* seems to have been misled by depending too much upon the Veracity of others, having never himself seen the Plant from which Gamboge is obtained; since we are now sufficiently assured that it is drawn from two large Trees, which are different *Species* of the *Carcapulli*.

The first is the *Carcapulli*, *Acostæ Histor. Aromat. cap. 46.* *Coddam-Pulli*, *Hort. Malabar. T. 1. 41.* *Ghoraka Cingalensibus dicta*, *Herman. not. ad Hort. Malabar.* The other is the *Carcapulli*, *Linschot: Carcapulli, de Bry: Kanna-Ghoraka, id est Ghoraka dulcis Cingalensibus, Herman. not. ad Hort. Malabar.* Both these Trees *Caspar Baubine* in his *Pinax* erroneously includes under one *Species*; for they differ not only in the Flower, but also in the Fruit, which in the first is as large as an Orange, and in the last no bigger than a Cherry, and of a much sweeter Taste. They grow in *Cambaia*, *China*, *Malabar*, and the Island of *Ceylon*.

Paul Herman, who saw the Gamboge procured from these Trees, says it flows from Incisions made in their Trunks, in the Form of a yellowish and somewhat milky Juice, which being inspissated by the Heat of the Sun to a due Consistence, is moulded by the Hands into large round Cakes, or cylindrical Rolls, and then is laid to dry: The Juice of the *Kanna-Ghoraka* or the *Carcapulli* with a small sweet Fruit is preferable to that of the other Tree, because it is milder.

Mr. Richer observed a Tree yielding Gamboge in some Parts of *America*, particularly in the Island of *Cayenne*, which he tells us is as big as an Oak-Tree.

Tree. Whether this be the same with either of those aforementioned, or of a distinct *Species*; I know not.

The *Indians* make use of Gamboge, dissolved in Linseed-Oil, as a Pigment, and when they are troubled with Costiveness of the Belly, they drink it together with the Oil, but never employ it otherwise as a Medicine. The Fruit of the *Coddam-pulli*, which has an acid sweet Taste, is carried dry out of *Malabar* into other Provinces. The Inhabitants use it in Food, and highly commend its medicinal Virtues. Among other good Qualities which Experience has discovered to belong to it, they find it peculiarly efficacious for stopping all Kinds of the *Fluor Albus*, especially when the Disorder has been contracted by too much Venery. That the Fruit should thus possess an astringent Virtue, and the Juice of the same Tree be violently cathartick, is indeed wonderful.

In a chymical *Analysis*, two Pounds of Gamboge yielded two Ounces and two Drachms of Liquor, which was somewhat turbid, subacid, and austere, and likewise in Taste and Smell had some Resemblance of bitter Almonds; three Ounces, one Drachm, and eighteen Grains of reddish Liquor, which was acid, austere, and pungent upon the Tongue; two Ounces, three Drachms, and six Grains of brown Liquor, both acid and urinous; four Ounces, two Drachms, and sixty Grains of transparent, fluid, brown Oil; one Ounce and four Drachms of thicker Oil, heavier than Water. The black, rare, and spongy Mass remaining in the Retort weighed nine Ounces and six Drachms; which being calcined in a Crucible for thirty eight Hours left one Ounce, five Drachms, and twenty four Grains of gray Ashes; from which were extracted, by Lixivation, twenty four Grains of fixt neutral Salt. The Loss of Parts in Distillation was six Ounces, four Drachms, and sixty Grains; and in Calcination eight Ounces and forty eight Grains. Gamboge

Gamboge readily takes Fire, and burns in a bright Flame, like a Refin, at the same Time emitting a copious Smoke. It dissolves in Spirit of Wine, but not entirely; for about a sixth Part remains undissolved, to wit, the Gum, which is easily soluble in hot Water, or in Oil of Tartar. It likewise dissolves in aqueous Menstruums into a whitish or yellowish Milk, but not perfectly; because the resinous Particles gradually concrete and fall to the Bottom of the Vessel, leaving the Water limpid. Whence it appears, that this Juice is a saline sulphureous, or resinous and gummous Concrete, consisting of a thin Sulphur, which communicates the Bitterness and Smell to the Phlegm arising first in Distillation; of a thick Sulphur, which is not raised and separated from the Earth, but by a strong open Fire; and of a tartarous Salt somewhat ammoniacal, which by the Means of Distillation is resolved partly into an acid, and partly into an urinous Salt. The aqueous Solution of Gamboge, by pouring to it Oil of Tartar *per deliquium*, or Lime-Water, acquires a red Colour like Blood, by Reason that the sulphureous Parts are expanded, as may be seen in a Dissolution of common Brimstone by a strong alkaline *Lixivium*.

I am of Opinion, that the purgative Virtue of this Drug is owing to its thinner sulphureous Substance, mixed in a certain Proportion with volatile Salts; forasmuch as these saline sulphureous Particles, being by the gastrick Juice set at Liberty and separated from the grosser and fixt Principles, vellicate the Membranes of the Stomach and Intestines, enter the Pores of the Nerves, and irritate them: Whence a Nausea, Vomiting, and Purgings.

Some have supposed this Juice to contain a large Quantity of alkaline Salt, because the Solution of it

it in Water mixed with Syrup of Violets takes a green Colour. But this Colour does not arise from the alkaline Salt contained in it, but from the Mixture of the yellow and the blue *Moleculæ*: Which Painters daily experience, by mixing yellow Powders with blue, and Philosophers, by joining yellow and blue Glasses.

Gamboge is reckoned among the stronger hydragogue Catharticks. It evacuates particularly ferous and thin bilious Humours, both upwards and downwards, suddenly, exerting its Operation almost as soon as taken, and without Uneasiness or Griping. On this Account it is frequently used in the Dropsy, Cachexy, Coughs, Difficulty of Breathing, Asthma, Jaundice, Catarrhs, Gout, Scab, and other Distempers of the like Nature.

Some Physicians were at first afraid of using this Medicine, by Reason of its Violence. Of this Number was *Horstius*, who in his Epistles, *Sect.* 9. says he thought it safer to abstain from it, lest he should make Experiments at the Cost of other Men's Torments: Yet afterwards, when he was appointed first Physician at *Ulm*, he began to have a more favourable Opinion of it, retracting in a great Measure what he had said before. Others have experienced its Use so successful, that they have not stuck to administer it freely, even to Children, to old, and consumptive People, and to pregnant Women: Among these was *Heckstetterus*, a Physician of *Augspurg*, who in the Space of nine Years prescribed to his Patients many Pounds of it. Indeed they who know how to give this Medicine under proper Cautions, and to time it well, find these Conveniences in it, that it has no Smell and but little Taste; that it may be taken in a small Dose, and performs its Operation speedily; that it powerfully dissolves viscid tenacious Humours in what Part of
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the Body soever they stagnate ; and expels such as are in the Stomach by Vomit, and the others plentifully by Stool.

The Doses of this Drug proposed by Authors are different. The *Americans*, according to *Monardus*, put an entire Piece of it, of the Bigness of a Walnut, or about zj. into zj. of some watery Liquor, and letting them stand together all Night in Maceration, strain off the Liquor in the Morning, and drink it. The Piece, it is true, is not entirely dissolved, yet this Dose would be too strong for us. The Constitutions of Men differ from one another, as Climates differ from Climates. The *Americans*, from the Robustness of their Constitutions, are more difficultly wrought upon by Catharticks. In these Climates Gamboge is prescribed from gr. ij. or vij. to gr. xv. at most, though *Clusius* extends the Dose to gr. xx. I have often given it from gr. ij. to iv. without occasioning any Vomiting. In some of my Patients gr. iv. have disordered the Stomach, though in few ; and these repeating the same Dose for many Days, never vomited after the first or second Time of taking it. From gr. v. to viij. or x. it purges both upwards and downwards, copiously and gently, without any Violence ; and when given in this Dose it wants no Corrector, especially if diluted and extended with a large Proportion of Liquor. If taken in the Form of a Bolus or Pills it is more apt to prove emetick, though seldom if joined with *Mercurius dulcis*.

However, as this Drug is liable to some Inconveniencies in its Effects in common with other strong Catharticks, to wit, to a Subversion of the Stomach, to Vomiting, and to a Superpurgation, the same Cautions ought to be observed in giving it, as in the Administration of other Catharticks and Emeticks.

Hechstetterus, to hinder it from proving emetick, and to render it more agreeable to the Stomach, adds to it Birch-Water with a few Drops of the Spirit of Vitriol: Others try to correct it with the Spirit of Vitriol alone; with Citron or Quince-Juice, the Fume of Brimstone, the Oil of Cinnamon, of Mace, &c. with Cinnamon-Water, or with Syrups and Salts. But these Corrections are ineffectual for preventing the Matter lodged in the Stomach from being thrown up. Besides, as I have already said, it wants no Corrector, provided that it be given in a due Dose, and sufficiently diluted. They who are naturally difficult and unaccustomed to Vomit, ought to abstain from its Use.

The Chymists procure from it a Resin and Magistery; but these elaborate Preparations are quite useles, for Reasons which I have before given in treating of other Purgatives.

Hechstetterus hath moreover observed that this Drug operates more by itself, than when mixed with other purging Medicines; and that it works but little in Pills, and very plentifully in Infusion.

Take of Gamboge gr. vij. dissolve them in ℥xij. of a Decoction of Barley, and by adding ℥ij. of the Syrup of Violets, make a green Potion, to be divided into two Doses, and taken in an *Anasarca*, and Congestion of ferous Humours.

Take of Gamboge gr. vj. common Water ℥vj. white Sugar ℥ss. and the expressed Juice of a Citron. Mix s. a. and make an hydragogue Potion.

Take of *Calabrian* Manna ℥ss. the distilled Water of Dwarf-Elder ℥vj. in the strained Solution dissolve gr. iv. of Gamboge, and add ℥ss. of Cinnamon Water, for a Potion.

Take

Take of *Calabrian* Manna ζ fs. Gamboge gr. vj. dissolve them in ζ vi. of Endive-Water; then adding of Spirit of Vitriol gutt. iij. and Citron-Water ζ fs. make a Potion.

Take of Gamboge gr. iv. Barley-Water, and the distilled Water of Orange-Flowers, \bar{a} ζ ij. white Sugar ζ fs. Mix and make a Draught.

Take of Gamboge gr. vij. *Mercurius dulcis* gr. x. Conserve of Roses q. f. Mix and make a Bolus to be given in the Scab, and cutaneous Affections.

Take of Gamboge gr. vi. the *Elæosaccharum* with the Oil of Cinnamon ζ ij. Make a Powder.

Take of Gamboge gr. x. Oil of Juniper gutt. ij. Mithridate q. f. to make Pills.

Take of powdered Jalap gr. xij. Gamboge gr. iv. Cream of Tartar ζ fs. Syrup of Buckthorn q. f. Mix and make them into a Bolus.

ARTIC. IV. Of OPIUM.

Opium et Meconium, Off. Ὀπίον et Μηκώνειον, Græc. *Affion et Amfion*, Arab. Opium is a concreted Juice, both resinous and gummous, heavy, dense, softish, inflammable, of a reddish brown Colour, with a Cast of Black, of a strong, soporiferous Smell, and a bitter, acrid Taste. It comes to us from *Natolia*, *Egypt*, and the *East Indies*, in roundish flat Cakes, about an Inch thick, weighing from half a Pound to a Pound, and covered with Poppy-Leaves.

The *Arabians* and the Shops have commended the *Thebaick* Opium, or that which was gathered about *Thebes* in *Egypt*, before what was got in other Places: But at this Time it is no longer distinguished. From what Place soever Opium comes to us, it is accounted good when it is pure, softish, growing pliable betwixt the Fingers, inflammable,
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of a brown Colour or inclining to Black, and of a strong, virose, stupefactive Smell. When it is dry and friable, or scorched, mixed with Sand, Gravel, or other Impurities, it is bad.

The Ancients distinguished two Sorts of Poppy-Juice. One was the Tear which issued from the wounded Heads of the cultivated Poppy, and was called Μηκῶν ὄπιος, and by the Physicians Ὀπίου. The other, termed Μηκῶνείου or Μηκῶνιου, was the inspissated Juice of the whole Plant extracted by bruising it. They reckoned *Meconium* much more inert than *Opium*. But at present we have only one Sort brought to us, under the Name of *Opium*, namely, the Juice which flows from Incisions in the Heads of the white Poppy; nor is any other Sort to be met with among the *Turks*, and Inhabitants of *Constantinople*, besides that which is brought to us in Cakes: Though the *Persians* distinguish the Juice issuing from the Heads into three Sorts, esteeming that which is first procured from them the best, as we shall mention below.

The Poppy from which this Juice is drawn is called *Papaver hortense semine albo, Sativum Dioscoridi, album Plinio*, C. B. P. 170. In many Provinces of the *Lesser Asia* it is sown in the Fields, as Wheat is here. When the Heads of the Plant are formed, some slight Incisions are made into them, and a milky Juice issues from the Wounds in Drops, which is left to thicken in the Sun, and then gathered. *Tournefort* says that the greater Quantity of *Opium* is extracted from the Heads by Contusion and Expression: But both *Bellonius* and *Kæmpfer* are silent upon this Method of procuring it.

In *Persia* *Opium* is gathered in the Beginning of Summer, when the Heads are come near to Maturity, by wounding them Cross-wise. The Knife which serves for this Business, having five Edges, makes

makes five parallel Wounds at once. The Juice flowing from these, is the next Day scraped off with a Spattle, and put into a small Vessel hung to the Waste. Then the other Side of the Heads are wounded to obtain the Juice, in the same Manner. The Juice of the first Gathering, called *Gobaar*, is accounted preferable, as it possesses a greater Virtue of appeasing the Brain. The Colour of it is white, or pale approaching to yellow, but being rendered drier by a longer Insolation it becomes brown. The Juice of the second Gathering, which is inferior as well in Price as in Virtue, has commonly an obscure or dark red Colour. Some make a third Incision, whereby they obtain a Juice of a very black Colour and little Virtue.

The Opium, when got together, is prepared, by moistening it with a little Water or Honey, and continually and strongly rubbing it about in a flat wooden Dish, with a thick wooden Spattle, till it acquires the Consistence, Tenacity and Brightness of a well elaborated Pitch. Afterwards it is moulded by the Hands into short Rolls, which, when exposed to Sale, are cut into Pieces for the Buyers with Shears.

Having been thus treated, the *Persians* call it *Theriaack malideh*, that is, *Treacle prepared by grinding*, or *Theriaack asiuun*, that is, *opiate Treacle*, to distinguish it from the *Treacle of Andromachus*, which they term *Theriaack faruuk*. For with these People Opium passes for the *γαλήνη*, *ιλάρη* and *εὐδία* of the Poets, (*viz.*) a Medicine producing *Tranquillity*, *Cheerfulness* and *Serenity*; which three Elogiums, we read, were formerly bestowed upon the theriacal Antidote of *Andromachus*.

The preparing of Opium as above described is usually performed by certain Hucksters, who sitting in the Market-Places and publick Streets are perpetually working their Arms about at this Employment.

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But this is not the only Method of preparing Opium. It is oftentimes mixed, not with Water, but with Honey alone, in so large a Proportion, as not only to keep it moist, but also to qualify its Bitterness. And this in particular is called *Bæhrs*.

The most remarkable Preparation consists of Nutmeg, Cardamom, Cinnamon, and Mace, reduced to a fine Powder and mixed with Opium. This is believed to be highly beneficial to the Heart and Brain. It is called *Polonia*, or, as others pronounce it, *Pholonia*, to wit, the *Philonium* of *Persia* or of *Mesue*. Some, omitting the Spices, make it into a Mass with Saffron and Ambergrease. Many prepare it, according to their own Fancies, at Home, for the Use of their Families.

Besides these Preparations, which are taken in the Form of Pills, *Kæmpfer* makes Mention of a Liquor, very famous among the *Persians*, called *Coconar*, which they drink in considerable Quantities.

Some prepare this Liquor by boiling Poppy-Leaves a short Time in Water; others, by infusing the bruised Heads in Water, or by laying them in a Strainer, and pouring and returning the Water upon them seven or eight Times, which they afterwards make agreeable to their own Tastes, by mixing with it several Things, at Pleasure.

Kæmpfer likewise adds a third Kind of Opiate, which he names *Electuarium lætificans* and *lætificando inebrians*, from its occasioning a mirthful Drunkenness. This Electuary, whereof the Basis is Opium, is variously compounded by the Physicians and trading People, different Ingredients being added to strengthen and exhilarate the Spirits. Wherefore there are many different Descriptions of it extant; but one in particular, for which we are indebted to *Hafjem-begi*, is the chief and most celebrated; be-

cause it is said to excite in the Mind of the Person who eats it a wonderful Joy and Gladness, and to fill the Brain with delightful, and transporting Ideas.

Some moreover pickle the tender Heads of the Poppy with Vinegar, and use them in second Courses at Table.

In a chymical *Analysis* of the white Poppy, five Pounds of the green Leaves with the Stalks yielded first one Pound, six Ounces, six Drachms and three Grains of transparent, yellowish, subacid Phlegm, of an ungrateful Taste, and a virose, narcotick Smell, like that of the Leaves when bruised; afterwards, two Pounds, fifteen Ounces and one Drachm of transparent, reddish Liquor, intensely acid, austere, and of an empyreumatick Scent; one Ounce, one Drachm and fifty four Grains of a dark brown Liquor, alkaline urinous, with a little volatile Salt; and lastly, one Ounce, two Drachms and sixty six Grains of thick Oil. The black Mass remaining in the Retort weighed four Ounces and three Drachms: Which being calcined in a reverberatory Fire left one Ounce, three Drachms and forty eight Grains of Ashes; from which were extracted, by Lixiviation, four Drachms and sixty Grains of fixt Salt merely alkaline. The Loss of Parts in Distillation was three Ounces, one Drachm and twenty one Grains; in Calcination, two Ounces, seven Drachms and twenty four Grains.

From two Pounds, fifteen Ounces, of the Heads of the white Poppy, fresh and not quite ripe, were first obtained eleven Ounces, seven Drachms, and forty two Grains of limpid subacid Phlegm of an ungrateful Taste, and a virose Smell, like that of the Leaves of the Plant when bruised; then, one Pound, thirteen Ounces, one Drachm, and eleven Grains of Liquor, which at first was limpid, but

towards the End reddish, of an acid, austere Taste, and an empyreumatick Scent; and lastly, three Drachms and twenty four Grains of dark reddish, or brown, alkaline urinous Liquor, with a little urinous Salt. The black Mass remaining in the Retort weighed two Ounces, thirty six Grains; which being calcined in a reverberatory Fire left three Drachms and fifty one Grains of Ashes; from which were extracted, by Lixiviation, one Drachm and eighteen Grains of fixt Salt merely alkaline. The Loss in Distillation was four Ounces, six Drachms and seven Grains; and in Calcination, one Ounce, four Drachms and fifty seven Grains*.

From these *Analyses* it is evident, that these Parts of the Poppy consist of a tartarous and ammoniacal Salt united, and a very thick Oil; and that in the Heads is contained a larger Quantity of Earth, than in the Leaves and Stalks.

Two Pounds of pure Opium, by a chymical Treatment, afforded twelve Ounces, two Drachms of Liquor, both acid and urinous; and two Ounces and three Drachms of thick Oil. The *Caput mortuum* remaining in the Retort weighed fifteen Ounces and four Drachms. This being calcined in a reverberatory Fire left two Ounces and sixty Grains of Ashes; from which were drawn, by Lixiviation, four Drachms and forty five Grains of fixt Salt merely alkaline. The Loss in Distillation was one

* It appears, upon Calculation, that my Author has made a Mistake in setting down some of the Quantities abovementioned; and besides, from what follows, we may conclude that he has forgot to insert the thick Oil, which here deserves our particular Notice. The Reader may perhaps find a few Oversights of the same Nature in other Places, but as they are not very material, and it would be impossible to rectify them, I have not thought it worth while to take upon me the Trouble of pointing them out.

Ounce and seven Drachms; and in Calcination, thirteen Ounces, three Drachms and twelve Grains.

There is, therefore, a larger Proportion of volatile urinous Salt in Opium, than in the Leaves of the Poppy, or the Heads. But not only an alkaline urinous Salt is found in Opium, as *Pitcairn* imagined, but likewise an acid Salt, and even a powerful one: Which is proved both by its *Analysis*, and also by pouring its Solution to the Tincture of Turnsole; for it changes the Colour of this Tincture into a fiery red.

From the acid and the alkaline Salt, in Combination with the Oil, arises a resinous and gummous Compound, which is inflammable in the Fire, whereof the greater Part dissolves in Water, and a moderate Portion in Spirit of Wine. The thick Sulphur, contained in Opium, is capable of the greatest Rarefaction, as is apparent from the strong Smell of Opium dispersed in the Distillations: And to this condensed, and rarefiable Sulphur, I am of Opinion, that its Virtues are owing, as I shall below endeavour to demonstrate.

All Authors are not agreed upon the Qualities of Opium. Some considering, that when given in the Quantity of a few Grains it oppresses the Head, causes Sleep, obtunds the Sense of Pain, stops Respiration, and puts an End to Life in Sleep, have pronounced it not only *cold*, but have asserted it to be so in the *fourth Degree*. Others, attending to its bitter, acrid and caustick Taste, have determined it to be *hot*. Nor are they less divided upon its Virtues. Some, accusing it of a narcotick Virulency, have entirely rejected its Use. Others put the highest Value upon it, and honour it with many Titles and Elogiums. Many of the ancient *Greeks*, according to *Dioscorides*, were afraid of using it, either internally, or externally. “ We are
I “ seldom

“ seldom obliged, says *Galen*, l. 2. *On the Composition of Medicines secundum locos*, (speaking of the Head-Ache) “ to make Use of Medicines composed of Opium ; never but when the Life of a Person is indangered from the Violence of Pain ; and then they injure the solid Parts, so that Correctives are afterwards required. Thus Collyriums made of Opium have been detrimental to many, by weakening the Eye, and rendering the Sight dim ; as also Applications of it to the Ears, against Pain, occasion Hardness of Hearing. For all Medicines composed of the Poppy-Juice are stupefactive and benumb the Sense ; and on this Account we are obliged to have Recourse to them, when no other Remedy is found capable of mitigating the Disorder.”

Many of the Ancients, and of the Moderns also have followed *Galen*. Among these are *Fernelius*, *Matthiolus*, *Ruellius*, *Tabernæmontanus*, *Rhodius*, *Renodæus*, *Zacutus Lusitanus*, *Quercetanus*, *Schroder*, &c. Nevertheless, *Dioscorides* was not so much afraid of its Use. “ Opium, says he, taken to the Size of a Vetch produces a Cessation of Pain, concocts, and procures Sleep ; is serviceable against Coughing, and the coeliack Flux : But if taken overplentifully it is noxious, since it brings on a Lethargy, which ends in Death. Being mixed with the Oil of Roses it is efficacious against the Head-Ache ; and with the Oil of Almonds, Myrrh and Saffron, it is dropped into the Ears, when affected with Pain. It is useful in Inflammations of the Eyes, with the roasted Yolk of an Egg. For *St. Anthony's Fire*, and for Wounds, it is mixed with Vinegar ; and for the Gout, with Woman's Milk and Saffron. If used by Way of Suppository it causes Sleep.”

Among the Moderns *Felix Platerus* introduced again

the Use of Opium, when it had been a long Time neglected; and, as he says, almost trampled under Foot. *Sylvius de la Boe* followed the Sentiments of *Platerus*, and declared, that if it were not for Opium he would never practise Physick; and for this Reason he was called the *opiate Doctor*.

But in Order more clearly to discover the Nature and Virtues of Opium, we shall consider what are the Effects of it when taken in a moderate Dose, how People are affected by an over-large Dose, and lastly, what Symptoms are produced by using it too long.

It is used either externally or internally. Externally it incises, resolves and discusses Tumours. It softens and relaxes; ripens and promotes Suppuration. By lying long upon the Skin it takes off the Hair, excites an Itching, and if it be fresh, and the Texture of the Skin be tender, it raises Vesicles. Applied upon the *Perinæum* it sometimes provokes Lust; and sometimes extinguishes the same, by stupefying the Sense of the Parts. By an outward Application it often procures Sleep, and eases Pain, though these Effects are very uncertain. Being put upon the Sutures of the Head it sometimes kills: For it relaxes the Nerves, and brings on a Stupor, and Palsy.

Internally, the Dose of Opium seldom exceeds gr. ij. or iij. though sometimes it is extended to zj. or more. It is given either in Pills, or dissolved in some Liquor. It exerts its Operation in a short Time after it is taken; to wit, in about half an Hour if dissolved, and if taken in a solid Form, in about an Hour and half.

When given in a due Dose it produces a certain pleasing Sensation in the Breast and Stomach, and disposes the Mind to Chearfulness, like Wine moderately

moderately drank. It dissipates Cares and Sadness, and oftentimes renders the Mind more alert in the Performance of its Offices; whence, for the most Part, succeed Boldness, Self-Confidence, Fortitude, Magnanimity, and Contempt of Dangers. It is for this Reason that the *Turks* take a large Dose of Opium before they engage in Battle. It calms the inordinate Motions of the Blood and Spirits, asswages Pains, alleviates the Fatigues of the Body, stops Hemorrhages arising from an Effervescence of the Blood, and checks, at least for a Time, all other Evacuations, except Sweat and insensible Perspiration, which it promotes. It makes the Pulse great, high, and slow; occasions Dryness of the Mouth, and in the Skin redness and a slight Itching; increases the Seed, and stimulates the venereal Appetite, especially if drank in a large Dose. It takes more Effect in a warm and moist Season, and in Bodies of a lax Texture, as in Women and Children.

There are other Effects of Opium in a proper Dose, which frequently follow, though not constantly. Thus, it often causes Sleep, but not always; for some after taking it sleep less. For the most Part it raises agreeable Dreams or Imaginations. It quiets Vomiting, and the Hiccup, and sometimes excites them; as also Spasms and convulsive Motions. It retards the Concoction of Food in the Stomach, and lessens the Appetite; sometimes promotes the monthly Purgations of Women, and those after Delivery, when suppressed by an Erethism and Convulsion of the Fibres; sometimes helps the Exclusion of the *Placenta*; is often conducive to the Expulsion of Gravel and Stones; provokes Sweat; stays some Hemorrhages; augments the Milk of Nurses; and occasions sometimes an Intumescence of the Breasts, Erection of

the *Penis*, wanton Dreams, and nocturnal Pollutions, Redness and Itching of the Skin, and a Flux or sometimes a Suppression of Urine.

There are besides other Effects less frequent, namely, slight Palsies of a short Duration, especially of the Bladder, a Stammering in the Speech, a Relaxation of the lower Jaw, a Suppression of Sweat, a Looseness, an Evacuation of the Water in Dropsies, (as *Willis* hath observed) the Cure of a Numbness of the Limbs occasioned by Cold, Suffocations, Anxiety about the Breast, Hickups, Vomiting, Spasmodick Motions, Swooning, and sometimes Death; yet this very rarely happens, and never but in Bodies either extremely plethorick, or extremely weakened and emaciated; Wherefore, after great Hemorrhages, and all excessive Evacuations, the Use of Opium is dangerous. On the contrary, some Persons reduced to Extremity, or (as I may say) half dead, are observed to recover Strength surprisingly by taking it. Moreover, sometimes Opium lies a considerable Time in the Stomach without Effect, being involved in thick Humours.

When the Narcotick ceases to act, these Things commonly follow, (*viz.*) a Return of the Disorders and Pains which it had quieted, and often worse than before, unless their Cause have been carried off by Sweat or some other Means; a Sweating, though this does not always succeed; a frequent making of Water; sometimes a Looseness of the Belly, Dejection of the Spirits, and Sadness; a languid and depressed Pulse, and Itching of the Skin.

An over-large Dose of Opium is followed by much the same Affections, as are usually produced by the swilling a large Quantity of Wine; to wit, Cheerfulness, immoderate Laughter, Relaxation,
and

and Debility of the Limbs, Raving, Defect of Memory, Giddiness, Dimness of the Eyes, Laxness of the corneous Coat, Dilatation of the Pupil, a Faultering in the Speech, and heavy Drowsiness, with a great and slow Pulse; a Redness of the Face, Hanging of the Jaw, Intumescence of the Lips, Difficulty of Breathing, Fury, Heat of the Stomach, and sometimes Oppression; Lust, with a Priapism; Heat of the Skin, and Itching; a *Nausea*, Vomiting, and Hiccups; an unequal Pulse, sometimes low, sometimes high; Convulsions, cold Sweats, Swooning, and Death. All these Symptoms do not attack all People, nor with equal Violence, but some more, some less, according to the different Constitution of the Body, the different Dose of the Opium, and other Circumstances.

They who escape Death, recover, for the most Part, by a very copious Flux of the Belly, or by plentiful Sweats, smelling of Opium, and attended with great Itching of the Skin. It is to be observed that a Flux of the Belly is the more secure Means of Recovery; that they are in most Danger who have a weak Stomach, and a lax Texture of the Skin; and that such as are furious escape Death more easily, than such as are stupid and comatose.

The immoderate and long continued Use of Opium produces a Relaxation and Debility of all the Parts, an Indolence, Languor, Sloth, Listlessness to Labour, and Sluggishness of the Body, with a Dulness or Stupidity of the Mind, such as is observable in Drunkards, except at the Time when a fresh Quantity of Opium lies digesting in the Stomach. It likewise produces a Want of Appetite, a difficult and slow Concoction, a Dropsy, a Diminution of Sense and Motion, an Incurvation of the Body, a Trembling of the Limbs, an un-

timely

timely old Age, an Acrimony and depraved *Craſis* of the Blood, a frequent Inclination to make Water, a Propenſity to venereal Acts, a Priapiſm, and frequent Emiſſions of the Seed in Sleep.

They who have been long accuſtomed to an immoderate Uſe of Opium, and leave it off on a Sudden, are affected with theſe Symptoms, in a greater or leſſer Degree, according to the Difference of Conſtitution, or of the Exceſs in its Uſe; to wit, with a deep and inſupportable Sadneſs, with Anxiety, Languidneſs, and Faintings; by which the poor ſick Perſon is miſerably tormented, and reduced to Extremity, and even ſometimes to Death more deſirable to him than Life, unleſs he return to the Uſe of Opium, or of Wine; though the Force of this is not to be compared to that of Opium. Moreover, with theſe Affections the old Complaints, which had been palliated by the Narcotick, often return with greater Violence.

Having enumerated the chief Effects of Opium, we ſhall now attempt to explain the Manner in which it operates. The abovementioned Effects then of Opium ſeem to proceed from its remarkable Action in the Blood, which it wonderfully diſſolves, expands, and rarefies. Hence ariſe ſo many different, or oftentimes contrary *Phænomena*. The Diſſolution and Rarefaction of the Blood are proved by the Pulse, which is great, high, yet ſoft and ſlow; by the Tumefaction of the Face with Redneſs; by the Heat diffuſed over the whole Body; and by the Fluidity of the Blood of Perſons who conſtantly uſe Opium: For it ſcarce concretes when cold. And it hath been obſerved, that the Blood of *Turks* and *Indians*, who have fallen in Battle, has continued as fluid one or two Days after their Death, as if they had been ſlain but the Inſtant before.

The Blood thus expanded, distends the Arteries of the whole Body; and the Effects and Appearances are various, according to the different Bowels in which this sudden Rarefaction is produced. As soon as the Blood circulating through the Brain is rarefied, the small Arteries, being distended and possessing a larger Space, compress the nervous Canals interwoven with them, more or less, according to their greater or lesser Dilatation. The Nerves being too much compressed, a smaller Quantity of the nervous Juice enters into them and flows to the Parts: Whence the Functions of the Body are not so well performed, the Arteries vibrate more slowly, though from the rarefied Blood they are more than usually distended; and therefore the Pulse is high, but less frequent. A preternatural Heat is raised over the whole Body, because the circulatory or progressive Motion of the Blood being diminished, with an Increase of Fluidity, its intestine or fermentative Motion, upon which the Heat depends, is augmented. From the Decrease of the Afflux of the nervous Juice to the Parts, and of its Reflex from the Parts to the Brain, proceed a Numbness of the Limbs, a Diminution of Sense, and of Motion. A Sleep is likewise brought on more or less deep, as the Nerves, or the Origins of the Nerves appointed for the Performance of the animal Functions, are more or less compressed by the Arteries. Lastly, Death sometimes follows, if from too great and sudden an Intumescence of the Arteries, most of the nervous Fibres of the Brain are so far straitened, that their Juice can no longer pass through them. It is entirely after the same Manner that Opium eases Pain: Not that it removes the Cause of Pain; but because, by hindering the Influx of the nervous Juice into the Nerves, it prevents the Arrival of the painful Sensation, from the Part affected, at the Origin of the Nerves or the Soul.

From

From a Deficiency of the nervous Juice or animal Spirits, the Secretions and Excretions are lessened, or wholly suppressed; which is particularly observable in the Liver and Kidneys. Moreover, the same happens in these Bowels as in the Brain; namely, by the Arteries distended beyond Measure, the excretory Vessels of the Bile and Urine are compressed, and the Excretion of these Humours is stopt. The Perspiration alone remains perfect after the taking of Opium, and even acquires Strength from it; since there are no secretory Vessels appointed for Perspiration: But the perspirable Matter seeks to itself an Exit from all the Vessels through the Pores of their Membranes; and by Opium the Membranes are extended, and the Pores dilated. A Sweat likewise sometimes succeeds, because the sudoriferous Ducts, being placed at the Extremities of the Vessels in the Skin, are not surrounded by small Arteries or other dilatable Vessels, which by pressing upon them may hinder this Evacuation.

Some Evacuations indeed, when suppressed, are sometimes restored by the Use of Opium; to wit, if that Suppression arise from a violent Irritation of the nervous Membranes, so that, by the continual and abundant Afflux of the animal Spirits, the Fibres are strongly drawn up and convulsed. This Afflux of the animal Spirits being restrained or diminished, the nervous Fibres are relaxed, and the suppressed Evacuations are restored, at least for some Time. Thus the Flux of the *Menses* and *Lochia*, the Exclusion of the Secundine, the Excretion of Stones from the Kidneys, a Purgation, *Diuresis*, or other Evacuations, are sometimes promoted by Opium: And after the same Manner it usually calms the spasmodick Motions of hysterical Women, or of Hypochondriacks.

They who use opiate Medicines for a long Time, often find that the same Dose which in the Beginning was sufficient to induce Sleep, after some Time becomes ineffectual; and that a larger Dose is required, or also, to have the desired Effect, that it must be daily augmented. Now this happens, because the Blood, by the first Doses of the Medicine, acquires a certain Degree of Fluidity, which the same Dose is not able to increase. For the superfluous Recrements of the Blood having been cast off by Sweat or by Perspiration, the Bulk of the Blood is diminished, so that it does not afterwards distend the Arteries sufficiently to compress the Nerves and cause Sleep. To swell the Arteries to an equal Amplitude a greater Quantity of Opium is required, whereby the Mass of Blood may be further dissolved and rarefied; and so more and more, until it hath acquired the utmost Degree of Fluidity possible: And then larger Doses of Opium, reiterated and increased, are no longer able to procure Sleep.

Here it may be demanded, what are the Principles, by which Opium produces this remarkable Dissolution and Expansion of the Blood? To which I answer, that Opium is compounded of Salts, both acid and alkaline-urinous, and of a thick Sulphur greatly condensed, but capable of the greatest Divisibility and Expansion: And I think, that its soporiferous Virtue is not owing so much to the Salts as to the Sulphur; since we observe, that Bodies replete with a Sulphur of the like Sort occasion Sleep, as Saffron, Nutmeg, Castor, &c.

Now, Opium and the soporiferous Aromatics, when taken into the Stomach, are dissolved by its fermentative Liquor, and put into Fermentation. Their narcotick Sulphurs half expanded by this Fermentation are carried to the Mass of Blood; where

where they not only preserve the fermentative Motion received in the Stomach, but are also thrown into a greater Motion by the spirituous Parts of the Blood: They are then mingled with the sulphureous Parts of the Blood, which they draw into Fermentation with themselves, and divide and attenuate; and thus dissolve and rarefy the whole Mass: Whence Drowsiness and Sleep. Nor does Opium operate before its divided Sulphur arrives at the Blood. It is true, that a certain grateful Sensation of Warmth is perceived in the Stomach in a short Time after taking Opium, from the gentle Titillation of its saline-oily Parts which are set at Liberty by the gastrick Juice; but Sleep does not come on till Half an Hour, or an Hour after; which is the Time required for the Conveyance of the sulphureous Particles of the Opium to the Mass of Blood.

If it happen that the Particles of Opium are retained too long in the Stomach, or taken in too great a Quantity; then, from the over-strong Titillation and Irritation of the nervous Fibres of the Stomach proceeds a Nausea, Hickup, or Vomiting.

From these Things duly considered, the *Rationale* of the other Effects of Opium will be sufficiently clear. I shall therefore no longer dwell upon their Explanation.

When Opium hath been taken in too large a Dose, and the grievous Symptoms occasioned thereby threaten Death, the Cure ought to be attempted, first by Blood-letting, and in the next Place by an Emetick. By *this* not only the Remains of the Opium in the Stomach are thrown up, but also by the Efforts of Vomiting the nervous Membranes are shook, and by those Succussions the intercepted Afflux of the Spirits to the Parts is restored.

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By *that* the Blood-Vessels, distended beyond Measure, are evacuated and reduced to their usual Diameter. As to both these Means of Cure, we must be particularly cautious that the Patient have still Strength enough to bear them; otherwise perhaps the Remedy might be worse than the Disease. Afterwards, acid Draughts are to be given, made of the Juices of Citrons, Oranges, Currants, Vinegar, Spirit of Sulphur, or Vitriol: For they hinder the Expansion of the Sulphurs, restrain their Force, and thicken the rarefied Blood. Acrid stimulating Clysters are to be injected, Powders blown up the Nostrils made of Pellitory or Euphorbium, and volatile Salts may be taken inwardly. Blistering Plaisters and Sinapisms are advantageously applied to the Neck and the Soles of the Feet; also Cupping Glassess, Scarifications, Burnings, painful Frictions, &c. are used with Success. For by these stimulating Remedies the nervous Membranes are strongly vellicated, the Spirits are derived more abundantly to the Parts, which thence recover their Tone, the Fluids of the renal Ducts, being more forcibly pressed, break forth where they find a Passage, and the Secretions and Excretions are restored.

With Regard to the Operation of Blistering Plaisters in the Deliriums occasioned by Opium, *Alexander Thomson*, an *English* Physician, in his *Medical Dissertations on Opium*, observes, that when the Patient, during the first Operation of the Plaister, complains of a Coldness falling from the fore Part of his Head down his Neck, he is immediately freed from the Delirium. This, certainly, is a great Argument that the Brain, by Means of the *Stimulus* communicated from the Plaister to its nervous *Compages*, is unloaded of a superfluous Quantity of Liquid: Whence a Solution of the Delirium.

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The Ancients, who believed that Opium was excessively cold, endeavoured to correct it by hot Medicines, and such as dissolve the Blood when coagulated. Hence the *Theriaca*, *Mithridate*, *Philonium*, and other opiate Compositions. The Moderns have established different Methods of qualifying Opium, according to their different Opinions concerning it. Some correct its narcotick Force with Castor and Saffron; others with Vinegar, Citron-Juice, Spirit of Vitriol or Sulphur, and the like acid Liquors; others with alkaline Salts, both fixt and volatile; others with Spirit of Wine, Brandy, Wine, or other fermented Liquors; others by Fermentation; others, again, by Torrefaction. But since Opium is not prescribed but to ease Pains, and to induce Sleep, they vainly try to correct the Virtue by which it should produce these Effects. They act contrary to themselves. They want a Medicine to cause Sleep, and are afraid of it: They give it for that Purpose, and endeavour, as much as they can, to deprive it of its soporiferous Virtue. There is no Poison contained in Opium, this Virtue excepted: It therefore requires no Correction. It needs only to be cleansed from the Dross, Earth, Gravel and other Impurities; and nothing is to be feared from it, provided that it be properly given, and in a due Dose.

It is purified from its Dross, or (as they say) is prepared, by dissolving it in some proper Liquor and straining it. The strained Liquor is often put by, and given in Drops under the Name of the *Tincture of Opium*, or *Liquid Laudanum*. Sometimes the Liquor is evaporated to the Consistence of a solid Extract, and given in the Form of Pills, or in Powder.

As in Opium there are two Substances, the one gummous and the other resinous, it is not equally soluble

soluble in all Liquors. In aqueous Liquors the Gum only dissolves; in Spirit of Wine only the Resin. In Wine, in Vinegar, or in Brandy, both Substances dissolve together. From this Diversity of Menstruums arise different Tinctures of Opium, that is to say, different not only in their Nature, but in their Effects also. For the Tincture of Opium extracted by Spirit of Wine, by the general Consent, is more intensely narcotick, affects the Head more violently, and often causes Deliriousness, as I many Times observed in a certain hypochondriacal Person, who was troubled with Wakefulness, and when he took the Tincture of Opium prepared with Water, he slept with great Tranquillity; but, on the contrary, when he took the Tincture drawn with Spirit of Wine, he was surprisingly affected with a Phrensy.

The Tincture of Opium prepared with Vinegar sometimes suppresses the Urine, according to the Observation of *James le Mort*, a skilful Physician and Chymist. That made with alkaline Salts is of little Service for procuring Sleep; because the Salts, vellicating the nervous Membranes by their Acrimony, shake off the Drowsiness brought on by the Opium. It is true, that the Tincture of Opium joined with volatile urinous Salts provokes Sweat, and thus prepared is convenient in some Affections. But I think, with the learned *Wedelius*, and the skilful Physician and Chymist abovementioned, that the Preparation of Opium with Water is the safest, and the most efficacious of all others. For nothing can be feared from this Menstruum; and Opium thus prepared is not only purified from its heterogeneous Parts, but is also deprived of its Resin, which some Physicians are afraid of. *John Jones*, a Physician of *London*, in a Treatise intitled, *The Mysteries of Opium revealed*, puts so high a Value

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upon this simple Tincture, that he dignifies it with the Title of *Panacea*. Indeed, since it appears that Opium is neither cold, nor coagulates the Blood, as the Ancients believed, what Need is there of so many hot and aromattick Substances wherewith it is usually mixed? Are they intended to assist its Virtue? But I ask, what Assistance can Opium receive from Saffron, Castor, and other Aromatticks, which are vastly inferior to it, either for inducing Sleep, or for provoking Sweat? Some, however, admit these Aromatticks into opiate Compositions for other Reasons; namely, to correct the virose Smell of the Opium, or to extend it more, that it may be distributed into smaller Doses. Upon the same Account likewise *Sydenham* prefers liquid Opium to the dry Extract, a Grain of Opium when dissolved being more easily divided into fifteen or twenty Drops, than into so many Parts in the dry Extract.

The Purgation, or Preparation, of Opium with Water is performed thus.

Take of Opium cut small q. v. dissolve it in q. f. of clear distilled Water by digesting in B. A. Separate the Solution from the Residue, and when it is cold filtre it through Paper. Pour a fresh Quantity of Water to the Residue, digest, separate from the *Fæces* and filtre as before; and thus reiterate the Affusions, &c. till no Tincture is obtained. Then evaporate all the Solutions together in B. M. to the Consistence of a solid Extract. The Dose is from a Quarter of a Grain to gr. j. or ij.

When a liquid Opium is required, one Grain of this Extract may be dissolved in q. v. of any suitable Water, and be given in several Draughts at Discretion.

The Tincture of Opium with Water soon contracts a Mouldiness; and therefore if a liquid Laudanum is to be kept a long Time, the Tincture is prepared either with Wine or with Brandy: Whence two Preparations of Opium in general Use at *Paris*, (*viz.*) the *liquid Laudanum* of *Sydenham*, and the *anodyne Drops* of *Tabor*. To make the *liquid Laudanum* of *Sydenham*.

Take of Opium in thin Slices ζij . Saffron cut small ζj . Cinnamon and Cloves bruised, $\bar{a} \zeta j$. Canary Wine ζxvj . Let them stand together in Digestion in B. M. for two or three Days; then strain off the Wine, and keep it for Use.

The *anodyne Drops* of *Tabor* are prepared thus.

Take of Opium in Slices ζiss . Saffafras-Bark ζfs . the Root of Affarabacca ζfs . Brandy $\text{℥} j$. Let them digest in the Heat of the Sun in a close Vessel for nine Days, and put the strained Liquor by for Use. The Dose is from gutt. iv. to xv. or xx.

Prepared Opium is called in the Shops *Laudanum*. This Name was first given it by *Paracelsus* from the Word *Laudandum*, as being a *Medicine which deserves Praise*.

Some propose the Torrefaction of Opium as a Means to destroy its narcotick Virulency. The Force of Opium when torrefied is without Doubt abated, though not, as they say, by Reason of the Exhalation of its narcotick Sulphur, but because many Particles of the Opium have been destroyed and burnt to Coals. Wherefore this Correction seems quite useles.

Others endeavour to divide and attenuate the thick Sulphur of Opium by Fermentation. In Effect,

fect, when it has been fermented, it is not so stupefactive and soporiferous, but rather promotes Perspiration and Sweat, after the Manner of Aromaticks, by agitating the Blood and the Humours. The Fermentation is managed thus.

Take of Opium ℥j. dissolve it in ℥iij. of common Water. Then,

Take of the best Honey ℥iij. which likewise dissolve in ℥xij. of common Water.

Mix the two Solutions in a proper Vessel, and set them in a warm Stove to ferment. When the fermenting Liquor exhales a vinous Smell, draw off its Spirit by Distillation, having first separated the Froth and *Fæces*. Strain the Liquor left in the Retort, and evaporate it to the Consistence of an Extract; which dissolve in the Spirituous Liquor before drawn from it, and reducing the Tincture to the Consistence of a thin Syrup keep it for Use.

This Tincture may doubtless be given in larger Doses than the common Tinctures of Opium; but otherwise little Advantage is gained by this operose Preparation. Nor is that of *Helmont*, with the Juice of Quinces, more useful. It is as follows.

Take of the Juice of Quinces newly expressed ℥x. of Opium cut into thin Slices ℥j. Let them stand together in a gentle Heat to ferment for two or three Weeks. Afterwards pour the Liquor off clear from the *Fæces*, and add to it of Cinnamon ℥iij. Cloves, Mace, Nutmeg, and the lesser Cardamom, ā ℥j. the lesser Galangal ℥iss. Digest them together for two or three Days. Then filtre the Liquor through Paper and evaporate it to the Consistence of a solid Extract.

Some take off the virose Smell of Opium by long Digestions, and repeated Dissolutions and Distillations, and by this Method they think to deprive it of its narcotick Sulphur. The Process may be conducted thus.

Take of Opium q. v. dissolve it in q. f. of common Water, and filtre the Solution through Paper. Let it stand in Digestion for eight Days in B. A. and afterwards distil it from a Glass-Alembick with a gentle Fire to the Consistence of Honey. To this mellaginous Extract pour more Water, digest for eight Days, and distil again to the same Consistence. Repeat the Affusions, Digestions and Distillations, till both the Water and the Residue are void of Smell. Then lastly, dissolve the Residue in a fresh Quantity of Water, strain, and evaporate it to the Consistence of a solid Extract; which is so weak that it may be given with Safety from gr. iij. to x.

By these repeated Digestions and Distillations the Sulphurs are divided and attenuated, and fly off with the volatile saline Parts. Whence the terrestrial *Moleculæ* remain almost inert with the grosser Sulphurs and Salts. We therefore think this Preparation can answer no extraordinary Purposes.

Having mentioned the usual Preparations of Opium, we shall now lay down some Rules and Cautions concerning its Use.

1. The Tincture and Extract of Opium, drawn with aqueous Menstruums, are preferable to all other Preparations.

2. The Tinctures and resinous Extracts of Opium drawn with Spirit of Wine ought to be rejected. For they are more intensely narcotick; they op-

press the Head, and inflame the Blood and Spirits; they sometimes also adhere to the Membranes of the Stomach, and occasion Oppressions, Nauseas, Hick-ups, and Vomitings.

3. The Preparations of Opium with Acids, which obtund and destroy its Force, are useles. Those with volatile Salts, which by their Acrimony hinder Sleep, are accounted no better, unless intended to promote Sweat; for then the Salts are serviceable. Those also with fixt Alkalies, though they provoke Urine, greatly diminish the soporiferous Virtue of the Opium.

4. In the Form of Pills the Operation of Opium is slow and uncertain. It is more advantageously given in a Bolus, sufficiently extended with other Powders, or dissolved in some proper Liquor: For it operates sooner, and agrees better with the Stomach.

5. It ought never to be given when the Stomach is full of Food. Wherefore, after solid Food an Interval of four Hours is necessary, and after Broth, at least, two Hours. Neither are solid Aliments to be taken till the Opium has finished its Operation; nor Broth, unless upon urgent Necessity, and only three Hours after the Narcotick.

6. It ought not to be given during the Flux of the *Menses*, the Child-bed Purgations, periodical Hemorrhages, or critical Evacuations. Nor ought it to be given without Caution after any large Evacuation whatsoever, lest from a Deficiency of Spirits, the Patient, already too prone to Sleep, should be thrown into too long, or perhaps an eternal sleep, or into a Palsy.

7. It must be given with the greatest Caution to Men of weakly Constitutions, of a lax Texture of Body, or weakened by long Diseases, to Children, pregnant Women, and old People, to such as have a weak Stomach and bad Digestion, and to such al-

so as are extremely plethorick, for perhaps, from the sudden Rarefaction of the Blood, a deadly Sleep, or an Hemorrhage, may come on. It ought seldom to be given in acute Diseases, especially such as are inflammatory, for Fear lest the apparent Abatement of the Disease should deceive both the Physician and the Patient.

8. Its Use ought to be sometimes interrupted, otherwise it will become entirely ineffectual, or hurtful.

9. The Indications for giving Opium are principally three; namely, great Wakefulness, sharp Pain of long Continuance, and enormous Vomiting or Purging.

10. *Sydenham* likewise adds great Disorders of the animal Spirits: Whence it sometimes affords much Relief in spasmodick Affections of the Nerves, and in hysteric Fits.

11. To this Virtue is chiefly owing the Faculty which is found in Opium of promoting some Evacuations, when suppressed by a convulsive Affection of the Nerves. Thus *Sydenham*, in his *Epistle to Cole*, p. 488. to restore the Purgations of Child-bed Women, when other Remedies have been tried in vain, proposes Laudanum. “In this Case (says he) Laudanum, though it be in its own Nature astringent, yet as it calms the Perturbation of the Spirits, whereby the wonted Evacuation of the *Lochia* had been interrupted, it sometimes proves very beneficial, and, when Emmenagogues are of no Service, is able to recal the Flux. It is however to be well observed (continues the same Author) if we miss our Aim with the first Dose, and the Flux does not succeed, that Opium is by no Means to be repeated.”

12. Many Physicians highly extol Opium in all Diseases, whether chronical or acute, not only as a

foporiferous Medicine, but as an extraordinary Alterative. But they who shall attentively examine, for some Time, the Motions of Nature in Diseases, will discover how unstable and illusive this Practice must be. For Opium not only affords but a transitory Relief, by palliating the Symptoms which soon return, leaving the Cause of the Disease untouched, but also conceals, as it were under a dark Cloud, the Signs by which the Physician should discern the Disease and the Indications of Cure. It raises other Symptoms foreign to the Disease; weakens, or rather extinguishes the Efforts of Nature to perform a Crisis; and, by a long Use, renders Distempers, which were free from Danger, extremely grievous, and many Times mortal. Thus, this soporiferous Juice, by gaining fallacious Respites, usually imposes both upon the Patient and the Physician; since a Disease is often the Endeavour of Nature to overcome the peccant Cause, and Pain itself is sometimes the Sensation of that Endeavour, but oftener the Stimulation of the Part affected by the peccant Humour, whereby Nature is vehemently irritated to its Expulsion. Certainly, that Drug which deprives Nature of this *Stimulus*, does not deserve the Name of a Remedy. Thus, for Instance, in nephritick Disorders arising from a Stone obstructing either of the Ureters, the Pains which torture the Sick ought not to be regarded as useless. For the Kidneys, Ureters, and abdominal Muscles, provoked by these Irritations, are at one Time strongly contracted, at another Time relaxed; and by these Means the Stone is sometimes ground, comminuted, and forcibly protruded, and, by the like Efforts reiterated, and the Help of Medicine, is at length expelled into the Bladder. The same may be said of the Pains in the Gout. For the Humour, which is lodged and concreted in peculiar Vessels

of the Joints, is gradually ground and resolved by the irritated and inflamed Part, so that it passes at length from smaller Vessels into larger, or acquiring a gentle Effervescence from the Heat of the Part excited by the Pain, it is attenuated, and made capable of transpiring through the Pores of the Skin.

If the Use of Opium be hurtful in these Cases, what must it be in others? 'Tis in vain to oppose to us the successful Practice of some Physicians who are always prescribing Opium. Let us but attend a little to their Method of Cure, which consists mostly in acrid, spirituous, stimulating Medicines, such as volatile Salts, essential Oils, Aromaticks, &c. and it will not be difficult to judge, that either this Method hath been invented to correct the bad Effects of Opium, (*viz.*) to dissipate the soporous Affections brought on by its Use, and to rouse languid Nature, or else, that they have employed Opium to allay the Tumults which have been raised by this new and unwarrantable Practice.

13. Opium thrown into the Intestines in Clysters produces the same Effects as when taken by the Mouth; nay frequently greater; and sometimes occasions more grievous Symptoms. It is therefore seldom dissolved in Clysters. Infusions or Decoctions of the Heads of the white Poppy are generally preferred: But neither ought these to be used without the greatest Caution; and only to stay immoderate Fluxes of the Belly, or in violent Pains of the Colick.

14. The Virtue of Opium externally applied is doubtful and uncertain; for which Reason it is very seldom applied to procure Sleep; nor indeed ought it to be done rashly. In the Tooth-ache the Quantity of one or two Grains is frequently laid upon the temporal Arteries, and not with Relief. But to the

the Eyes and Ears, according to *Galen*, opiate Compositions are extremely injurious; for they impair both the Sight and Hearing. In Wounds likewise they often bring on a Gangrene.

15. The same Judgment must be formed of other papaverine Medicines as of Opium, though their soporiferous Virtue is much weaker.

In these the Heads of the white Poppy are chiefly employed, from which, being gathered when mature, and kept dry, are prepared Infusions and Decoctions; as also a Syrup, commonly called *Diacodium*. The Seeds are left out of these Compositions; because they are not soporiferous, but oily and nutritive. Formerly they were made into Bread, as *Dioscorides* relates. And not only the Seeds of the white Poppy are alimentary, but those of the black Poppy also; since *Matthiolus* writes, that the Inhabitants of the Valleys about *Trent*, of *Stiria*, and the upper *Austria*, eat Cakes made of the Seeds of both Sorts of Poppy with Meal; and though they constantly use the Oils expressed from these Seeds with their Food, yet are not drowsy, nor sleep longer than common. And in the Year 1710, the Olive-Trees being killed by the Cold of the Winter, the same Oils were commonly used here instead of the Oil of Olives, without any sensible Inconvenience. Moreover, *Tournefort* hath observed, that the Ladies of *Genoa* eat white Poppy-Seeds with Sugar in great Abundance, and are not lethargick, or the more sleepy for them. Wherefore, in preparing Emulsions to soften the Acrimony of the Humours and to abate their Effervescence, the Seed of the white Poppy is frequently mixed with the four greater cold Seeds. The Oil is likewise drawn from it for external Use in Liniments and Unguents.

Take one Head of the white Poppy cut small, without the Seeds. Boil it in ℥xij. of Water to Half. Strain the Liquor, and give it to the Patient at Bed-time, to forward Sleep.

Take of white Poppy-Heads N^o. ij. Cut them small, and boil them in ℔j. of clear Water to a Diminution of one third Part. With the strained Liquor, and the Seeds of the white Poppy and Melons, ā ℥ss. make an Emulsion, f. a. in which dissolve of the Syrup of the Water-Lily ℥j. Divide the Emulsion into two Doses, to be drank in the Night at the Interval of four Hours.

Take of the four greater cold Seeds ℥ss. Bruise them in ℥vj. of a Decoction of Barley and Marsh-Mallow Roots. In the strained Liquor dissolve ℥ss. or ℥vj. of Diacodium. Make an Emulsion to be taken when going to rest, and at a proper Distance from Meals.

Take of Diacodium ℥x. the distilled Waters of red Poppy-Flowers and Purslain, ā ℥iv. the Water of Orange-Flowers ℥ss. Mix and divide them into two Draughts. Let one be taken at Bed-time, and the other a few Hours after, if required.

Take of the solid Extract of Opium gr. j. Crabs Eyes prepared ℥ss. Rub them together in a marble Mortar till they are perfectly mixed. Divide the Powder into six equal Parts, and give one every sixth Hour to ease a violent Cough.

Take of prepared Opium gr. ss. Extract of Saffron gr. j. Syrup of Marsh-Mallows ℥ss. Dissolve them in ℥vj. of an Infusion of red Poppy-Flowers. Make a Draught to be taken at Night to quiet a troublesome Cough, and to promote Sleep.

Take

Take of prepared Opium gr. j. red Coral and *Japan* Earth, ā ʒfs. To these, when perfectly mixed by rubbing in a Mortar, add Cinnamon and Nutmeg reduced to Powder, ā ʒj. Extract of Juniper-Berries ʒj. Syrup of Wormwood q. f. Mix them into an Opiate, to be divided into four Doses, and given at proper Intervals in immoderate Fluxes of the Belly attended with griping Pains, or in Superpurgations.

Take of Castor gr. v. prepared Opium gr. j. or the liquid Laudanum of *Sydenham* gutt. xij. Dissolve them in the distilled Waters of Orange-Flowers and Mugwort, ā ʒiij. To the Solution add of the Syrup of Mugwort ʒj. Let this Mixture be taken by Spoonfuls to calm hysterick Disorders.

ARTIC. V. *Of the true ACACIA.*

Acacia vera, et Succus Acaciæ, Off. Ἀκακία, *Gal. Damocrat. et aliorum.* Ἀκακίας Ἐγχύλισμα, *Diosc.* Δάκρυον κυανωπὸν ἀκάθης, *Androm.* The true Acacia is an inspissated gummous Juice, externally of a brown Colour or blackish, internally somewhat inclining to red or yellow, of a firm, hard Consistence, growing soft in the Mouth, and of an austere astringent, but not unpleasant Taste. It is brought to us from *Egypt* in roundish Cakes, weighing four, six, or eight Ounces, and wrapt up in thin Bladders. It ought to be chosen fresh, pure, bright, and easily soluble in Water. When it is very black and dry, or mixt with Dross, it is bad.

It is expressed from the Pods of a thorny Tree called *Acacia folio Scorpioides leguminosæ*, C. B. P. 392. which we have before mentioned in the Article of Gum Arabick; for both are produced from
the

the same Tree. Before the Pods are ripe they are moistened with Water, and bruised, and the Juice being expressed from them is evaporated to a due Consistence by Coction, and formed into small Cakes.

It consists of a moderate Portion of acid Salt, a little alkaline Salt, a copious astringent Earth, and a large Quantity of both thin and thick Oil. From these combined arises a saline, aluminous, mucilaginous Compound.

It is reckoned incrassating, astringent, and repercussive. It strengthens the Stomach, quiets Vomiting, stops Loosenesses, and all Hemorrhages, by inspissating the Blood, softening the Acrimony of the Humours, and corroborating the solid Parts. It is given inwardly from $\mathfrak{z}\text{ss}$. to $\mathfrak{z}\text{j}$. either in Powder or a Bolus, or dissolved in some proper Vehicle.

Alpinus relates, that the *Egyptians*, against Spitting of Blood, give a Drachm of it every Morning dissolved in some Liquor. He likewise proposes the same to be injected into the *Uterus* to stay immoderate Hemorrhages. In *Egypt* it is frequently employed in Collyriums to strengthen the Eyes, and to preserve them from Inflammations, which are there very common; and is advantageously used in repellent Gargarisms, to restrain the Fluxion in the Beginning of Quinseys. *Alpinus* moreover asserts, that nothing is of greater Service in the Falling down of the *Anus* and *Uterus*, than a Solution of this Juice in a Decoction of the Leaves and Flowers. He commends it also in Fomentation for gouty Pains: But in these Affections it is not safe; since by its Astringency it checks the Humours, and often repels them to the internal Parts.

Take of the true Acacia $\mathfrak{z}\text{ss}$. Conserve of red Roses $\mathfrak{z}\text{j}$. red Coral prepared $\mathfrak{z}\text{ss}$. Syrup of Comfrey q. f. Mix and make a Bolus for Spitting of Blood.

Take

Take of *Egyptian Acacia* ʒj. Dissolve it in the Juices of Plantain and Ground-Ivy, ā ʒiij. To the Solution add of the Syrup of dried Roses ʒj. and let the Mixture be taken by Spoonfuls in Hemorrhages.

The Curriers at *Cairo*, says *Alpinus*, consume great Quantities of this Juice in blackening Leather.

When the true Acacia is wanting in the Shops, its Place is supplied by another Juice called *Acacia nostras* or *Germanica*, which is the inspissated Juice of the unripe Sloe or Fruit of the *Prunus Sylvestris*, C. B. P. 444. It is a dry, hard, ponderous Extract, appearing on the Outside black, within shining, and has an acid austere Taste. It is brought from *Germany* in Cakes wrapt up in Bladders, and is also prepared here in the Shops.

It has a greater Acidity than the true Acacia, and therefore is accounted more cooling and astringent; but as it contains much less Oil, it does not so efficaciously soften the Acrimony of the Humours. Wherefore, since its Virtues are somewhat different from those of the true Acacia, it ought not to be substituted for that in the *Theriaca*.

It is sometimes given to ʒj. in the Form of a Bolus, or dissolved in Liquors, against Hemorrhages and Loosenesses; and is advantageously mixed into Gargarisms for Quinsies.

Take of the *German Acacia* ʒj. Sal Prunel ʒfs. Honey of Roses ʒj. the distilled Waters of Roses and Plantain, ā ʒiij. Make a Gargarism to be used in the Beginning of a Quinsy.

ARTIC. VI. Of HYPOCISTIS.

Hypocistis, Off. Ὑποκίστις, Diosc. *Tarasith*, Arab. This is a dry, black, shining Juice, of an austere Taste.

Taste. It is brought from *Provence*, *Languedoc*, and the *oriental* Countries. It ought to be made Choice of pure, bright, black, and not burnt.

The Plant from which it is obtained is called *Hypocistis Officinarum*, C. B. P. 465 *. It grows under the *Cistus*, being an Excrecence from its Root, whence the Name. It bears a small roundish Fruit, from which the Juice is expressed, and exhales by the Heat of the Sun to the Consistence of a solid Extract.

Besides this Preparation of *Hypocistis*, in the Time of *Dioscorides* some macerated and boiled the dry Branches of the Plant; then strained, and reduced the Liquor to an Extract by Evaporation.

Hypocistis consists almost of the same Principles as *Acacia*, and has much the same Virtues. It powerfully astringes, and is commended against all Fluxes, as Hemorrhages, Spitting of Blood, the Floodings of Women, and in the Dysentery and *cœliack* Passion. “ Moreover, (says *Galen on simple Medicines*, l. 7.) “ if our Intention be to corroborate any Part which has been relaxed by too much Moisture, the Juice of *Hypocistis* is highly conducive to that End. For this Reason undoubtedly it is mixed with Epithems to lay over the Stomach and the Liver, and with the Antidote made of *Vipers*, (*viz.*) in Order that it may strengthen the Body.”

It is taken inwardly from ʒss. to ʒj. and is used in repellent Gargarisms as *Acacia*.

Take of *Hypocistis* ʒij. Syrup of Comfrey and of Barberries, ā ʒj. the Mucilage of Gum Tragacanth ʒj. Plantain and Purslain-Water, ā ʒij. Make a Linctus, of which let a Spoonful be taken often against Spitting of Blood.

* According to the Catalogue of the College, *Hypocistis sub Cisto*, C. B.

Take of Hypocistis ʒj. red Coral, sealed Earth, and Blood-Stone prepared, ā ʒj. Syrup of Ground-Ivy ʒj. Plantain and Purslain-Water, ā ʒiij. Make a Mixture to be taken by Spoonfuls.

Take Hypocistis and *German* Acacia, ā ʒj. Conserve of Roses and of Hips, ā ʒij. Syrup of Barberries q. f. Mix them for four Doses, and give one every fourth Hour, to strengthen the Stomach, and to stop a Looseness, after due Preparatives.

ARTIC. VII. Of JAPAN EARTH.

Catechu, and improperly, *Terra Japonica*, *Off.* is an indurated, gummo-resinous Juice, externally of a reddish Colour tending to Black, internally of a brownish Red. It has an astringent Taste, at first bitterish, afterwards something sweet and agreeable, and is void of Smell. There are two Sorts: The one is more pure, which easily melts in the Mouth: The other is coarser and drossy, having often a Mixture of Earth, Gravel, Stones, and other heterogenous Substances. The first is more scarce, but is accounted better, and ought to be made Choice of when it can be met with. It is brought from *Malabar*, *Surat*, *Pegu*, and other Coasts of the *Indies*. It is improperly called *Japan* Earth, since it is not found in *Japan*, unless brought thither from other Countries.

The Merchants, deceived by the Driness and Friability of this Drug, have believed it to be an Earth: But at this Time no one doubts but that it is a vegetable Juice; since it easily dissolves in Water, and no Earth is separated from it by Percolation. It likewise takes Flame, and burns away in the Fire, leaving few Ashes. From the various
Accounts

Accounts given of it by Authors, under the Names of *Kbaath*, *Cate*, *Catechu*, *Caetchu*, *Castjoe*, &c. it is difficult to determine the Plant which produces it: Nay, we may conclude rather that it is drawn by Coction from many different Plants.

For if we hear *Garcias*, the Tree from which the Juice *Cate* is extracted, is as large as an Ash-tree, with a small Leaf, very like common Heath, or Tamarisk. It is ever-green and thick set with Thorns. The Method of extracting its Juice he relates thus. They boil the Branches of the Tree cut small, and then bruise them; afterwards, with the Meal of *Nachani*, and with the Saw-dust of a certain black Wood which grows there (though this is not always added) they form Pastils and Tablets, which are left in the Shade to dry.

Bontius describes the same Tree as having its Trunk and Branches beset with a great Number of Thorns, with Leaves almost like Savin or the Tree called *Arbor Vitæ*, but not so fat and thick. It bears, says he, round Beans, wherein are included three, or, at the most, four Nuts, which are so hard as not to break betwixt the Teeth. From the Root, Bark and Leaves, an Extract is drawn by boiling, termed *Cate*, which both these Authors suppose to be the *Lycium Indicum* of *Dioscorides*.

But *Herbert de Jager*, in the *Ephemerid. German. Decad. 2. Ann. 3.* writes that the *Lycium Indicum* or *Cate* of *Garcias*, called by the *Indians*, *Kbaath*, and by the *Persians*, *Reng*, is a Juice extracted not from one Tree only, but from almost all the *Species* of *Acacia*, whose Bark is astringent and reddish, and from many other Plants, which by boiling yield a Juice of the like Sort; and all these Juices are comprehended in those Countries under the common Name of *Kbaath*, though they differ both in Goodness and Virtue.

He mentions however one Tree in particular, which produces a most excellent *Kbaath*. He defines it a *Species* of *Acacia*, by the *Indians* called *Kbeir*, and by the Inhabitants of *Malabar*, *Karangalli Patti*. It is a thorny Tree full of Branches, and covered with winged Leaves, like those of the true *Acacia*, but less. In the Kingdom of *Pegu* its Juice is drawn out by Coction, and of this they make their *Kbaath*, which is so famous over all the *Indies*.

Moreover, among the Trees which afford the Extract *Kbaath* or *Catechu*, that called *Areca* is likewise remarkable according to *Herbert de Jager* in the Place above cited, and *J. Otto Helbigius*, *Ephemerid. German. Ann. 9, & 10*. It is a tall Tree, with a Leaf like the Palm, of which it is a *Species*, being called *Palma cujus fructus Sessilis Fausel dicitur*, *C. B. P. Filfel & Fulfel, Avicennæ: Fausel sive Areca Palmæ foliis*, *J. B. 1, 389. Areca sive Fausel, Clusii exot. 188. Pinung, Bontii: Caunga, Hort. Malabar. 1*. It grows only in sandy Places and near the Sea Coasts. It bears a Fruit termed *Fausel*, of an oblong roundish Figure like the Date, and covered, when ripe, with a thick smooth Membrane of a golden yellow Colour, containing a yellowish Pith, and an hard Kernel as large as a Nutmeg, but in shape for the most part like a Pear, or sometimes flat on one Side and convex on the other.

The Method of procuring the Extract is this, as related by the above-mentioned *Herbert de Jager*, *Ephem. Germ. Dec. 2. Ann. 3*. They cut the Fruit whilst it is green into two or three Pieces, and so boil it in Water with a little calcined Oyster-shell for four Hours, or till the Pieces have acquired a dark red Colour, to which the *Calx* greatly conduces. Then they strain the Decoction hot, and letting it stand to cool draw it off gently from the
thick

thick Matter which settles at the Bottom. This Sediment inspissated by itself goes under the Name of *Kbaath*, and is used in the same manner as the Extract *Cate*; but to improve its Virtues they add to it Water, wherein the green Bark of *Kheir* or the *Acacia* last mentioned, bruised, has been macerated for three Days, and boil them together to the Consistence of a soft Extract. Afterwards they expose the inspissated Mass to the Heat of the Sun upon Mats of Straw, and form it into Tablets or Pastils.

The great and more opulent People of the Country, not content with this *Kbaath* or *Catechu*, mix with it Cardamom, Aloes-wood, Musk, Ambergrease, and other Substances, to render it more grateful to the Palate. Such is the Composition of a Sort of Tablets prepared among the *Indians*, in Figure round and flat, about as big as the *Nux Vomica*, which are brought into *Europe* by the *Dutch*, under the Name of *Siri Gata Gamber*. Of the same Kind likewise are the black Pastils which come to us under different Forms, having sometimes the Form of Pills, sometimes of Seeds, Flowers, Fruits, Flies, Insects, or the Dung of Mice, &c. These are made by the *Portugueze* in the City of *Goa*, and are for the most Part rejected by the *French* on Account of their strong aromatick Fragrancy. But as those People are extremely fraudulent, they usually mix with this Extract, Sand, Clay, and other heterogeneous Substances to increase its Weight, inso-much that it seldom comes pure from their Hands.

Garcias and *Bontius* observe that the Fruit of *Areca* termed *Faufel*, being masticated when unripe affects the Brain with a sudden Giddiness, not unlike that which is occasioned by Excess of Wine. But this Alteration, upon taking a little Salt and a Draught of cold Water, presently vanishes.

The oriental People commend this Mastication against an offensive Breath, to strengthen the Teeth and Gums, to fortify the Stomach, to stop Vomiting and Loosenesses, to raise the Appetite and help Concoction. But the Mouth after chewing it has a very filthy Appearance, as if it were besmeared with Gore.

Catechu or *Japan Earth*, when pure and without the Mixture of Aromatics, is moderately astringent, corroborates the Teeth and Gums, heals the Thrush and Ulcerations of the Mouth, cures the Quinsey and swelling of the Tonsils, stays spitting of Blood, restrains Catarrhs, is serviceable against Coughs and Hoarseness, softens the Acrimony of the Lymph, strengthens the Stomach, helps Digestion, stops Loosenesses, the Diabetes and Hemorrhages, and abates the *Menses* when immoderate. *Wedelius* in the *Ephemer. German.* gives an Account of a young Man, who by the Use of this Medicine was cured of a *Hernia varicosa*.

With Respect to the too large Dose of *Japan Earth*, I am of Opinion that nothing is to be feared, for Pieces of it may be held constantly in the Mouth, fresh ones being substituted as fast as the others dissolve without any bad Consequence. It is to be observed, that the smaller the Pieces are the more agreeable they are found to the Palate. They are generally taken about as big as Aniseed, or Coriander-seed.

It is usually given in Substance, under the Form of a Bolus or Tablets, from ℥ss. to ʒss. *Wedelius* draws a Tincture from it thus,

Take of *Japan Earth* powdered q. v. pour upon it six or eight times its Quantity of rectified Spirit of Wine; set them to digest together, and when the Tincture is drawn, pour it off gradually

gradually from the Fæces, and put it by for Use. The Dose is from gutt. xx. to lx.

This elegant Tincture, as also *Japan Earth* in Substance, is successfully used in Gargles against the Quinsy.

Take of *Japan Earth* ʒj. Sugar ʒj. powder and mix them perfectly; then with the Mucilage of Gum Tragacanth, and one or two Drops of the Oil of Cinnamon, make Lozenges or Pastils, which may be held in the Mouth and dissolved, in a catarrhus Cough, and Loosenesses.

Take of *Japan Earth* ʒss. Nutmeg and red Coral prepared ā ʒj. make an Electuary with q. s. of the Syrup of Quinces. The Dose is ʒj. three times a Day, in a Superpurgation, Looseness and Dysentery.

Take of *Japan Earth* ʒj. Blood-stone prepared ʒss. Diacodium ʒss. Syrup of dried Roses ʒj. the Water of Purslain, and of Frog's Spawn, ā ʒiij. make a Julep for a spitting of Blood and Hemorrhages.

Take of *Japan Earth* powdered ʒiij. Mucilage of Gum Tragacanth and Syrup of Comfrey, ā ʒj. Plantain-water ʒiij. mix and make a *Loboch* against spitting of Blood and a catarrhus Cough.

Whether the *Catechu* of the Moderns be the same with the *Lycium Indicum* of *Dioscorides* is a Doubt not easily resolved: But I am inclined to think, that both the *Lycium Indicum*, and the other Sort called *Lycium Cappadocum*, are now Strangers to the Shops.

ARTIC. VIII. Of SUGAR.

Saccharum, Off. Σάκχαρον, *Dioscor.* Σάκχαρ, *Galen.* Μέλι εν καλάμοις, *Theophras.* Μέλι καλαμίνου, *Arrian.* Ἄλς Ἰνδικῆ, *Pauli Æginet.* Zuccar, *Arab.* Saccharon, *Plin.* Sugar is an essential Salt, fat, oily, of a reddish brown Colour or grayish when unrefined; but when perfectly refined, of a snowy Whiteness and crystalline Splendour, dry and friable under the Teeth. It dissolves in Water, and becomes thick again by boiling; is fat like Honey, and ductile into long Threads, of an agreeable sweet Taste, almost void of Smell, and is extracted from the Sugar-Cane.

It was known to the Ancients, but was not used among them as it is at this time with us; which indeed is evident from the Testimony of many Authors; though it was formerly, as at present, procured from different Plants, which we shall mention below.

Strabo, in his Geography, l. 15. writes expressly, that in the *Indies* there is a certain Reed which produces Honey without the Assistance of Bees. *Lucan* also witnesseth the same in this Line.

*Quique * bibunt tenerâ dulces ab Arundine succos.*

Likewise *Marcus Varro* in the following Verses,

Indica non magnâ nimis Arbore crescit Arundo:
Illius è lentis premitur radicibus humor,
Dulcia cui nequeant Succo contendere Mella.

Upon this Reed, *Seneca*, *Epist.* 85. writes thus,
 “ It is said that Honey is found in the *Indies* upon
 “ the

* *Sc. Indi.*

“ the Leaves of Reeds, and is either formed from
 “ the Dew of the Heavens, or from the Sweet and
 “ fat Juice of the Reed itself.” This melleous Juice
 had sometimes the Name of *Honey*, sometimes of
Salt, and sometimes of *Sugar*. “ There is (says
Dioscorides, when he enumerates the different
 Kinds of Honey) “ another Kind of concreted Ho-
 “ ney, which is called *Saccharon*; it is found in
 “ Reeds in the *Indies* and *Arabia Felix*. It is har-
 “ dened like Salt, being like that brittle betwixt the
 “ Teeth.” *Archigenes* says, that the *Indian Salt* has
 the Colour and Consistence of common Salt, the
 Taste of Honey, and the Size of a Lentil, or at
 the most of a Bean. *Galen* upon Simple Medicines,
 l. 7. writes, that *Sacchar* is brought from the *Indies*
 and *Arabia Felix*. “ It is (adds he) a Kind of Ho-
 “ ney, but indeed less sweet than ours.” *Pliny* like-
 wise relates, that *Arabia Felix* produces *Saccharon*,
 but that a better Sort is found in the *Indies*: That it
 is a Honey collected in Reeds, gummy, sometimes
 white, brittle under the Teeth, of the bigness of a
 large Filberd, and used only in Medicines. The
 same *Pliny*, lib. 6. seems to have pointed out our
 Sugar-Canes which grow in the *Canaries*; when he
 relates from the Testimony of *Juba*, that in the
Fortunate Islands there are Trees growing like the *Fe-
 rula*, some black, others white, and that from the
 Black they express a bitter Water, and from the
 White a Water very pleasant to drink.

From these Authorities it is evident, that in the
 earlier Ages a sweet melleous Liquor was obtained
 by Expression from certain Reeds; and also that a
 Juice flowed spontaneously, and concreted into hard
 and brittle Tears, which we may call *Native Sugar*.
 But it must be confessed, that no mention is found
 among the Ancients of Sugar made of this Juice
 by Art or Coction, and compacted into large Mas-

ses, as it is at this Time usually brought to us. Indeed it is propable that the People of those Ages were unacquainted with this Art.

Sugar therefore was known to the Ancients. But then from what kind of Reed was this Sugar or mel-
leous Juice procured? This is a Matter of Dispute, since two Kinds of Reeds which yield Sugar are now found in the *Indies* and Oriental Countries; namely, the *Arundo Saccharifera vulgaris*, the common Sugar-Cane or Reed, and the *Arundo Arborescens* or *Arundo Mambu* of *Riso*, (*Mantiff. Aromat.* 185.) commonly called *Bambu* or *Bamboe*. From this last the Sugar exudes of its own Accord, though in a small Quantity, drying and concreting by the Heat of the Sun, and has been for a long Time called by the *Indians* *Sacar Mambu*: But no Sugar is made of its Juice by Expression. From the first the Juice is obtained by Expression, and boiled to the Hardness of Salt: Hence the learned *Salmasius* took occasion to think that the Sugar of the Ancients was only the Tear of the Reed *Mambu*, relying upon the Authority of *Marcus Varro*, who compares the Reed which is full of a sweet Juice, as to its Magnitude, to a Tree of a moderate Height; and also upon the Authority of *Solinus*, who (*cap. 52. de India, fol. 58.*) writes thus, “ The marshy Places produce a Reed, which
“ is so thick that being split in two betwixt the
“ Knots, it serves to make Boats to sail in: And
“ from the Roots thereof a Liquor is expressed of
“ the Sweetness of Honey.” But notwithstanding that the Passages here cited are to be referred to the Reed termed *Mambu*, they do not therefore exclude the common Sugar-Cane, which being replete with a more abundant Stock of Juice, must certainly have yielded a much larger Quantity of Sugar. Nay, I am of Opinion that this is the Cane or Reed, which

which *Lucan* in the Line above quoted, mentions under the Name of *Arundo tenera*.

Some will here ask, why the native Sugar exuding spontaneously from the Sugar-Cane is no longer found in the Shops, or no longer brought to us? To these the Answer is easy; namely, because at present very little of it is produced. In the Time of *Dioscorides* and *Galen*, when the Method of expressing and boiling the Juice was unknown, and the Reeds were not cut, but suffered to grow for many Years, the Saccharine Juice, wherewith they were turgid, must necessarily exude from them, in the same Manner as Gums and Resins flow from a great Number of Trees. Wherefore no Wonder if the Ancients had considerable Quantities of this native Sugar. But when the Love of Money and the Desire of Gain taught Men the Art and Method of drawing a larger Quantity of Sugar from these Reeds by cutting them down and pressing them, it became customary with the *Indians* to cut their Reeds every Year, and to plant them again. Hence therefore it happens, that as no Reeds remain for many Years to be sufficiently replete with Saccharine Juice, the Operation of Nature is prevented, and so the native Sugar of the Ancients is lost*.

They who think the Sugar of the Ancients to have been different from ours object the Testimony of *Pliny*, who tells us, that Sugar was only used in Medicines, and says nothing of its Usefulness in Seasonings and other culinary Purposes. But the

* My Author means, that it is so very scarce that none is brought into *Europe*; for that it is not quite lost is evident from his own Words below; where he says, that the native Sugar of the *Arundo Arborescens* is still known to the *Persians*, *Turks*. &c. and also that the native Sugar of the *Arundo Saccharifera* is now found, according to *Piso*, in the Province of *Rio de la Plata*.

Reason of this is, because in the Time of *Pliny* the *Greeks* and *Latins* had not yet mingled Sugar with their Food, perhaps on account of its Scarceness, whence all that was brought to them might but barely suffice for their Medicines. Nevertheless, as we have above observed from *Lucan*, the *Indians* at that Time prepared Draughts of the sweet Juice of Reeds, both to quench their Thirst and to please their Palate.

The *Arabians* have mentioned three Sorts of Sugar, namely, *Zuccar Arundineum*, *Tabaxir*, and *Zuccar Albusar*.

1. *Zuccar Arundineum* of *Avicenna*, is said to ouze out of Canes, and to be found upon them like Salt. It seems not to have differed from the Sugar of the Ancients which exuded from the Sugar-Cane. This same Sugar when it was found white was termed *Tabarzed*.

2. *Tabaxir* of *Avicenna*, which the Interpreters have improperly rendered *Spodium* or *Cinerem*, perhaps because it somewhat resembled Ashes, is now nothing else among the *Persians*, *Turks* and *Arabians*, than the *Sacar Mambu* of the *Indians* or *native Sugar* of the Ancients, which issued from the *Arundo Arborescens*. Yet I must confess, that when I consider the Words of *Avicenna*, I greatly suspect that the *Arabians* denoted by this Name, the first Sugar which had been boiled or had suffered the Action of the Fire. For he tells us, that *Tabaxir* is the *Ashes* of certain burnt Reeds, concerning which he says, the following Story is commonly related; (*viz.*) that the Tops of the Reeds are struck one against another by the Force of the Wind, and that from their mutual Collision a Fire is raised, whereby they are consumed to Ashes. This Fable seems to have had some Foundation of Truth; *to wit*, when Sugar was first brought to them boiled, and not

not well refined, but of a gray or ashy Colour, such as we now find in *Muscovade*; it is reasonable to suppose that this Colour imposed upon them, and made them mistake the Sugar for Ashes; not that it had been burnt, but had suffered the Action of the Fire or had been boiled, wherein it differed from the native Sugar of the Ancients, which flowed spontaneously. However, this I only beg leave to conjecture without asserting.

3. *Zuccar* or *Sacchar Albus* of *Avicenna*, *Albasser* of *Serapio*, which is also called *Manna*, differs from the foregoing *Species* of Sugar both in Taste and Virtues. *Avicenna* says, it is good for the Eyes, Lungs, Stomach, Liver, Kidneys, Bladder, and serviceable in the Dropsy; and likewise that it occasions no Thirst like the other Sorts of Sugar, because it has but little Sweetness in its Taste, and withal something saline and bitterish.

This Sugar is not to be met with in our Shops; nevertheless it is no Stranger in *Egypt* and *Arabia*; since it is the Tear of an *Egyptian* Plant, called *Beid el ossar*, *Prosp. Alpin. de plantis Ægypt. 86. Apocynum erectum, incanum, latifolium Ægyptiacum, floribus croceis, Herman. Parad. Bat. Apocynum Ægyptiacum lactescens, Siliquâ Asclepiadis, C. B. P. 303. Beidelsar Alpini, sive Apocynum Syriacum, J. B. 11. 136.* The *Egyptians* usually call this Tree *Ossar*, and its Fruit, which is as thick as one's Fist and oblong, they term *Beid el Ossar*, that is, *the Egg of Ossar*. It grows in several moist marshy Places near the Banks of the *Nile*.

The common Sugar now used with us differs only according to the Degrees of its Purity, it being all extracted from the Sugar-Cane, named *Arundo Saccharifera, C. B. P. 4. Sloane Hist. natur. Insul. Jamaic. fol. 108. Tab. 66. Arundo Saccharina, J. B. 2. 531. Arundo & Calamus Saccharinus, Tabern. Icon. 257.*

Canna

Canna mellæa, *Cæsalpin. Viba* & *Tacomurel*, *Pison*. This Cane or Reed arises from a thick fibrous Root, to be eight or nine Feet high, and is two, three, or four Inches thick, according to the Goodness of the Soil in which it grows, and full of a white, fungous, juicy sweet Pith. It is mostly of a green Colour tending to yellow, but at the Joints becomes yellow, white, and sometimes blackish. At each of the Joints, which are about four Fingers breadth asunder, grow two narrow Leaves of a yellowish green Colour, and two Cubits long or more; and the Top of the Reed, which is furnished with many Leaves, produces a divided Panicle, two or three Feet in length. It grows spontaneously in the *Indies*, the *Canary Islands*, and the hot Parts of *America*. In the Province of *Rio de la Plata*, we are told by *Piso*, that Sugar-Canes grow up of their own Accord to the Height of Trees, and that Crystals of Sugar exude from them by the Heat of the Sun.

In many other Parts of *America* it is planted, by laying oblong Pieces of it in parallel Furrows made in the Earth, and covering them. These Pieces must have every one a Joint, for from each Joint springs forth a new Cane, which in eight, ten, or twelve Months from the planting, according to the Nature of the Soil, acquires a proper Magnitude to yield Sugar:

The Method of making Sugar is this. When the Canes are ripe, they are cut off near the Root and in a Joint, then are cleared of their Leaves, made up into Bundles, and carried to a Mill. The Mill is composed of three heavy Axles made of solid Wood, standing erect, and bound with Iron Hoops. Betwixt these Axles which touch upon one another, and are turned about with great Force, either by Water or Horses, the Canes are continually

ally inferted, by which means they are crushed, and a Juice of exquisite Sweetness flows from them. The Juice when expressed will not keep above twenty four Hours; afterwards it grows sour, and is entirely unfit for making Sugar: But if it be kept a longer Time, it becomes good Vinegar. The Axles and Planks over which the Juice flows ought to be washed twice a Day, lest the acescent Liquor wherewith they are moistened, should dispose that to turn sour which runs after. The expressed Liquor being conveyed by wooden Pipes into a large brazen Cauldron, under which is a gentle Fire, they suffer it to boil a whole Day, sometimes more strongly, sometimes more gently, pouring Water to it from time to time, in order to moderate its Ebullition. From this Juice in the first Cauldron they take a large Quantity of feculent Scum or Froth, which serves their Cattle for Food and Drink. The despumated Liquor is poured into another Cauldron standing near the first, where it boils violently, during which its Impurities are removed by a large Ladle full of Holes. To purify it more perfectly they throw in a strong Lye made of Wood-ashes and Quick-lime, then scum it continually, and afterwards strain it through Cloths. The Dregs in some Places serve the Slaves for Food. Some likewise make them into Wine, by mixing Water with them. The Liquor when strained is poured into a third Cauldron, and boiled by an intense Fire to a due Consistence, being continually scummed with Ladles, and stirred about to prevent its boiling over; and to cool it more effectually they lift it up with the Ladles, and let it fall again from a considerable Height into the Vessels. They likewise at stated Times drop into the Liquor a little Butter or Oil; for thus its Intumescence is allayed immediately. It is also worth observing, that if a
small

small Quantity of Lemon-juice, or any other Acid be thrown in, the Sugar never acquires a solid Consistence or granulates afterwards.

When the Liquor is boiled enough, that is, when a little of it being taken up in a spoon and thrown into the Air, it instantaneously concretes and forms itself into a sort of Web or Feather; then it is poured out of the third Cauldron into a Pot or Copper, where it is kept with a gentle Heat till the Granulation commences. Immediately when it begins to granulate, it is poured off hot into earthen Vessels, called Moulds, which from a broad open Base terminate in an open Point, which is stopt up with Straw or Wood. Here it is left for twenty-four Hours to concrete. Afterwards the Moulds are carried into large Buildings: Where they are ranged in order, one Row upon another, and thus are left for forty Days more or less; having now their small Apertures unstopt, that the Syrup or mellaginous Liquor may more freely flow from them. Then they cover the Sugar with Potters Clay, mixed up thin with Water, to the Height of three or four Fingers. The Water running gradually out of the Clay and passing through the Mass of Sugar, washes and cleanses it of a melleous, fat, brownish Liquor, which it carries along with itself out of the Mould, through the small Aperture, into a Vessel put under to receive it; and the Clay continues dry at the Top of the Mould. The Sugar, being thus exhausted of its Moisture and rendered as dry as possible, is shaked out of the Moulds and broken into Pieces, of a reddish brown, ashy, or whitish gray Colour; and is called *brown*, or *gray Muscovade*. To be good, it ought to be of a light gray Colour, dry, not fat or unctuous, and to discover in its Taste as little of an *Empyreuma* as possible. This crude Sugar or *Muscovade* is not often used, especially

especially the *brown*; but it is the Matter of which all the other Sorts of Sugar are made.

The thick, fat, red or brownish Liquor which falls from the Moulds can only be inspissated to the Consistence of Honey: Wherefore it is called *Syrupus Saccharinus*, *Mel Saccharinum*, *Mellago*; or *Remel*, commonly *Melasses* and *Treacle*. It is useless both in Food and Physick, and ought to be rejected. Yet some of the Confectioners make use of it, when clarified, for preserving red Fruits; but it is unfit for that Purpose on account of its Taste, which is something unpleasent. Some draw from it an *Aqua Vitæ* or inflammable Spirit. They usually put one Part of Melasses to eight Parts of hot Water with a little Ale-yeast, and mix them perfectly together: Afterwards they set them to ferment in close Vessels, till a subtile, spirituous and vinous Smell exhales from them; and then draw off an ardent Spirit by Distillation.

The *Muscovade* is either refined in the *American* Islands, or is brought over into *France* to the Sugar-Houses; and of this are made the *Saccharum Miscellaneum*, *Saccharum purgatum*, and *Saccharum finale* or *regium*.

Saccharum Miscellaneum, or, as they call it, *Cassonatum* or *Castonatum*, vulgarly *Cassonade*, is a white Sugar in small Lumps or Crumbles, somewhat fat, of a Sort of melleous Smell not unpleasent, sometimes approaching to the Smell of Violets, and of a sweet Taste surpassing that of Honey. The Apothecaries make Choice of this for preparing Syrups, Electuaries and Confections. They prefer it to other Sorts of Sugar, both on account of its agreeable sweet Taste, and of the elegant Whiteness which it gives to Compositions, and also because Syrups made of it preserve their proper Consistence longer without candying. It ought to be white,
dry,

dry, and of a good Smell. It is made of *Muscovade* thus.

They throw what Quantity of *Muscovade* they think proper into a Cauldron, and pour upon it as much of a strong Lye as may serve for Despumation. Then they cast in the Whites of a great Number of Eggs beaten up into a Froth, scumming and throwing in more Whites alternately, till the Syrup is perfectly clarified. Before the Moisture is evaporated, they pass it through a Strainer, in which it leaves all the Straws and other Impurities. Afterwards it is boiled again till the superfluous Moisture is quite evaporated. The Syrup having now acquired a due Hardness, they put it into earthen Moulds, which have their small Aperture stopt, and have been first dipt in Spring Water; and then range them in a warm Cellar or Stove.

When the Sugar is become hard, they put upon the broad Bases of the Moulds Tobacco-Pipe Clay, got near *Roan* in *France*, and mixed up with Water, so as to lie two or three Fingers deep over the Sugar. When this Covering of Clay, partly from the Heat of the Place, and partly from the absorbent Warmth of the Sugar, is become dry, they take it off and put on another; which they repeat two or three Times, observing at each Time to thrust the Point of an Iron Spindle into the small Aperture of the Mould, to the End that the fat thick Liquor, commonly termed Syrup, may flow forth with greater Ease. The Sugar, when turned out of the Mould in the Form of a Pyramid or Cone, appearing of different Colours, they usually divide it into three Parts; namely, into the Bottom, the Middle, and the Top: These they lay separately, esteeming the Top of the Cone the worst. Afterwards the *Cassonade* is spread abroad upon large Sheets, and
dried

dried in the Air; and then, being put into Casks or Chests, is brought to us.

But if they intend to procure a Sugar more perfectly refined, and in a pyramidal Form, having first taken it out of the Moulds they dissolve it twice or thrice in Spring-water; boil it, and pour it again into the Moulds, proceeding in the rest as above-mentioned upon *Cassonade*: And thus they prepare the *Saccharum pyramidale* or *Loaf-sugar*, which is of different Sorts according to its different Degrees of Purity and Whiteness. The most excellent is that which surpasses the others in Whiteness, Purity, Splendour and Dryness, and which being struck with the Finger sounds like Marble. It is called *Saccharum finale*, because it is so perfectly refined, that no Art can render it whiter or purer. It is termed in *French*, *Sucre fin*, (commonly *double refined*) as likewise *Saccharum Regium*, *Royal Sugar*, on Account of its Excellency.

Sugar was formerly distinguished, from the Countries in which it was made, into *Maderense*, *Canarium*, *Brasiliense*, *Thomæum*, &c. But now all that is brought over into *France* is produced in the *American* Islands which are subject to the *French* Government, where the Sugar-Cane is cultivated in great Abundance.

Sugar-Candy, *Saccharum Candum*, *Cantum*, or *Cantium*, *Off.* *Κάντι* or *Κάντιον*, *Nicolai Myrepsi*, is a Sugar which is hard, transparent, and angular; whence the Name. It is twofold; the one like Crystal, and therefore called *Crystallinum*, which is made of the purest Sugar: The other is reddish or brown, and never becomes clear, being prepared from *Muscovade* or *Cassonade*.

It ought to be chosen hard, dry, transparent and crystalline; though some prefer the brown Sort,

supposing it, as being fatter, to be more efficacious in Disorders of Lungs.

The crystalline Sugar-candy is made thus. Some of the purest Sugar is dissolved in a small Quantity of Water, and boiled to a thick Syrup. This is put into an earthen Pot, wherein are stuck some Splinters of Wood downwards and cross-wise like a Kind of Lattice-work. The Pot is set upon a Plank in a warm Place, and there left for fifteen or twenty Days. Then the Syrup which is not candied is poured off, and all the Fatness remaining is washed out with hot Water. Afterwards the Vessel is set in a warm Place for the Crystals to dry, and being broken the Day following, the Sticks are found loaden with Sugar-candy shining like Crystal; which is separated from the Wood and Sides of the Vessel, to which it adheres, and being well dried is put by for Use.

After the same Manner is prepared the brown Sugar-candy from Muscovade or Cassonade.

Saccharum rubrum. Off. commonly called *brown Sugar*, is of a reddish Colour or brown, somewhat fattish, and made by boiling the Syrups which remain after the refining of Cassonade. It is seldom used in the Shops, unless for Clysters.

In a chymical *Analysis*, two Pounds of the whitest Sugar yielded one Ounce and thirty-six Grains of limpid Phlegm, void of Smell and Taste; twelve Ounces and six Drachms of Liquor, both acid and urinous, which at first was limpid, afterward reddish and empyreumatick; six Drachms of thin reddish Oil; two Ounces, three Drachms and forty-four Grains of thicker Oil. The black Residuum in the Retort weighed eight Ounces, one Drachm and sixty-three Grains: Which, being calcined in a reverberatory Fire for fifteen Hours, left one Ounce, one Drachm and ten Grains of brown Ashes.

Ashes. From these were drawn, by Lixiviation, two Drachms and sixty Grains of fixt alkaline Salt. The Loss in Distillation was eight Ounces and six Drachms; in Calcination seven Ounces and fifty-three Grains.

Sugar is an essential Salt, consisting of an acid Salt, an Oil and Earth. When it is perfectly refined, as in Sugar-candy, it concretes into prismatic Crystals, whereof the two opposite Bases are equal and parallel, and the others are Parallelograms. It gives no Marks either of an Acid or Alkali. It takes Fire, and burns with a vivid Flame: Dissolves easily in watery Menstruums, but with difficulty in Spirits and Oils. Being diluted with Water it ferments, and acquires first a vinous Taste, afterwards an acid one.

A vinous Liquor may therefore be obtained from Sugar, if thus fermented, (*viz.*) dissolve a Pound of Sugar in six or eight Pounds of Water, and mix well with them a Spoonful of fresh Ale-yeast: Set them in a warm Place in a Vessel close stopt, but not quite full. After a few Hours the Mixture will begin to ferment very strongly, and after three or four Weeks, more or less, according to its Quantity and the Heat of the Place, will produce a vinous Liquor not unlike Mead. If it be distilled it yields a strong inflammable Spirit. But if the whole fermenting Mixture be kept longer in the Heat, it soon changes into a strong Vinegar entirely like that of Wine.

Although Sugar was known to the Ancients, yet in those Ages it was but little commended, and also sparingly used. But in Process of Time its Use became very common both in the Shops and Kitchen; and is now imported into *Europe*, and consumed in such Quantities, that it is esteemed one of the chief Commodities of the *new World*.

The Ancients used to preserve and make up their Medicines with Honey. *Actuarius*, seems to be the first Physician who substituted Sugar in its Room.

Sugar taken moderately with Food affords a pretty laudable Nourishment. For we are assured that Swine by feeding upon the bruised Canes, from which the Juice has been expressed, grow surprisingly fat, and that their Flesh is so tender and favourable, that it is preferred to Capon. If a Lump of Sugar be taken at the End of a full Meal, it helps Digestion.

Almost all Physicians commend it for Disorders of the Breast and Lungs. To soften the Acrimony of Phlegm, to quiet Coughing, and to correct the Roughness of the Throat and pulmonary Tubes, it is ordered to be held in the Mouth 'till dissolved by the Spittle; for thus it covers the Membranes of those Parts, and defends them from the acrid Phlegm. It promotes Expectoration, especially if made into Syrup, and mixed with Oil of Almonds or Linseed. Being taken in the same Manner it allays colic Pains, and the Gripes of Children. Drinks prepared from Sugar cleanse the Breast, appease Coughs by scouring away the Phlegm, cure Hoarseness, deterge Ulcers of the Lungs, provoke Urine, loosen the Belly, and are serviceable in the Pleurisy and Peripneumony:

But if Sugar be taken alone and in over large Quantities, it is hurtful, particularly to choleric Temperaments: For in these it ferments more strongly in the Stomach and Intestines, excites Wind, and, by fermenting with the Bile, attenuates and renders it more fluid: For which Reason Sugar and sweet Things are said to produce Bile. Doubtless the Bile being loaded with the saline *Spicula* of Sugar becomes more acrimonious: Whence
it

it raises an Heat not only in the Intestines, but likewise over the whole Body when conveyed into the Mass of Blood. It causes Worms in Children. It is reckoned extremely injurious to the Teeth, since it makes them black, canker'd and loose: Wherefore it is customary with prudent People, after eating it, to wash their Mouth and Teeth well with Water.

But these are the least Inconveniencies arising from Sugar immoderately used. *Willis*, *Simon Paulli* and *Ray* accuse it of far greater. They ascribe to an immoderate Use thereof, the Scurvy and Consumption, the reigning Distempers of *England*. “ And
 “ lest any one (says *Ray*) should rather suspect these
 “ Distempers, which are so common in *England*,
 “ to be owing to the moist Constitution of the Air;
 “ we are told that in *Portugal*, which is a warm
 “ Climate, the Consumption is become epidemical
 “ from the same Cause: For the *Portugueze* con-
 “ sume more Sugar than any other Nation, except
 “ the *English*.” And *Willis*, in his *Treatise on the*
Scurvy, c. 10. writes thus. “ I so far blame Things
 “ preserved and mixed with Sugar, that I believe
 “ the Invention and immoderate Use thereof have
 “ very much contributed to the great Progress
 “ which the Scurvy has made in this last Age.
 “ For that Concrete consists of a Salt sufficiently
 “ acrid and corrosive, tho' softened with Sulphur,
 “ as is evident from its chymical Analysis; inas-
 “ much as Sugar, being distilled by itself, gives
 “ up a Liquor little inferior to *Aqua Regia*. But
 “ being fermented with a large Quantity of Wa-
 “ ter, and then distilled, notwithstanding that the
 “ fixt Salt is not raised, yet a Liquor will be drawn
 “ off as hot and pungent as the strongest Brandy.
 “ Therefore, since we take Sugar so plentifully in
 “ almost all our Food, it is highly probable that
 “ the daily Use which we make of it renders the
 “ Blood and Humours saline and acrimonious, and

“ consequently scorbutick. *Theophilus de Garencieres*, a famous Author, (*de Tabæ Anglicanâ*) imputes the Cause of the *English* Consumption to the immoderate Use which we make of Sugar: But I know not whether the Increase of the Scurvy may not, with greater Reason, be ascribed to it.” So far *Willis*.

Nevertheless *Frederick Slare*, a Physician of *London* and Fellow of the *Royal Society*, answers these Arguments very well in his *Vindication of Sugar*. 1. Says he, the Scurvy was spread abroad in the Northern Countries long before Sugar was brought thither. Besides, that Disease is more common among the Poor who very seldom make use of Sugar, than among the Rich with whom its Use is frequent and familiar. 2. As to the Consumption, which *Theophilus de Garencieres* calls *Flagellum Angliæ*, (*the Scourge of England*,) it is evident that the Air of *London*, vitiated by the Smoke of fossil Coal, is the primary Cause of that Disease; since it is often cured, during its first Stage, by change of Air only. Moreover, the epidemick Consumption of *Portugal* ought not to be imputed so much to the Abuse of Sugar, as to the almost continual eating of Acids, if *Slare* himself had not ascribed it to a certain venereal Virulency.

But they who are displeas'd with sweet Things object, that Sugar contains at least an acid Salt, which is extremely corrosive, and consequently hurtful to the Body. We must indeed confess that there are in Sugar very powerful acid *Spicula*, which are set at liberty by Fermentation, or separated from the other Principles by Distillation, though not in so great a Quantity as they are drawn from Nitre or Vitriol: But we are not therefore to conclude that this Acid renders Sugar hurtful. For if that Argument were of any Force, Mankind could take no
Food

Food without Injury ; since we have no alimentary Compound, wherein this acid Principle is not to be met with. Is not the same Acid found in Must and Wine, and even more copiously ? Is it not likewise contained in Barley and in Beer, in Wheat and Bread, and in all Fruits whatsoever, discovering itself evidently by Fermentation, or the Action of Fire ? And are these Aliments, for this Reason, supposed to have bad Qualities, or accounted injurious to Health ? By no Means. An inflammable Spirit, is drawn from Sugar duly fermented, [as from other vegetable Juices ; but it is not therefore the worse Food : Nay, on the contrary, by this same Spirit the most powerful, corrosive, acid Liquors are tempered and softened. In Sugar then, as in Milk, and other Aliments derived from Vegetables, the Acid is so intangled and enveloped in oily and earthy Particles, that from their Mixture results a most agreeable salutary Food, or Seasoning ; and not a corrosive pernicious Substance, as some Authors (who otherwise have rendered good Service to Physick) have a little too inconsiderately advanced. Dr. *Slare* commends it on many Accounts. He extols it as a bechick and stomachick Medicine, cheering the Heart and Brain ; which is also ophthalmick, sternutatory, vulnerary, and adontalgick. He rubbed his Teeth with nothing but the whitest Sugar, which preserved them sound and white for many Years, contrary to the Notion of those who assert, that it disposes the Teeth to corrupt and canker. He attributes to it a balsamick Virtue, whereby it preserves the Bowels from Putrefaction, as by the same Property it keeps Flowers, Roots, Fruits, and the other Parts of Vegetables, or Animals, a long Time entire and uncorrupted. These extraordinary Virtues he confirms by two remarkable Observations : The one concerning the *Duke of Beau-*

fort, an illustrious *Englishman*, who died about seventy Years old of a Fever, and who used to eat a Pound of Sugar or more every Day for almost forty Years together. His Teeth were whole and fast, and his Body being opened, his Bowels appeared perfectly sound and free from Injury. The other Observation is of one Mr. *Malory*, the Doctor's own Uncle. This Gentleman was very fond of Sugar and Honey. With these, especially with Sugar, he seasoned all his Food, whether Flesh or Fruits; and he lived to an hundred Years sound and healthy.

Hence we may conclude, that nothing is to be feared from a moderate Use of Sugar. On the contrary I am of Opinion, that as a Seasoning, it gives an Agreeableness to Aliments, which disposes the Stomach to a due Performance of Digestion; that it likewise helps the Ferment of the Stomach, and prepares the Food to undergo the Fermentation which is requisite both in the Stomach and Intestines; and therefore that it conduces to an excellent *Crafsis* of the Blood, and of all other Humours depending upon the first Digestion.

And so far is it from deserving to be thought the Cause of a pulmonary Consumption, that many experienced Physicians have extolled a Preparation of it with Roses, termed *Saccharum Rosatum*, as a sovereign, or even specifick Remedy, in that Disease. *Montanus*, *Valeriola* and *Forestus* assure us, that they have seen some Persons cured by taking it plentifully. *Riverius* likewise, *cap. de Phthysi*, tells us, he knew an Apothecary, who being in a Consumption, prepared for himself a large Quantity of *Saccharum Rosatum*, of which he kept continually eating; and by this Remedy alone was restored to Health.

Yet we must observe, that Physicians unanimously agree, that bilious, melancholick, and scorbutick

butick People ought to abstain from it; as also hysterical Women. For it readily ferments, and augments the Heat and Effervescence of the Humours, and renders the Symptoms of those Disorders more grievous.

Externally Sugar is an excellent Vulnerary, resisting Putrefaction, especially if diluted with a little Brandy. The *Turks*, says *Etmuller*, usually wash their fresh Wounds every Day with Wine. After which they scatter upon them powdered Sugar; and so cure themselves after a neat Method.

Sugar when dissolved in Brandy is sometimes called *Oleum Sacchari*, and is thus commended to promote Expectoration; and externally applied is accounted good to agglutinate Wounds, to cleanse and deterge Ulcers, and to remove Putrefaction.

Sugar-Candy, or white Sugar, finely powdered and blown into the Eyes, resolves an *Albugo* or Pearl of the *Cornea*. It does the same if dissolved in the distilled Water of Eyebright, Celadine, or Fennel. It likewise deterges Ulcers of the same Part, and heals them. If it be thrown upon Gledes and the Smoke received by the Nostrils, it restrains Defluxions of the Head.

There are many Preparations of Sugar, as the *Saccharum penidium*, *bordeatum*, and *Rosatum*, &c. In a Word it is an Ingredient in almost all compound Medicines for internal Use, and is therefore absolutely necessary in the Shops.

Some draw from it by Distillation a Spirit and empyreumatick Oil, but they are hardly ever called for in Practice.

Besides the common Sugar, another Sort is brought to us from *Canada*, a northen Province of *America*, where it is obtained from some Species of the *Acer*; the Chief of which is the *Acer montanum candidum*, C. B. P. 430. *Acer major multis*, falso *Platanus*,

Platanus, J. B. I. 168. *Acer major*, Dodon. *Pemptad.* 840. It is a tall beautiful Tree. It grows in moist and mountainous Places, flowers in *May*, and its Fruit is ripe in *September*.

In the Beginning of Spring, when this Tree is full of Buds, before the Leaves are unfolded, Incisions being made into its Trunk, Branches or Roots, a sweet potulent Juice flows plentifully from them; as also in Autumn, when the Leaves are fallen, and during the whole Winter-season. The Taste of this Juice is very much the same with that of Sugar. The Inhabitants of *Canada*, wounding the Trees towards the End of Winter, catch the Juice, and prepare from it Liquors to drink. They likewise boil it into a Sugar not unlike that of the Sugar-Cane. From eight Pounds of the Juice there remains one Pound of brown Sugar, which may be refined to Whiteness in the same Manner as common Sugar.

Of this Sugar well despumated, with the Leaves of the *Maiden-hair of Canada*, they make a Syrup, which many People, even in *France*, greatly esteem for Disorders of the Breast.

Moreover, not only terrestrial Plants afford Sugar, but also marine Plants. *Olaus Borrichius*, in the *Acta Hafniensia* for the Years 1671 and 1672; makes mention of a certain Species of *Alga*, found upon the Shore of *Iseland*, which yields Sugar. “ There grows (says he) in the Sea of *Iseland* a Species of *Alga*, which no Author, that I know of, “ has described; nor yet is it much unlike the narrow-leaved *Alga* of Glass-makers, (*Alga angustifolia Vitriariorum*, C. B.) except that its Leaf is “ yellowish, and something fatter. When this “ Plant has been cast upon the Shore by the Waves “ of the Sea, and has lain there for some Time, “ the Heat of the Sun gradually draws forth its “ Juice,

“ Juice, and it becomes loaded here and there with
 “ saline Grumes ; which being of a delightful sweet
 “ Taste, are carefully collected by the Inhabitants,
 “ and made use of in the Place of Sugar. They
 “ likewise gather the Plant fresh, before any Sugar
 “ appears upon it, and eat it at their Tables with
 “ Salads, wherein it is not unpleasant.

ARTIC. IX. *Of TARTAR.*

Tartarus and *Tartarum*, *Off.* Tartar is an hard, saline Substance, of a subaustere acid Taste, adhering to the Bottom and Sides of Wine-casks. There are two Sorts, (*viz.*) the *White* and the *Red*.

White Tartar is scraped off the Sides of Casks, wherein White Wine has stood a long Time. It comes to us from *Germany*. Red Tartar is got from Casks in which Red Wine has been kept, and is brought from *Provence* and *Italy*.

White Tartar is preferred, being freer from Earth. It is made Choice of heavy, hard, and, on its Surface which touches the Wine, rough with many Points like Crystals; and when broken not appearing porous, like a Sponge or Pumice-stone, or full of Earth, but of a dense, solid, shining Substance.

The Ancients made no Distinction between *Tartar* and the *Fæces* or Dregs of Wine. Indeed they have the same Origin, nor do they differ greatly from each other. For the Dregs are Tartar or the essential Salt of Wine attenuated by Fermentation into a turbid Sediment, and dissolved by a spirituous Liquor; which they afford more plentifully in Distillation than the Wine itself. So that Tartar only differs from the Dregs in containing more Earth, and less Spirit.

Tartar is seldom given inwardly, unless purified from a good Share of its Earth, by dissolving it in
 boiling

boiling Water, and afterwards setting it in a cool Place to crySTALLize. It is then called *CryStals* or *Cream* of Tartar; which Names were formerly assigned to two different Preparations, but are now indiscriminately given to this one.

Tartar is compounded of an acid Salt, an Oil, and an Earth; yet so that the Acid predominates. It is very difficultly soluble except in boiling hot Water, on Account of the oily Parts in which the Saline are involved. The acid Salt, by the Means of Fire or Fermentation, is converted into an alkaline Salt, either fixt or volatile.

Both Tartar and its CryStals allay the Effervescence and Heat of the Bile, abate Thirst in ardent Fevers, restore the Appetite, attenuate, resolve and gently evacuate thick vitiated Humours, and open Obstructions of the Bowels: Wherefore they are commended against Obstructions of the Liver, Spleen and Mesentery, in cachectick and hypochondriack Affections. They are successfully mixed as *Stimuli* with the weaker laxitive Medicines. *Angelus Sala*, in his *Tartarologia*, tells us, that he himself being miserably tormented with the Colick, and having tried many Remedies to no Purpose, he took ℥vj. of Tartar in Powder, by which he was purged and eased of his Pains; and at length, after repeating the same a few Times, was perfectly cured.

Cream of Tartar is given from ʒss. to ʒij. to open only, or to serve as a *Stimulus* to other Medicines; but if given as a Purge by itself, the Dose is from ʒss. to ʒvj. or ʒj. It is taken in the Form of an Electuary, Bolus, or Pills. If prescribed in Broths or Potions, it ought to be put into them when boiling, otherwise it will not dissolve.

It is advantageously joined with Chalybeates, assisting them very much in resolving Obstructions; and

and is therefore frequently used in mesenterick and cachectick Compositions.

Take of Cream of Tartar zj . Diagrydium gr. iv.
Make a purging powder for a Cachexy.

Take Crystals of Tartar and Sena, \bar{a} zj . Cinnamon zij . Cloves zfs . Mix and make a Powder to purge gently and open Obstructions. The Dose is from zfs to zj .

Take of the Rust of Iron prepared with *May-Dew* gr. xv. Cream of Tartar ʒj . Saffron gr. iij. Cinnamon ʒj . Make a Powder to be given twice a Day in a Green-sicknes, and Cachexy.

Take of the *Peruvian* Bark ʒj . Cream of Tartar zfs . Jalap in Powder zfs . Syrup of Wormwood q. f. to make an Electuary, of which zj . or zifs . may be taken three or four Times in a Day, in cachectick, intermitting Fevers, attended with an *Œdema* or *Leucophlegmacy*.

Take Cream of Tartar ʒv . Red Roses dried and powdered zj . Make a Powder, to which add a few Drops of the Spirit of Vitriol. The Dose is zfs . in intermitting Fevers, to temper bilious Humours in the Stomach, to remove a Nausea and want of Appetite, to correct Bitterness of the Mouth, and to assist Digestion.

Many Medicines are prepared from Tartar by the Chymists, the Chief of which are the following*.

1. A *Spirit* and *fætid Oil*. The Spirit is diuretick and diaphoretick, and for opening Obstructions is extolled by the Chymists as a *Panacea*. The Dose is

* I shall spare myself the Pains of transcribing from our Author the Processes by which these Medicines are made, because they are all to be found in our common Dispensatories.

is from ʒj. to ʒj. The Oil by repeated Distillations, either with Quick-lime or Water, loses its foetid Smell, and becomes agreeable. Internally it provokes Sweat. Externally it powerfully resolves Tumours, is serviceable against the Rheumatism and Palsy, and is commended against Diseases of the Skin.

2. A *fixt Salt*; which is made by calcining Tartar in an open Fire, or also the Residuum after the Spirit and Oil are drawn off. This fixt Salt of Tartar is an extremely acrimonious and caustick Alkali: Wherefore it is seldom used inwardly, though some account it diuretick. In many chymical Operations it is very serviceable; particularly in drawing Tinctures from resinous and sulphureous Compounds. Sometimes it is mixed with Purgatives, as well to unfold their sulphureous Parts, as to help their Action by attenuating the Humours. It is prescribed from gr. xij. to ʒss. but ought always to be dissolved in a large Quantity of Water, lest its Acrimony should hurt the Membranes of the Throat and Stomach. If it be set in a damp Place, it runs in a short Time, by the Moisture of the Air, into a Liquor, which is called *Oleum Tartari per Deliquium*. Moreover, from Salt of Tartar is drawn a Tincture by the Means of Spirit of Wine, which some greatly commend. It contains some of the alkaline Parts of the Salt, with some oily ones; and therefore is proper to incide viscid and tenacious Humours upon the Coats of the Stomach, in the Kidneys, or Glands of the Mesentery. It is given in any suitable Vehicle from gutt. x. to xxx. It likewise serves to extract sulphureous and oily Tinctures from Vegetables and Minerals.

3. A *volatile urinous Salt*; which is drawn either from Tartar, moistened and fermented; or from the Lees of Wine; or from the fixt Salt of Tar-

tar digested for some Months in a gentle Heat with the foetid Oil. This volatile Salt agrees in Virtues with those drawn from Animals.

Other Preparations of Tartar much used in common Practice are these.

1. *Terra foliata Tartari*, or the foliated Earth of Tartar, which is wonderfully commended by the Chymists for extracting the Tinctures of Metals. It is moreover extolled as a most excellent Remedy for resolving Obstructions of the Bowels, and attenuating thick Humours: Wherefore it is advantageously given in cachectick Affections, in the Palsy, and Dropsy.

2. *Soluble Tartar*, called also *Sal Vegetabilis*, which is aperient and loosening, and very serviceable in Cachexies and Obstructions of the Bowels. It increases the Force of purging Medicines, and is therefore often mixed with them in Potions. The Dose is from ℥j. to ℥ij. or even sometimes to ℥vj. or ℥j. If it be prescribed in ℥ij. of an Apozem or Broth, it purges without Uneasiness.

3. *Vitriolated Tartar*, which has much the same Virtues with *soluble Tartar*, and may be given in the same Dose. It is frequently used in aperient, alterative, and cathartick Medicines, both liquid and solid.

4. *Emetick Tartar*, which far excels all other Vomits prepared from Antimony. It is prescribed from gr. ij. to viij. and is easily taken under any Form whatsoever.

5. *Chalybeated Tartar*, termed *Tartarum Chalybeatum solubile*. This is a good Deobstruent, and may be given from gr. x. to ℥j. in a proper Vehicle.

C H A P. IX.

Of Substances growing upon Plants.

ARTIC. I. Of AGARICK.

AGARICUM and *Agaricus*, Off. Ἀγαρίκον, Græcor. *Agaricus sive Fungus Laricis*, C. B. P. 375. Agarick is a fungous Substance, formed into roundish, angular, uneven Lumps, sometimes smaller, sometimes greater, being as big as a Man's Fist or Head, very light, of a white Colour like Snow, crumbling into Powder when rubbed betwixt the Fingers, interwoven with a few Fibres, and covered with a callous, gray, reddish Bark. [The lower Part of which is pierced sometimes with large and sometimes with small Perforations, wherein are found sticking some extremely minute Seeds.] Its Taste at first is sweetish, soon after bitter, acrid, and nauseous, with a certain gentle Astringency. It grows upon the Trunks of Larch-trees, seldom upon their Branches. *Herman* observes, that these Trees, when Agarick grows upon them, no longer yield Turpentine.

It is chosen white, light, and friable. When it is heavy, blackish, and less friable, it is rejected. That is likewise disapproved which grows next the Stump of the Tree, because it contracts a Blackness from the Bark; and besides is commonly moister, and consequently less friable. The Bark also is thrown away as useless or hurtful.

Dioscorides and *Pliny* distinguish two Sorts of Agarick, (*viz.*) the *Male* and *Female*. The *Male* is round and every where similar, and according to *Pliny* more crisped and bitter. The *Female* has streight Veins within like the Teeth of Combs, and making

making as it were Partitions. The *Female*, according to *Pliny*, is more soluble, of a sweet Taste at first, which soon after turns to Bitterness: And this is preferable. The Shops, however, at present, have no Regard to these Distinctions. They chuse the more white and light, and call it the *Female*; as they call the ponderous and black Sort the *Male*. It is also called *Agaricus pedis equini facie*, *Inst. R. H.* 562. *Fungus in Caudicibus nascens unguis equini formâ*, *C. B. P.* 372. *Fungi igniarii*, *Tragi*, 943. This is not used in Medicines, but is of some Service in dyeing. It grows upon the old Trunks of Walnut-trees, Oak-trees, and others, of a callous, woody Substance in its Circumference, composed of streight Fibres, in the Middle softer, externally of a cineritious Colour, internally more obscure, tending to brown. It is rendered softer, and very susceptible of Fire in the following Manner. It is boiled in a Lye, and when dry pounded: Then it is boiled again in a nitrous Water, and dried.

Our Agarick is the same with that of the Ancients, though *Salmasius* thinks otherwise. The ancient *Greeks* were uncertain whether it was a Root, or a *Fungus* arising from the Putrefaction of Trees. *Pliny* and *Mesue* judged it to be of the fungous Kind: For they thought that Agarick and fungous Bodies had the same Origin; believing them to be produced from large Trees when they began to rot or grow old; so that they imagined Agarick to arise from Putrefaction, like an Imposthume. *Pliny* in particular relates, that it is found upon Trees in *Gaul*; which bear a Fruit in the Figure of a Cone. *Brassavolus* and others write, that they have seen Agarick growing upon Oaks, Firs, and Pitch-trees. But *Matthiolus* and *Bellonius* declare, that they never saw it upon any other besides the Larch-tree; and without Doubt, it is the *Fungus* of this Tree. For

the fungous Productions which grow to Oaks or other Trees, are *Species* of Agarick, differing in Colour, Form, and Virtues, from the genuine Agarick of the Shops.

Dioscorides says, that Agarick grows in *Agaria*, a Province of *Sarmatia*; whence is derived its Name. But at this Time it is gathered upon Larch-trees in *Dauphiny*, the *Alps*, and other Mountains.

In a chymical *Analysis*, three pounds eleven ounces of the whitest Agarick yielded sixteen Ounces, four Drachms and thirty-four Grains of Liquor, at first merely aqueous and transparent, then reddish and acid, afterwards brown, empyreumatick, and burning the Tongue like Pepper; two Ounces, six Drachms and thirty-six Grains of reddish urinous Liquor full of a volatile Salt, and a very little acid; sixteen Ounces, six Drachms, twenty-five Grains of fluid Oil. The black, dense, hard *Residuum* in the Retort, weighed twelve Ounces: Which being calcined in a Crucible for 19 Hours, left one Ounce, three Drachms of reddish brown Ashes; from which were drawn, by Lixiviation, two Drachms of fixt Salt merely alkaline. The Loss of Parts in Distillation was ten Ounces, six Drachms and sixty Grains; and in Calcination ten Ounces, five Drachms went off in Smoke and Flame.

From this *Analysis* it is evident, that Agarick consists of a tartarous and ammoniacal Salt, joined with a large Quantity of Oil, and a very small Portion of Earth: Which Principles are so combined, as to constitute a Salino-resinous Compound; forasmuch as two Ounces of Agarick afforded, by the Means of Spirit of Wine, six Drachms and a half of a resinous Extract, of an unpleasant nauseous Taste. Though Water dissolves and extracts very little from Agarick, but converts it into a slimy or mucilaginous Matter: Hence it appears that Infusions

sions and Decoctions of Agarick in watery Menstruums are of little Use. Nevertheless, an Infusion of it in Water turns blue Paper, purple. The purgative Virtue of this Medicine seems to be chiefly owing to that Spirit or thin burning Oil, which arises in the first Portions of Liquor; from whence also proceeds its acrimonious Taste.

Dioscorides and *Galen* with the ancient *Greeks*, commend Agarick for many different Distempers; but especially for the Jaundice, Epilepsy, Asthma, Sciatica, and Gout; and have touched but slightly on its cathartick Virtue: So that there is room to conjecture, that the Ancients employed Agarick, not so much for purging, as for inciding and opening. *Avicenna* likewise, among the *Arabians*, commends it as an inciding and digestive Medicine, if taken in a small Quantity with a little Opium. Moreover it was allowed to have an anthelminthick and alexipharmack Quality; and on this Account is an Ingredient in *Venice-Treacle*, and other alexipharmack Compositions, as may be seen in *Scribonius Largus*: Yet many of the *Arabians* reckoned it among Evacuants. The Moderns now rank it among purging Medicines and commend it chiefly to evacuate Phlegm; perhaps for this Reason, because the Excrements after taking it are commonly white. They use it as a Cathartick in many purging Compositions. They likewise give it to render the Serum fluxil, when tending to coagulate, and to prepare it for Excretion. Hence it is accounted serviceable in catarrhus Disorders, the *Coriza* and other Defluxions; in an Asthma, Cough, and Cachexy; in the *Fluor albus*, Suppression of the monthly Purgations, and in quotidian and slow Fevers, if owing to a Congestion of crude Humours. It is given indifferently to strong and weak, to young and old People, as also to breeding Women; and

that without any Danger, provided that the Nature of the Disease require it.

Some Authors deny it a cathartick Quality. For *Massarius* asserts, from his own Experience, that an Infusion of Agarick has no purgative Virtue. Indeed Water extracts very little from Agarick, as we have above observed. But yet in Substance it loosens the Belly, though weakly; and for this Reason it is joined with other purging Medicines, which it greatly helps, by attenuating and inciding the thick and tenacious Humours.

C. Hoffman thinks that the alexipharmack Quality, ascribed to it by the Ancients, is very little, if any: And I am of Opinion, that if it conduce any Way to the Operation of the Ingredients in *Venice-Treacle*, and other Antidotes, it is by inciding and deterging.

Moreover, many Observations of Physicians make appear, that Agarick has its Inconveniencies and Dangers. These three Faults are observed in it.

1. That it oppresses and hurts the Stomach; whence a *Nausea* and Vomiting.
2. That it distends the Bowels; whence an Intumescence of the *Hypochondria* and *Abdomen*, and sometimes an Inflammation.
3. That its Operation is very slow; and therefore it affords but little Relief to the Patient. For these Reasons *Daniel Ludovicus* rejects it from his *Myrothecium*. But a Medicine highly commended by the Ancients, and frequently and advantageously used by the Moderns, is not to be despised. It must indeed be cautiously made use of and seasonably. Catarrhus Affections, for which it is chiefly extolled, ought to be free from a Fever, and such as require a Medicine of this Kind, to attenuate and liquefy the fizy and concreted Serum. The same may be said of Disorders of the Breast, arising from Infarctions of the Lungs, especially of an Asthma and difficult Respiration. In acute Distempers, or where Bile

of either Sort predominates, it must be avoided; and likewise where the Blood is too active, and the Bowels over hot; of which Temperament are many melancholick, bilious, consumptive, and hysterical People, as the learned *Doctor Hecquet*, in his *MS. Treatise of Purgatives*, hath well observed.

In Decoction or Infusion Agarick hath very little Virtue. In Substance it operates more effectually. It is prescribed in Powder, or prepared under the Form of Troches, from ʒss . to ʒiss . or ʒij . and in Decoction or Infusion from ʒij . to ʒss .

The Ancients tried to correct the Faults and Inconveniencies of this Medicine by hot Stomachicks, and Aromaticks, particularly Ginger; by inciding Substances, as Sal Gem and Oxymel, whereby its Acrimony is blunted. The Moderns correct it after various Ways. Many are afraid of it in Powder by Reason of its Lightness, which makes it stick to the Coats of the Gullet and Stomach: They therefore take it in Troches. But who, pray, could every swallow this dry Powder alone? If it be mixed with any Liquor, or Syrup, it will no longer cleave to the Membranes of the Stomach, at least not so readily. Some, to moderate or extinguish its emetick and dangerous Quality, burn it: But by this Method it is destroyed, and converted into an inert Earth or Coal. Others propose the resinous Extract as preferable to the Powder: But its Taste is very ungrateful and nauseous, and hurts the Stomach and Intestines more than the Powder; so that the Correction is worse than the Drug itself.

In fine, no Preparation of it is safer than that of Troches, wherein its ungrateful nauseous Taste, and its Acrimony so injurious to the Stomach, are corrected by Aromaticks.

Some, by mixing with Agarick different Ingredients, according to their different Intentions, think

to direct its Virtue to this or that particular Part. Thus, that its Efficacy may be carried to the Head, they add *Arabian Stæchas*, Nutmeg, Aloes-wood, and Spikenard. They lead its Virtue to the Breast by Maiden-hair, Orris-Root, and Hyffop; to the Liver by Succory; to the Spleen by the Bark of Tamarisk and Spleen-wort; to the Womb by Feverfew and Myrrh; to the Bladder and Kidneys by the five opening Roots. In what Light these Directions ought to be regarded, they will easily judge, who are not too closely attached to the School of the *Arabians*.

The Troches of Agarick, in the Shops of *Paris*, are prepared thus.

Take of white Ginger bruised zj . White-wine ziv . Macerate them together cold for twenty-four Hours, and afterwards strain the Wine; then,

Take of choice Agarick rasped, and reduced to a very fine Powder ℥ss . moisten it with the above-mentioned Wine, so as to bring it into a Mass; of which make Troches, and lay them in the Shade to dry.

Take of the Decoction of Agrimony and Saxifrage zvj . the Troches of Agarick, and the solutive Electuary of Citron, ā zj . Syrup of Peach-Blossoms zj . Make a Potion.

Take Sena, Troches of Agarick, and Turbith, ā zj . Cinnamon bruised ʒj . Salt of Tartar gr. xv . Infuse them a Night in zvj . of River-water. In the strained Liquor dissolve zj . of the Syrup of Buck-thorn, to make a Potion for a Dropsy.

Take of the Troches of Agarick zj . Jalap powdered, and washed Aloes, ā gr. xij . dulcified Mercury sublimate gr. x . the distilled Oil of Amber

Amber gut. ij. of Marjoram gut. j. Conserve of Sage-Flowers q. s. to make Pills, for catarrhus Disorders.

ARTIC. II. Of GALLS.

Gallæ, Off. Knepides, Græcor. Hafs and Hafas, Arab.

Galls are Bodies growing upon Oak-trees, of which there are many Kinds, differing in Magnitude, Colour, external Roughness or Smoothness, and Figure. They grow indeed to Oaks or glandiferous Trees, but not in all Countries; since they are not found in the colder Climates. For *Ray* observes, that the *English* Oak never bears any; for which he gives this Reason, (*viz.*) because the Insects to which they owe their Origin are not met with there. They are not the Fruit of a Tree, as some imagine; but preternatural Tumours, occasioned by the biting or boring of certain Insects. For these Insects, and particularly certain Flies pierce the Buds, Leaves, and younger Twigs of the Tree: [They tear the tender Vessels, and the Juice flows from them: It arrives more abundantly at the Part, because the Resistance is diminished; and the Vessels, from a greater Quantity of Juice, are more and more enlarged.] Whence Tumours of various Forms; which, though preternatural with respect to the Tree, are yet ordained by Nature, to be as it were *Matrices* to receive, preserve, and cherish the Eggs of these Insects; to hatch their Brood, and nourish them. When Galls are opened, perfectly ripe and fresh, some small Worms, or rather *Nymphæ*, are found in the Middle. Sometimes we find but one, sometimes many in separate Cells; which after some Time become Flies, of the same Kind, or sometimes of different Kinds. Soon after they attempt to open for themselves a Passage, by gnawing the Substance of the Gall, and at length

make a round Hole in its Surface, through which they creep out, and fly away. If the Gall be not pierced, we find in it a Worm or Fly: But if it be pierced, it is found empty, or full of other *Animalcula* which have accidentally lodged themselves in it.

In the Shops are two Sorts. 1. *Oriental* or *Aleppo* Galls. 2. *European* Galls. The *Aleppo* Galls are roundish, of the Bigness of an Hazel-nut or Filberd, angular, smoother or rougher, having sometimes few, sometimes many Protuberances, ponderous, of a whitish, green, or blackish Colour, within dense and resinous, and of an astringent and acerb Taste. The *European* Galls are round, of a reddish Colour or reddish yellow, smooth on their Surface, light, easily broken, of a rare Substance, fungous, and sometimes hollow. They are inferior to the *Oriental*, both for dyeing and for Medicines. These two Sorts were distinguished by the Ancients: The former they called *ὀμφαιτίτις*; the latter *ὀνοχνητίτις*.

In a chymical *Analysis*, five Pounds of dry *Aleppo* Galls, yielded eight Ounces, seven Drachms and a Half of Liquor somewhat yellow and sub-acid; six Ounces, seven Drachms of reddish, acid Liquor, a little empyreumatick; fourteen Ounces and two Drachms of brown, saltish, acrid, empyreumatick Liquor, both acid and urinous; two Ounces, five Drachms and fifty-four Grains of thick Oil, of a Consistence like Pitch, and something foetid. The black Mass remaining in the Retort weighed twenty-eight Ounces, five Drachms and fifty-four Grains; which being calcined left two Ounces and two Grains of brown Ashes; from which were got, by Lixiviation, seven Drachms and fifty Grains of fixt alkaline Salt, extremely acrid. The Loss in Distillation was one Pound, two Ounces and four Drachms;

Drachms ; in Calcination twenty-six Ounces, five Drachms and fifty-two Grains. It appears from this *Analysis*, that Galls contain a large Quantity of thick fixed Sulphur, combined with an ammoniacal Salt.

Moreover, Galls turn a Solution of Vitriol black or rather of a deep purple. For the alkaline Salt of the Galls joining itself to the vitriolick acid Salt, separates from it the metallick Parts: Which then subside not to the Bottom ; but are united with the sulphureous Particles of the Galls floating in the Liquor, and are sustained by them. By this Property an Infusion of Galls serves Chymists and Naturalists to try Mineral Waters: For if they contain a vitriolick Salt, or any Thing of Iron or Copper, it renders them black, violet-colour'd, purple, or tending thereto, according as they are more or less loaded with the metallick Salt.

Galls are powerfully astringent: Wherefore they are commended by many in Dysenteries, Loosenesses and Hemorrhages. And very lately an antifebrile Virtue was discovered in them. This Discovery was made publick by *M. Reneaume*, a Physician of *Paris*, in the *Memoirs of the Royal Academy of Sciences*, *Ann.* 1711. They are given in Powder from ʒss. to ʒj. at the Beginning of the Fit in intermitting Fevers, in those especially, says *M. Reneaume*, which depend upon a lax Tone of the Stomach.

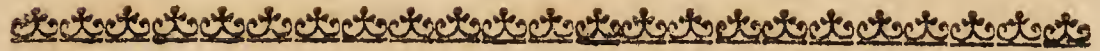
They are applied externally to astringe, repel, and to strengthen lax Parts. A Decoction of them is used against the bearing down of the Womb, and *Rectum*, and to prevent Fluxions upon them.

Take Galls and Pomegranate-barks, ā ʒj. Leaves of Sage, Laurel, Camomile, and Balaustines, ā. p. ij. Boil them in rough Wine and Smith's Water, q. s. and with the Decoction foment the Part affected. They

They are very useful to Dyers; and are also an Ingredient in Ink; the best Method of making which is this.

Take of River-water ℥iv. White-wine ℥ij. *A-leppo* Galls bruised ℥iv. Macerate them for twenty-four Hours, shaking them now and then about in the Vessel. Afterwards boil them for half an Hour, and remove the Scum with a Feather. Then taking the Vessel from the Fire, add of Gum Arabick ℥iiss. *Hungarian* Vitriol ℥ij. Roch-allum and Sugar-Candy, ā ℥ss. Let them stand together in Digestion again for twenty-four Hours, afterwards boil them a Quarter of an Hour, and then strain the Decoction through Linnen.

A SUPPLEMENT



A

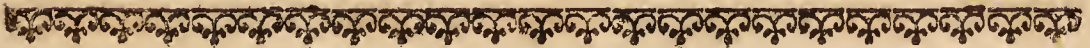
S U P P L E M E N T :

W H E R E I N

Some Foreign PLANTS, omitted in the preceding TREATISE, are referred to the several CHAPTERS to which they respectively belong.

W I T H

A short ACCOUNT of their VIRTUES, &c.



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SUPPLEMENT, &c.

To CHAP. I. add

SQUILL.

RADIX *Scillæ*, *Off.* The Root of the Squill, or Sea-Onion, is large and bulbous, being composed of many Coats folding over one another. In the Shops are two Sorts, (*viz.*) The *Red*, which is the Root of the *Scilla vulgaris radice rubrâ*, C. B. 2. The *White*, which is generally preferred, and is got from the *Scilla radice albâ*, C. B. They grow by the Sea-side in *Spain*, *Sicily*, and other warm Countries.

These Roots, usually called *Squills*, are gently emetick and purgative; powerfully opening, attenuating, deterfive and diuretick. They are therefore good to cleanse the Stomach, Intestines, and Lungs of thick viscid Phlegm, and are very useful in the Dropsy, Jaundice, Cachexies, and against all Obstructions arising from tough Humours. They are commonly given prepared in Vinegar, Oxymel, Syrup, or Wine, to ζss . ʒvj . or ʒj . though sometimes in a much larger Dose. They are moreover reckoned alexipharmack, on which Account the Troches made of them are an Ingredient in *Venice-Treacle*.

To C H A P. III. add

LOG-WOOD.

LIGNUM tinētile *Campechense*, Off. *Lignum Campechianum*, Species quaedam *Brasil.* Jo. de Laet. Sloane, *Cat. Jam.* p. 313. The Tree from which Log-wood is cut, is described by Breynius, *Prodr.* 2. 37. under this Title; *Crista Pavonis Coronillæ folio secunda, sive tinctoria Indica, flore luteo racemoso minore, siliquâ latissimâ glabrâ, Lignum rubrum Sappan dictum ferens.*

“ This Wood (says Sir Hans Sloane *,) is generally cut into Logs about a Yard in Length, and two or three Inches Diameter. ’Tis of a dirty Colour on the Outside from the Injuries of Weather, Dirt, or Salt Water, but within is of a pale brown reddish Colour. ’Tis heavy, and the Outside or Sap of it is generally chopp’d off by those who cut it, thereby clearing it of what is not useful to Dyers.

“ It is cut about the Town of *Campeche* in great Quantities, and brought to *Jamaica* in Sloops, to be sent into *Europe* by the Traders in *Jamaica.*”

It is a powerful Astringent, and a very good Medicine in Loosenesses: Wherein it is sometimes given in Decoction; but more usually reduced to an Extract, from ℞j. to ʒss. or ʒj. either in a Bolus, or diluted with some proper Vehicle, and repeated as the Case requires.

To C H A P. V. add

TOBACCO.

FOLIUM *Nicotiane*, Off. The officinal Tobacco is the Leaf of the *Nicotiana major latifolia*,

* *Natural History of Jamaica*, Vol. II. p. 183.

folia, C. B. It grows naturally in *Brasile* and some *American* Islands, and is also very much cultivated in those Parts. It is likewise sown in our Gardens, and flowers in *July* and *August*.

Tobacco is narcotick and anodyne, occasioning Drowfiness and easing Pains, particularly the Tooth-ache, if chewed in the Mouth or smoked in a Pipe. If taken into the Stomach it proves violently emetick and cathartick: Yet some have attempted to deprive it of these bad Qualities, and not without Success. To this End, *Quercetan* directs its Juice to be digested in Hydromel and Oxymel for two or three Days, and then to be made into a Syrup; which he, and others, greatly commend to incide and deterge tough Phlegm, in Asthmas and stubborn Coughs. The Dose is from half a Spoonful to a whole one, for several Days successively. An Infusion of Tobacco is recommended by some Authors to be injected by way Clyster in sleepy Disorders; but, when thus used, it sometimes brings on Convulsions, Vomitings, Tremblings, cold Sweats, and other bad Symptoms, which in a short Time, if not remedied, generally terminate in Death. It is of Service, either smoked, chewed, or taken in Snuff, to People of cold or phlegmatick Temperaments, or who are subject to Defluxions. It requires, however, to be used with Discretion: For a learned Author * informs us, that an immoderate Use of it emaciates the Body, frequently causes a sudden Death, and always impairs the Memory.

The fresh green Leaves, boiled in Oil and made into an Unguent, are very good to deterge and cleanse old Sores or Ulcers. They are likewise advantageously applied, in Plaisters, to resolve hard Swellings.

* *Chomel, Abrege de l'Histoire des Plantes usuelles. T. I. p. 128.*

To C H A P. VI. add

ALMONDS.

AMYGDALÆ dulces and *Amygdalæ amarae*,
 Off. sweet and bitter Almonds of the Shops. These are too well known to need Description. They ought to be chosen smooth on the Outside, and very white within; for when they are wrinkled, and turning yellow, they are unfit for Use, being strong and rancid. They are the Kernels of a Fruit, something like a small Peach. The Trees to which the officinal Almonds belong are distinguished, from the Taste of the Kernel, into *Amygdalus dulcis*, the Sweet Almond-tree, *J. B. I. 174.* And *Amygdalus amara*, the Bitter Almond-tree, *C. B. P. 441.* They grow in *Barbary, Spain, Languedoc*, and other warm Climates.

Sweet Almonds are softening, pectoral, and nutritive, but hard of Digestion; being apt to stuff up the Stomach, and, if not well chew'd, to pass through the Intestines unaltered. They are mostly given in Emulsions, in which Form they abate the Heat of the Humours, by obtunding their Acrimony; and are therefore thus prescribed in ardent Fevers, Wakefulness, Heat of Urine, Inflammations of the Kidneys and Bladder; Pains, Loosenesses, Dysenteries, Hemorrhages, and such like Disorders. Emulsions prepared from them are likewise very serviceable to consumptive People, especially when inclined to sweat.

The expressed Oil efficaciously softens and relaxes the Fibres, and blunts the Acrimony of the Humours. It is given in inflammatory Diseases, in nephritick and colick Pains, in Dysenteries, and Coughs; as also against Dryness or Costiveness of
 the

the Belly. The usual Dose is from ζ ss. to ζ j. and from ζ j. to iv. in Clysters.

Bitter Almonds are accounted inciding, detensive, opening, diuretick, and good to kill Worms; but they are seldom taken by Reason of their Bitterness. Their expressed Oil, being drank from ζ ss. to ζ j. in Broth, is said to provoke Urine, loosen the Belly, help spitting, and to discuss Wind. Externally it is commended to resolve inflamed Swellings of the Tonsils, and others, and to mitigate Pains. It softens and loosens hard Ear-wax occasioning Deafness, and for this Purpose is sometimes dropt upon Cotton and put into the Ears; but if the Deafness proceed from another Cause it is improper; for *Hoffman* observes, that it very often relaxes the Membrane of the Drum, and so increases the Disorder. Moreover, the Oil of bitter Almonds is used as a Cosmetick to take Tan and Freckles off the Face; and, mixed with the Oil of Eggs, it prevents Pitting in the Small-Pox.

The WILD CUCUMBER.

Cucumis agrestis, Off. The wild Cucumber is about an Inch and Half or two Inches long, rough on the outside, having a great Number of small Protuberances with harmless Prickles standing upon them; within divided into three Cells, wherein is contained a bitter Pulp with several broad, smooth and dark colour'd Seeds; which, when the Fruit is quite ripe, upon pressing it gently with the Hand, immediatly squirt forth to a considerable Distance. The Plant which produces it is the *Cucumis Sylvestris aspinus dictus*, C. B. P. 314. It grows spontaneously in the Southern Parts of *France* by the Way sides, and with us is planted in Gardens.

This Plant abounds with both a thick and thin Sulphur, a copious ammoniacal Salt, with a moderate Quantity of nitrous Salt. The whole Plant, when dried and thrown upon Gledes, flashes as if replete with Nitre, and disperses a foetid Smell from its thick Oil.

All Parts of the Plant are strongly cathartick; but more especially the Fruit, which purges upwards and downwards with great Violence. Its expressed Juice, inspissated by Evaporation, is the *Elaterium* of the Shops, which many Physicians extol for purging off the Water in Dropsies; but its Operation is so extremely vehement, that it ought not to be used but with the greatest Caution. The Dose is commonly confined between gr. fs. and gr. v. though the Ancients, and also some modern Authors have ordered it in a much larger Quantity. However, it is safest in the Beginning to prescribe it only from gr. fs. to gr. ij. as a *Stimulus* to other Purgatives, and corrected with Stomachicks, and afterwards to increase the Dose gradually according to its Effects, and the Strength of the Patient.

OLIVES.

Olivæ, Off. Olives are a Fruit of an oval Figure, and different Magnitude, some being as big as a large Plum, according to *Mr. Miller* *, and others a great deal less, having a long pointed Stone in the Middle. When they come to us in Pickle or Brine they are generally of a greenish Colour, but if suffered to hang upon the Tree till quite ripe, they become black, and very hot in the Mouth. The Tree which bears the officinal Olives is the

* *Botan. Officin.* p. 319.

Olea Sativa, C. B. It grows in *Spain*, *Provence*, *Italy*, and other warm Climates.

Pickled Olives, being eaten before Meals, says *Schroder*, provoke an Appetite, raise and comfort a moist Stomach, and move the Belly. But I have here inserted this Fruit on account of its Oil, expressed from it when ripe; which is not only used in Salads and other Dishes at Table, but is of great Service in many Purposes of Physick. It loosens the Belly, softens sharp Humours, lubricates and relaxes the Fibres; is useful in Disorders of the Breast, in Coughs, Pleurifies, and other Inflammations; gives Relief in the Colick, Dysentery and *Tenesmus*; and helps the Stone and Gravel. It has likewise a sovereign Efficacy for preventing the Corrosion, and fatal Consequences of many Poisons; as also against Super-purgations, and other bad Effects from acrimonious Purgatives: But in these Cases it ought to be given in large Quantities by the Mouth, and to be injected plentifully in Clysters.

Externally it softens Tumours and promotes Suppuration, and being beaten up with Wine makes a good Liniment for Burns. It is used in many Cerates, Plaisters, and Unguents of the Shops.

The *Oleum Omphacinum*, which, as many report, is expressed from unripe Olives, seems to be rather a mucilaginous Juice than an Oil; because, before the Olives are ripe no Oil can be got from them. For this Reason, some Authors suppose that the *Oleum Omphacinum* of the Ancients was factitious, (viz.) that it was made by infusing some astringent Substances in common Oil.

PRUNES.

Prunæ Gallica, Off. These are brought from France, where they grow upon the *Prunus Sativa*, J. B. *Prunus*, C. B. They are cooling and moistening. They temper the Acrimony of the Humours, and also loosen the Belly, and are therefore put into the Lenitive Electuary. They are sometimes infused with Sena, to render its Taste more agreeable to Children, and People of weak Stomachs.

ANISEED.

Semen Anisi, Off. This is a small striated Seed, of a greenish Colour, a pleasant Smell, and a warm sweet Taste. The Plant which bears it is the *Anisum Herbariis*, C. B. *Apium Anisum dictum*, Inst. R. H. The Seed is sown in France and Germany, but the best is said to come to us from Spain.

This Seed abounds with an acid Salt involved in a large Quantity of Oil, and hence arises its sweet Taste.

It is one of the four greater hot Seeds: the other three are Cummin, sweet Fennel, and Caraway.

The Ancients have commended the Seed of Anise as an excellent Remedy for cold and moist Stomachs; and it is given with Success to help Digestion and prevent Crudities. It hinders the Milk from curdling in the Breasts of Nurses; and increases its Quantity very much, if boiled and drank in Cow's Milk. In the Gripes of young Children it is very beneficial; as also in their Convulsions arising from bad Humours in the Bowels, and on this account *Helmont* terms it *Solamen intestinorum*.

Heurnius asserts that ℞j. powdered and given to Children in their Pap, purges them as effectually as Rhubarb does older People. It

likewise provokes Urine and the *Menses*; and in Hoarseness, Coughs, Asthmas, and other Disorders of the Breast and Lungs proceeding from thick crude Humours, it is of very great Service; infomuch that some have called it *Anima Pulmonum*. Moreover it is often joined to Catharticks to prevent their Griping. The Dose in Powder is from ℥j. to ʒj.

Its Oil is obtained either by Expression, or by Distillation. The expressed Oil may be given to gut. xx. and the distilled Oil from gut. ij. to x. They have both the same Virtues with the Seed in Powder. With the Oil obtained by Expression is prepared the *Balsamum Sulphuris Anisatum*, which, in Coughs, Shortness of Breath, and Asthmatick Complaints, is no contemptible Remedy. The distilled Oil is sometimes rubbed upon Childrens Navels to ease the Gripes; and is used to correct some purging Pills. It is also to allay colick Pains put into Clysters, in which the Seed or other Ingredients have been boiled.

The Seed of BISHOP'S WEED.

Semen Ammeos, Off. This is a small Seed less than Parsley-seed, of an acrid bitterish Taste, and fragrant Smell. The Plant which produces the sort now used in the Shops is the *Ammi majus*, C. B. *Ammi vulgare majus latioribus foliis, Semine minus odorato*, J. B. It grows common in France, and in most warm Countries.

This is one of the four lesser hot Seeds. It is drying, stomachick and good to expel Wind, and is serviceable in Obstructions of Urine, or the *Menses*. Some Authors commend it against Barrenness in Women; and *Simon Paulli* accounts it an efficacious Medicine for the *Fluor albus*. The usual Dose is from ℥j. to ʒj. in Powder.

Carrot-Seed of CANDY.

Semen Dauci Cretici, Off. This is an oblong striated Seed, pointed at both Ends, but more at one than the other, and swelling in the Middle. It is covered with a kind of hoary Down, and has a pleasant, though gentle, Smell, and an hot aromattick Taste. The Plant which bears it is the *Daucus foliis Fœniculi tenuissimis*, C. B. P. *Daucus Creticus Semine hirsuto*, J. B. It grows plentifully in Candy, upon the Alps of Germany, and in many eastern Countries.

This Seed abounds with an aromattick oily Salt, and yields a copious essential Oil in Distillation.

It is one of the four lesser hot Seeds. It attenuates and incides thick tough Humours, expels Wind, opens Obstructions, and provokes the *Menses*, and Urine. It is commended for the Stone and Gravel; Stranguries, chronical Coughs, Hickups, and flatulent Colicks; and being infused to ʒij. in white Wine, and taken at a Draught, is of great Service for removing hysteric Fits, and other uterine Disorders. It is also reckoned alexipharmack, and is therefore an Ingredient in Venice Treacle and Mithridate. It may be given in Powder from ʒj. to ʒj.

CUMMIN-SEED.

Semen Cymini, Off. This is a striated Seed about a Quarter of an Inch long, of an ashy Colour tending to a yellowish brown, of a warm bitterish Taste, and strong Smell. The Plant to which it belongs is the *Cuminum Semine longiore*, C. B. P. *Cuminum sive Cyminum sativum*, J. B. *Fœniculum orientale*

orientale, Cuminum dictum, Inst. R. H. It is sown in great abundance in the Island of *Malta*.

Cummin-Seed, in a chymical *Analysis*, affords a large Quantity of Oil, and of Phlegm both acid and urinous. It therefore contains an aromattick, oily ammoniacal Salt.

It helps the Concoction of Food, and discusses Wind; is very serviceable in the flatulent Colick, Tympany, and Giddiness arising from bad Digestion, either internally or externally; Though for internal Use Caraway-Seed is commonly preferred, as being more agreeable.

Cummin-Seed is often applied in Plaisters, to remove Pains in the Sides, Breast, Stomach and Belly; and is frequently put into carminative Clysters.

Its essential Oil is prescribed to gut. iij. in Disorders proceeding from Wind; and is sometimes dropped upon hot Bread, and applied to the Navel.

Sweet FENNEL SEED.

Semen Fœniculi dulcis, Off. This is a long striated Seed, much larger than that of the common Fennel; as also of a paler Colour, and sweeter Taste. The Plant producing it is the *Fœniculum dulce, C. B. P.* *Fœniculum dulce majore et albo Semine, J. B.* It grows in most Southern Countries, but the Seed is said to come to us from *Germany*.

It is carminative, stomachick, pectoral, diuretick, and sudorifick. It gives great Ease in collick Pains, expelling Wind both upwards and downwards: Whence this common Adage,

Semen Fœniculi reserat Spiracula Culi.

It incides thick slimy Humours in the Stomach,
 G g 4 and

and is of great Service in difficult Digestion, taken either before or after Meals. *Simon Paulli* extols its Virtues in putrid and malignant Fevers, and says nothing is preferable to a Decoction of it in the Measles and Small-Pox. It increases the Milk of Nurseries, and, being mixed with Pectorals, relieves asthmatick Complaints, and stubborn Coughs. It is also wonderfully commended for preserving the Sight, and repairing it when decayed. The usual Dose is from ℥j. to ʒj. It is sometimes employed to correct purging Medicines. On account of its sudorifick Virtue it is an Ingredient in *Venice Treacle* and *Mithridate*; and a Water is distilled from it, which is kept in the Shops, and prescribed as a Diuretick.

Externally it is used to good Advantage in discutient Cataplasms and Fomentations.

An essential Oil is distilled from it, which, from gut. vj. to xij. received upon Sugar and dissolved in Wine, is an excellent Carminative, powerfully discussing Wind in the Colick. It likewise promotes Digestion, and being taken in a pectoral Decoction is serviceable in Coughs and Asthmas.

FENUGREEK-SEED,

Semen Fœni Græci, Off. This Seed is of a moderate Size, and rhomboidal Figure, with a Groove, and slight Furrow running obliquely from Corner to Corner. It has a yellowish Colour, a mucilaginous Taste, and strong Scent, though something pleasant to many People. The Tree upon which it grows, in a long slender Pod, somewhat flat and crooked, is the *Fœnum Græcum Sativum*, C. B. P. It is sown in many foreign Countries in the Fields, but the Seed is brought to us mostly from *Germany*.

This

This Seed seems to consist of an ammoniacal Salt enveloped in a large Quantity of Sulphur, both thick and thin, and a copious Earth: Whence arises a mucilaginous Compound, which may be drawn from it by Coction.

It softens Tumours, digests, ripens, and discusses, and also allays Pains. Its use is so common, that it is put into most emollient, ripening, or discutient Fomentations and Cataplasms, being either reduced to Meal, or boiled in Water to a Mucilage. It is advantageously prescribed in emollient, carminative and anodyne Clysters, to discuss Wind, obtund the Acrimony of the Humours, and cover the Intestines deprived of their Mucus, in Colicks, Loosenesses, and Dysenteries. But *Simon Paulli* observes that its Smell is very offensive to some Women, particularly to such as are hysterical, and therefore that it ought not to be inconsiderately put into Clysters for that Sex. The Mucilage extracted from it by Water is of Service to Blood-shot Eyes, and both *Simon Paulli* and *Riverius* commend it in Ophthalmies.

HARTWORT-SEED.

Semen Seseelis, Off. This is an oblong striated Seed, with a foliaceous Border on each Side, of a greenish brown Colour, a fragrant Smell, and an acrid, bitterish, aromattick Taste, something like a Mixture of Orange-Peel and Cummin-Seed. The Plant to which it belongs is the *Ligusticum quod Seseeli Officinarum*, C. B. *Siler montanum vulgare*, J. B. It grows upon the *Alps*, upon the Hills in some Parts of *France*, and other warm Countries.

The Seed of Hartwort is heating and drying, provokes the *Menses* and Urine, and expels Wind. *Dioscorides* directs it to be given in Wine to assist
Digestion,

Digestion, and to appease Gripings of the Bowels. He likewise recommends it against hysterical Affections, and Epilepsies; and moreover tells us that it forwards the Birth and After-birth: but it is not much used, unless in *Venice Treacle* and *Mithri-date*.

Macedonian PARSLEY-SEED.

Semen Petroselini Macedonici, Off. This is a Small striated Seed, somewhat villous, of a dark green Colour, according to *Dale*, and an acrid aromack Taste, and fragrant Smell. The Plant which bears it is the *Apium Macedonicum*, C. B. *Apium sive Petroselinum Macedonicum*, J. B. It grows upon rocky mountainous Places in some warm Climates, and is sown here in Gardens, but produces very little Seed.

The Seed of *Macedonian* Parsley is warm and carminative, and provokes Urine and the monthly Purgations. It is attenuating, aperient, and alexipharmack; and is therefore, says *Schroder*, an Ingredient in *Venice Treacle*.



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ERRATA.

PAGE 53. line 17. and p. 58. l. 7. for *with*,
 read *in*. p. 63. l. 29. r. *both the Indies*. p. 78. l.
 31. f. *the Experiment he had made*, r. *the Means of his*
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