

A critical dissertation upon the manner of the preparation of mercurial medicines, and their operation on human bodies ... also, a demonstration that all the methods hitherto invented in order to convey quick-silver internally into the blood, retaining its metalline texture and properties, have proved abortive. As also, a certain method of introducing the same metal ... internally into the blood ... / Addressed to the Royal College of Physicians, by T--K --, a member of the same [i.e. Thomas Knight].

Publication/Creation

London : H. Noorthouck, 1734.

Persistent URL

<https://wellcomecollection.org/works/p6fcqphc>

License and attribution

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.

**wellcome
collection**

Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>



wee-ger

90

31380/B

Thomas Knight

LRCP 1729

L. xvi. Mer

KNIGHT, Thomas
C

186(42)



Digitized by the Internet Archive
in 2019 with funding from
Wellcome Library

op R.

A CRITICAL
DISSERTATION

UPON THE
Manner of the PREPARATION of
MERCURIAL MEDICINES,
AND THEIR
Operation on Human Bodies; particu-
larly Those most in Fashion :

A L S O,

A Demonstration that all the Methods hitherto
invented, in order to convey Quick-silver
internally into the Blood, retaining its
metalline Texture and Properties,
have proved abortive.

A S A L S O,

A certain Method of introducing the same Metal
in its essential or native Dress internally into the
Blood; and the Manner of it mechanically
explain'd ; not publish'd before.

Address'd to the Royal College of Physicians, *London.*

By T—K— a Member of the same.

Hac non successit, aliâ aggrediamur viâ. Terent.
Τέχνη κατάρμεν ἐν φύσει κατάρμεθα. Arist. Eth.

L O N D O N: Printed for HARMEN NOORTHOUCK
in *Russel-Court, Bridges-Street*, against the Chapel. 1734.

Price One Shilling and Six Pence.



T O T H E

Most Worthy and Learned

M E M B E R S

O F T H E

Royal College of Physicians
in L O N D O N,

The following Sheets are humbly submitted,

By their most Faithful, and

Obedient Humble Servant,

TO THE

MEMBERS OF THE

ROYAL SOCIETY

OF LONDON

Presented to the Society

at a Meeting held on

the 15th day of January

1781

By

J. K.



T H E
P R E F A C E.

MY Design in this Treatise, is to prevent the intermixing of Speculative and chimerical Whimfies with certain and evident Truths; by which I understand such things as have the full Approbation of our Faculties, and confirm'd by Experiments and Observations.

I hope I may be allow'd among so many far more consummate Philosophers, Physicians and Criticks, to offer my Mite, since a Stander-by may sometimes perhaps see more of the Game than he that plays it. Especially if I may be allow'd to have a sufficient Knowledge of those Absolutes, Anatomy, *Materia Medica*, and Natural Philosophy, which are necessary to discover the hidden Sources of Distempers, and the Nature of Remedies proper to remove those Disorders.

The P R E F A C E.

Tho' the taking of Quick-silver in all Cases and Circumstances alike, is become a Fashion, and has so far prevailed among the Populace as to carry with it almost an universal Approbation and Consent: And, tho' *Mercurius Alcalisatus* is so modish a Medicine, and so much extoll'd by some of the Faculty; as is also *Aqua Argentea* or Silver Water; Yet till we have fuller Evidence of the Success of them, both with regard to the safety and the certainty of their entering the Lacteals to mix with the Blood, or what Feats extraordinary they produce in the *Ductus Alimentalis* or first Passages; we ought to suspend our Judgment and not be over-hasty in encouraging a Practice which does not seem as yet sufficiently supported either by Reason or Fact.

For we are told that he that wantonly transgresseth in taking what may prejudice Health, is guilty of a Degree of Self-Murder, and a perseverance therein after self-evident Danger is direct *Suicide*. And it is well known that the best Remedies have their *Nocumenta* (*nil prodest, quod non lædere possit idem*) when ill-administer'd, over-dosed or abus'd thro' Folly and Ignorance; some Poisons being so only by their Quantity.

The P R E F A C E.

I shall not only shew the Unreasonableness of Prescribing crude Mercury *per se*, as a Potion; (in order to be convey'd into the Blood with any certainty) but shall likewise justly condemn the famous Specifick *Mercurius Alcalisatus*, and the Silver Water: And demonstrate which of the mercurial Clafs taken into the Body operate in the *Primæ Viæ*, and which be that pass the Lacteals, and operate in the most minute Recesses of the Body.

Mercury sometimes gets into the Blood when taken *per se*, but the Quantity is uncertain, for it is *per accidens* that some Particles are render'd so minute by the Structure and Mechanism of the Ventricle and Intestines, as to become specifically lighter than the intestinal Fluids, and suspended therein, and thereby convey'd into the Blood. And this is confirm'd by Numbers daily Experimenting (or *impunè ludere de corio humano*) and from the Account we have of its Effects from its chief * Votaries and Advocates.

Here I may with *Archimedes* the Geometrician (when he had solv'd the King's Problem;) cry out *Εύρηκα*. For I have found out a certain Method of introducing Quick-silver internally into the Blood (and

* *Belloste* and *Dover*.

The P R E F A C E.

mechanically explain'd the Manner of it) not so much by the Assistance of *Algebra*, (reducing physical Quantities and Numbers in the Body of Man, to a Mathematical Standard;) But by the help of the Speculative and Practical part of Chymical and Galenical Pharmacy, which are undoubtedly some of the most indispensable Qualifications of a true Physician.

Chymistry is become exceeding useful in all the Parts of natural Philosophy; to wit, Speculative Philosophy is made practical, for at the same time it explains things, it actually exhibits them to the Eye. And this is the Philosophy so much recommended by the sagacious *Verulam*. And it is by means of Chymistry, that Sir *Isaac Newton* has made a great part of his surprising Discoveries in natural Philosophy, &c.

By this Discovery we have a proper *Succedaneum* in lieu of those Mercurial Medicines that have been injudiciously amass'd together, and ought to be expung'd: For it will answer all the Intentions of Cure, as being render'd Soluble or capable of Suspension in the Fluids of the Body, and subjected to the Laws of Circulation; and this, *Candidus imperti*.

And it will be a means to remove some of the most obstinate chronic Distempers, by Virtue of its de-obstruent Power: (but
always

The P R E F A C E.

always observing the necessary Rules of Caution in the Administration of Mercurial Medicines in Hectical and Plethorick Habits) And, it will prevent the too frequent necessity of using the extirpating Knife or imposthume Lancet. For all Tumours, Pustules, Ulcers, and Discolorations (are but the Effects of some kind of Obstruction or other) of whatever Nature or Kind, by the Use of this Medicine may be dissipated and remov'd, and the Solids recover their due Oscillation, and the Fluids their Fluidity.

But I dare not flatter my self that this my Labour shall be exempted from the ordinary Fate of Censure: For there have been no Truths yet discover'd, which have not been question'd and opposed. Such is the Power of Prejudices and Prepossessions, that they will very often bear down the most flagrant Evidences of Sense, and oblige Men by false Glosses even to assent to such Things as in their own Nature are real Absurdities; as may be instanc'd in several Philosophical Matters.

There is nothing which the Antients in general held in more Contempt and Detestation, than the Judgment of the Populace. The Statesman refus'd to submit his Design to it; the Philosopher scorn'd to have his Opinion canvass'd by it; nor
would

The P R E F A C E.

would the Poet ever allow it to be the Test of his Fancy.

Herein I shall copy after 'em by laying down the many Experiments and Observations I have made in order to discover the real Properties and Virtues of Mercurial Medicines, and submit them to the Censure of the most Illustrious the Royal College of Physicians in *London*. For there is no Composition under the Sun, which has, or shall come within their Speculation, but their Censure, Disesteem, and Contempt will always over-balance.

It may be expected, perhaps, that I shou'd give an Historical Account of the Success of this new Method of introducing Quick-silver internally into the Blood; but instead of that, having not had sufficient time to make many Trials, (yet sufficient to convince me that it is the best Method to exert its Power, in its native Dress of any hitherto discover'd) I shall conclude my Preface with the following Motto,

Nullius in Verba.

Read, Judge, and Try.

T H E

T H E

C O N T E N T S.

- T**hat Medicines have their Rise and Declensions like our Fashions. Page 1
- That the Traditionary Account of the Virtues of any Drug or Medicine, that is not confirm'd to us by Experiment and Observation, may be liable to be worn out by Time. ibid.
- That the Manner of Preparation and Operation of Mercury is not rightly understood. 2
- That the Nature and Manner of its Operation when Crude or in a Compound State, when admitted into the Blood, is already most accurately explain'd. 3
- How it is obtain'd or produc'd. ibid.
- How it is purify'd. 4
- How noxious and injurious it is to those People that work in those Mines. ibid.
- The Precaution they use. 5
- Aurum Fulminans not useful in checking or lowering a Salivation. ibid.
- The Nature of Quick-silver, not hitherto Analytically explain'd. ibid.
- Mr.

The CONTENTS.

<i>Mr. Homberg's Opinion concerning its constituent Parts or Principles.</i>	Page 6
<i>Helmont's Opinion.</i>	ibid.
<i>Paracelsus's Opinion.</i>	ibid.
<i>Its Nature partly discover'd in the Preparation of Præcipitatum per se.</i>	ibid.
<i>That all Preparations of Mercury (by whatever means affected) are liable to be restored to the same Homogene Body, or to its numerical Self.</i>	7
<i>That the chief Design of this Book, is to inquire into the Nature and Manner of the Operation of the Mercurial Medicines most in Fashion.</i>	8
<i>The Manner of preparing them.</i>	ibid.
<i>That Quick-silver will incorporate with insipid Calxes or any Earth, so as not to be separated but by Fire.</i>	9
<i>That every true Definition according to the Doctrine of the Philosopher must consist ex Genere & Differentiâ.</i>	ibid.
<i>The Properties of Quick-silver, whence we gather how it operates in the Primæ Viæ, and how, per accidens, it enters the Lacteals.</i>	10, &c.
<i>That before it can with any Certainty be convey'd into the Blood, there must be a Cause qualified to produce the same constant and immutable Effects.</i>	15
<i>That it will cure an Asthma Convulsivum: whose Cause lies in the Stomach, and will also</i>	

The CONTENTS.

- also cure that Asthma whose Cause lies latent in the Lungs.* Page 17
- That there are many particular Propositions of eternal and unchangeable Verity.* 18
- Some general Propositions, as a Basis of the following Theory, in order to introduce Quick-silver internally into the Blood.* 18, 19.
- The General Corollary.* 20
- The Necessity of knowing the Nature of each Ingredient before we can be proper Judges of the Nature of the Compound.* 22
- How the Fluidity of Mercury is lost in the Preparation of Mercurius Alcalifatus.* 23
- The Property of this Powder consists solely in destroying the Acidity reigning in the first Passages.* *ibid.*
- That Mercurial Medicines vary their Effects in the Body, only as the Mercurial Globules are differently combin'd with Salts.* 24
- That there is something efficacious in the Saline Preparations: But those Preparations with Sulphur give nothing perceptible in that Form.* *ibid.*
- That Sulphur bridles the sensible Appearances and Operations of Mercurial Medicines, only by being too gross or insoluble to enter the Lacteals, &c.* 25, 26
- That the Cures that are perform'd by such Medicines must be intirely owing to the other*

The CONTENTS.

other Ingredients, and not to the Mercury.

Page 27, 28.

That Water cannot be impregnated with the Mercurial Particles by boiling it therein.

29

That Mercury hath no volatile Parts, or subtile Principles, but that its Spheres are easily rarify'd by Fire, or a greater Division of its similar or integral Parts.

30

That neither Reason nor the Knowledge of the Nature of things cou'd direct us to blend Quick-silver and Crabs-Eyes in order to produce a valuable Effect.

31

That some Medicines cure Distempers by causing different Impressions upon the Stomach only.

32

Observations confirming the Assertion.

33

That some Drugs or Simples have their Virtues exalted by blending therewith another Ingredient. And that there be others, whose Virtues are likewise improv'd by taking away. And others not improv'd by either.

34

Proof from Reason and Experience.

35

That Mercurius Alcalifatus can act only as an Absorbent, and that in the Alimentary Tube.

36

A proper Succedaneum in lieu of those Medicines, that are prov'd ineffectivè, and ought to be expung'd, calculated to the general

The C O N T E N T S.

- general Propositions laid down.* Page 37
- The Ingredients and the Manner of preparing the Succedaneum, properly called Electuarium Polychrestum.* ibid.
- That Quick-silver may be convey'd into the Blood, either external or internal.* 38
- The Method of introducing it internally hath lain undiscover'd till this Day.* ibid.
- The Discovery of that of Uñction to raise a Salivation, was owing to Chance.* ibid.
- How Quick-silver, by this Preparation, is render'd capable of being suspended in the Fluids of the Body.* 41
- That loading the Blood with Quick-silver without any sensible Operation, as that of a Ptyalism, is not feasible.* 44
- Wha^t has put Physicians upon this way of Thinking and Experimenting, was a small Treatise of a French Physician, wherein he endeavours to prove, that a Lues may be cured without a Salivation* 45
- Dr. Friend's Opinion of the Matter.* ibid.
- That the salutary Effects of Mercury are not independent of any Evacuation at all.* 47
- The Manner of crude Mercury's promoting Secretions.* 49
- Its Gravity to that of the Blood.* 50
- One great Objection against the Use of crude Mercury.* ibid.
- The Objection fully answer'd.* 51

The

The CONTENTS.

- The Case of the ingenious Dr. Francis Fuller.*
Page 52
- To obviate the like Objection, when Quick-
silver enters the Blood by the Lacteals.* 53
- The Heat of our Bodies insufficient to disen-
gage any of its Principles.* 54
- That Mercury may be prepar'd so as to ap-
proach the nearest of any thing in Nature
to an Universal Medicine.* ibid.
- Among all the Preparations of Mercury none
so promising in answering all the Inten-
tions of Cure, as Præcipitatum per se.* 55
- That it retains that singular alterative Vir-
tue of the Metal, when crude.* 56
- Its Excellency in the Lues Venerea, where
the Body thro' Mismanagement has brought
on a Marasmus.* ibid.
- Its usual Dose.* 57
- It will prove Emetick, and Cathartick, and
even raise a Salivation, if it be given in
large Doses, or small ones without due In-
tervals.* 58
- How to prepare it for a larger Dose, and
how it is so qualify'd by the Additaments.*
ibid.
- The Nature of the infecting Matter in the
Lues canvass'd.* 59
- That an Acid Distemper yields to Alcalious
Remedies, and the Lixivial to an Acid.*
60, &c.



A

Critical Dissertation

U P O N T H E

Manner of the Preparation of Mercurial Medicines, and their Operation in Human Bodies, &c.

MEDICINES have their Rise and Declensions like our Fashions; without any Shew of any true Principle, either as to the Manner of Preparation and Composition, or Intention of Cure. But Time wears out the Figments of Opinion, and confirms such Notions that are grounded upon true Judgment and the Nature of Things.

The Traditional Account of the Virtues of any Drug or Medicine, that is not confirm'd to us by Experiment and Observation, may be liable to be worn out by Time: Whereas a Judgment of

B

Nature;

Nature, built on the Verity of Things, will continue as long as Nature it self.

Tho' Mercury or Quick-silver has long had a share in Medicine, so as to be rank'd among the capital ones; yet those Preparations, which are in order to convey it internally into the Blood, retaining its metalline Texture and Properties, seem not to be rightly understood, and to fall short of the Intention: And its *Modus Operandi* in its native Dress, when taken by the Mouth, has not been sufficiently explain'd.

And this I shall demonstrate in the following Discourse by Experiments and Observations; some of the mercurial Class having escaped the late Disquisitions and Improvements in the *Materia Medica*.

The justly admir'd Reasonings and Politeness of the present Age, from the Assistances of Geometry and Mechanicks, has dissipated the Darkness and Obscurity in Chymical and Galenical Pharmacy, whereby we are taught the *Methodus Præscribendi*, which intirely depends upon a Knowledge in Chymistry.

For by Chymistry we are capable of forming a just *Rationale*, and of judging what Medicines are soluble in the Fluids of the Body, and how to render others so: And it is by chymical Experiments

we

we learn the Action of one Body upon another; and the Effects produced by those Actions.

It is undeniably true, that the Nature and Properties of this Metal, when Crude and in a Compound State, and the Manner of its Operation, when admitted into the * Blood, are accounted for with such Exactness and Accuracy, by the Rules of Mechanism and the Laws of Motion, even to the Evidence of a Demonstration, that there is no room left to add, or to further illustrate the same.

Before I begin with the Manner of its Preparation, and Operation in human Bodies; I shall give a short Account how it is produc'd. The Method of its Purification, and the dismal Effects attending the Refiners, or those People that work in those Mines, and the Precaution they use.

Mercury is either found an actual running Form, in the Mines, and thence called *Virgin Mercury*; or else it is forc'd out of mineral Bodies by Distillation. The greatest part of these mineral Bodies are of the Nature of Cinnabar, tho' mix'd along with a deal of

B 2

gross

* *Vide* Dr. Cheyne's new Theory of Fevers. And Dr. Mead's mechanical Account of Poisons.

gross, earthy Matter: but others again are merely stony.

The Method of purifying of it from the Saturnine, Antimonial, Bismuthine, or Arsenical Concretions that adhere to it, is by passing and repassing of it frequently through Chamois Leather. But the best way is by rubbing it well in a glass Mortar with Vinegar and Salt, then washing it off with Spirit of Wine. But the very best way of all seems to be by reviving it out of Cinnabar, Sublimate, Precipitate, or an *Amalgama*.

To prove its Purification is by chasing the Mercury out of a silver Spoon by the Heat of Fire; and if it leaves nothing behind but a white or yellowish Spot, it is thought to be fine and good. But if it leave any kind of Substance that will not evaporate, or a black and dark Spot in the Spoon, it is adulterated, or not well purify'd.

The following Account shews how noxious and injurious it is to those miserable People condemn'd or hir'd to work in those Mines, and in the Preparation, or rather Separation of this Metal: If it fixes upon the Solids, as musculous or tendinous Parts, causes Soreness, Lameness, &c. If upon the Nerves, causing Palsies, Spasms, Contractions, &c. If the *Spinalis Medulla*,
and

and the Brain, causing Convulsions, Apoplexies, &c. If upon the *Periosteæ* or Bones, acute Pains, Soreness, Caries or Rottenness succeed, &c.

But when the Mercury has once gotten the ascendant in the Body, their Teeth drop out, and they soon become Paralytic and die Hectic; and that by increasing the natural Discharges.

The Precaution they use, is to hold a piece of Gold in the Mouth, to imbibe the Effluvia (*Aurum enim suâ naturâ attrahit potenter Mercurium, ubi etiam latitantem, & ei sese immiscet*) and intercept their Passage into the Body, which Method too often proves abortive, from the innumerable Particles which escape into the Body (by Inspiration) floating in the *Medium Air*.

Hence it is that *Aurum Fulminans* is said to check the Activity of Mercury, so as to be useful in lowering a Salivation when there is Occasion. But, though the Mercurial *Effluvia* does amalgam with Gold in the Mouth, yet it cannot be suspended in the Fluids of the Body.

The Nature of *Hydrargyrum* or Quick-silver has not been hitherto analytically explain'd; and having eluded the common Instruments of chymical *Analysis*, some would have it to be the most simple

A Critical Dissertation

ple of all Bodies, and one of the Elementary Principles, of which a natural or mix'd Body is compos'd.

Mr. *Homberg* is of Opinion, that it cannot be decomposed or reduc'd into Simpler Parts, not but that he thinks it a Compound, but because the Method of decomposing of it has not been yet discover'd. But *Helmont* tells us, that it is nothing but a Metal join'd to a large Proportion of a * Saline and Earthy Substance, that easily assimilates with Metals. But *Paracelsus* farther says, that Mercury is an Element generated from Sea-Salt.

This is much confirm'd in the Preparation of *Præcipitatum per se*; for this by the sole Action of the Fire is sublim'd, and adheres to the Top or upper Part of the Vessel, in Form of a Friable, shining red Needles or Crystals; (*Mercurius sine ulla additione certi instrumenti per se redigitur in Cinnabarim rubicundissimam †*)
the

* Vide *Soliloquium Salium Philippi Finelli, de Sale Hydrargyronis.*

† Vide *Osvald. Croll. Basil. Chym.*

———— Mr. *Ambrose Godfrey* (Junior) Chymist, has invented such a curious Glass-Vessel for this purpose: (exceeding any hitherto describ'd) both for facilitating the Operation, and lessening the usual Consumption of Mercury during the Preparation.

the Sulphurous Principle being in a great measure exhausted or chas'd away, the Saline Principle shoots like so many Pins thro' its Spheres, and thereby destroys its Fluidity. The Cause assign'd by some, is, that the Mercurial Particles uniting and associating with Fire, form minute Concretions, &c.

From this Preparation it appears that Mercury is a Compound, and by a proper management of this Sublimate and the footy Powder * that remains *in fundo* after Sublimation; it may be farther manifested, and its Principles discover'd, though all Attempts hitherto to resolve Mercury into its component Parts have prov'd ineffectual.

This Metamorphosis or Transmutation of the metallic *Proteus*, Mercury, is like all other Preparations of it (by whatever means effected) liable to be restor'd to its numerical Self: This particularly by exposing it to the *Focus* upon Charcoal, it re-assumes immediately its metallic Brightness and Fluidity, and becomes Quick-silver; the Coal having furnish'd it with the Sulphurous Part or

B 4

Principle

* The Sulphur extraverted.

A Critical Dissertation

Principle (which gives it Fluxility) that the Fire had before depriv'd it of.

My chief Aim here, is to enquire into the Nature and Manner of the Operation of *Hydrargyrum* or Quick-silver, (when current) *Mercurius Alcalisatus*, and *Aqua Argentea*, in human Bodies; and how far we may depend upon them in order to cure Diseases.

But before we proceed we are to shew the Manner of preparing these Medicines: Quick-silver has generally no other Preparation (after it is come to *England*) than what the Druggist is pleased to bestow upon it; and that probably no more than passing it thro' Leather. And the Preparation of § *Aqua Argentea*, is only boiling Water with a small Proportion of Quick-silver in it. But *Mercurius Alcalisatus* is prepared as followeth:

℞. *Mercur. Crud. per Cor. traject.* P. iii.
Oculor. Cancror. Preparat. P. v.
 M. F. *Pulvis bene terendo.*

This Preparation will require several
 Hours or Days Trituration before the
 Ingredients

§ Quick-silver boil'd in Water, whereby the Mercury loses not the least estimable Weight.

Ingredients are incorporated. Quick-silver easily embodies with Mineral Acids, Sulphur and Turpentine. The former by virtue of their Acidity, and the two latter from their consisting of ramous and flexible Parts.

Moreover it will incorporate with insipid *Calxes*, (but not with Water by boiling) but will not indifferently hold Quick-silver so long as saline and acid Bodies; what the *Calxes* of Gold and Silver may do, I shall leave to them that have made all the Enquiry into the Nature of Metals human Industry is capable of.

It is well known that it will amalgam with Metals that destroy Acids; but if we take almost any *Calx* or Earth not too dry, you may rub Mercury in it so as to lose Sight of it, and as no one shall be able to separate it but by Fire:

Every true Definition, according to the Doctrine of the Philosopher, must consist *ex Genere & Differentiâ*:

But, because we many times want the essential or true Differences, it is lawful for us to substitute the Properties: (which, in my Opinion, are the most certain Foundation of all the Knowledge we can have of Nature, while we can see only a few Links of the Universal Chain)
Therefore,

Therefore, if we look into the Properties of Quick-silver, they will lead us into the Knowledge how it operates in the *Primæ Viæ*, and what is most likely to render it liable to enter the *Lacteals*, &c.

Its Properties are Simplicity, Volatility, Fluidity, Divisibility, Ponderosity, susceptible of the greatest degree of Heat and Cold of all Fluids, void of Acrimony, dissolves almost in all Acids, and unites its self with 'em; at least with all mineral Acids.

Its Simplicity is a Property ascrib'd to it, for want of a Method of decomposing it.

Its Volatility is not producible by any lesser Degree of Heat than that of Sand: Its Particles being incapable of a sudden Rarefaction because of their Solidity.

Its Fluidity proceeds from the Rotundity of its Parts, whereby they separate and recede from each other by the smallest Force; consequently, of all Bodies, it is that whose parts cohere the least, or are the least tenacious.

Its Separability or Divisibility likewise proceeds from the same Cause as that of its Fluidity: That is, there is scarce any Cohesion at all, in the Parts of *Mercury*, therefore the most fluid of all Bodies.

Its

Its Ponderosity also proceeds according to the trite Maxim in Physick, that the Matter of Bodies is proportionable to their Weight; or that Weight of any Body is as its Substance. That is the specifick or relative Gravity, by which one Body is heavier than another of the same Dimension, is always as the Quantity of Matter under that Dimension.

Its being susceptible of the greatest Degree of Heat and Cold of all Fluids, arises from its Gravity; for the Heat and Cold of all Bodies, is, *cæteris paribus*, as their Weights:

Its being void of Acrimony, arises from its Sphericity, Politure or Smoothness; having no Angles whose Asperity are necessary to act as *Stimuli*: And its Property of dissolving and uniting with Acids, from its alkaline Nature.

Out of all these Properties already mention'd there are very few, which with Shew or Colour of Reason can produce any valuable Effects, or have the least chance thereunto; and they be Divisibility, Ponderosity, Frigidity, and its uniting with, and destroying of Acids.

From its Divisibility (which is one of the Characteristicks of Mercury) by its fall into the Stomach, it may *per accidens* fly into small Globules, and by its tumbling

tumbling or rolling over the Ascent of the Stomach into the *Duodenum*, each of which may fly again into lesser Globules: Thus by frequently ascending over the manifold Gyration or Convolution of the Intestines between the *Oesophagus* and *Rectum*, particularly when it passes the *Colon*, its Spheres may be infinitely reduc'd.

On these Considerations, and the *Valvulae Conniventes*, or the Wrinkles and Plaits agitating and incorporating it with the viscid *Saliva* and glandular Juice of the Stomach and Intestines, by the constant and uniform Vermicular or Worm-like Motion of those Parts: So that some of the smallest Particles may become specifically lighter than the Fluids that enter the invisible Orifices of the Lacteals, and be suspended therein; and by that means, and by its Weight forcing open the Mouths of the Lacteals, it may be transmitted into the Blood.

Now we come to consider that of Ponderosity, whence follows a more sudden Descent of the *Alvi faeces* thro' the Intestines; and from this Property, it becomes a Specifick in the *Volvulus* or Iliack Passion, which is a twisting of the Gut *Ilium*, or one Part enters the Cavity of the Part immediately below or above, and
by

by this Principle of Gravity it doth sometime reduce 'em. Moreover by the same Property and that of Divisibility, it will cure a Costiveness whether natural or acquired.

In the next place we are to consider its Frigidity, from which Property (when taken *jejuno Ventriculo*, or upon an empty Stomach) a sudden sense of Cold; and thence may arise more frequent Contractions and Vibrations of the Solids (invigorating and promoting the Peristaltic Motion of the Guts) and this communicated to the *Emporium* or intelligent Principle in the Brain; and thence propagated to other Parts of the Body; and where the proper Tension or Tone of the Solids is wanting, it may be of some Service.

And lastly, as to the other Property of its uniting with almost all Acids, it may destroy the Acidity, the Corrosiveness, and Pointedness of the whole Liquors of the Body, wherever it meets with 'em: All the other Properties can neither alter the Animal Humours, nor affect the Sensible Parts; therefore can have no medicinal Virtues, and no great Matters in way of Cure can be expected from 'em:

After we have learnt the Properties of this Metal, we shall be better able to account

count for its Manner of operating, and how far it may be of service in the Distempers wherein it is so highly recommended by its Advocates: The Principal of these are the *Asthma*, Phthysic, or Consumption from distemper'd Lungs, the Stone, Barrenness, and the Diseases of the Stomach and Intestines.

That some of the mercurial Particles do sometimes enter the Blood, when taken inwardly *per se*, is evident from its silverizing gold Buttons in the Shirt-sleeve, and other Circumstances. But it is very uncertain, for we see Numbers daily experimenting (or *impunè ludere de corio humano*) and taking great Quantities, without one single Instance of its raising a Salivation, or scarce any Symptoms tending thereto.

Among all the Authors I perused upon this Occasion, I met with only one * One (except our present Quick-silver Controversy) which informs us that crude Mercury taken by the Mouth was wont to raise a Salivation. Sir *Theodore Mayerne*, and others, gave to the Quantity of Six Ounces (in the *Miserere mei*) at a time, but we don't find that it had that Effect

* Vide *Iliaca Passio*, in a Translation from the last Edition of Dr. *Allen's Synopsis Medicinæ*.

or sputative Symptom. And our very learned and ingenious † Dr. Mead says, that he hath seen two Ounces of it given every Day for one and twenty Days together, without any Inconvenience at all, and so hath many more ||.

Therefore there must be a Cause qualified to produce the same constant and immutable Effects, à *Causa per se*; before it can be with any Certainty convey'd into the Blood. For what removes all Doubts, is, that the Quantity of Metal taken at the Mouth when Crude, may generally be abstracted from the Excrement. And if we trace Causes from Effects, all this will seem chymical or at least uncertain.

It is an Objection (already advanc'd) that the mercurial Particles cannot get into the Blood in great Quantities, else they would unite in the *Receptaculum commune*, and be incapable of producing any visible Effect in the Body. But this can be of no Force, for Circulation commences at the Lacteals, and the progressive Motion is carried on even in the

† Vide Dr. Mead's Mechanical Account of Poisons.

|| --- Fallopius de Metallis, cap. 27. Georgius Agricola, Fracastorius, Wierus, Brassavolus, Eustachius Rudius, Amatus, Matthiolus upon Dioscorides, &c.

* *Receptaculum Chyli*, or common Receptacle. And the mercurial Particles that are so very small as to be buoy'd in the intestine Fluids, and to pass the invisible Orifices of the Lacteals, will be small enough to be suspended in the Fluids therein contain'd, till it is convey'd into the Blood in the Subclavian Vein, &c.

That crude Mercury may cure the Distempers already mentioned, and many more, whose Causes and Sources lie in the *Primæ Viæ*: And may also *per accidens* (since it sometimes happens to enter into the Blood) cure those Distempers arising from viscid and glewy Juices which interrupt the Circulation, and the easy Performance of the Animal Functions: Or those proceeding from some Sharpness or corrosive Quality in the Fluids.

And all this will appear just and reasonable, when it is consider'd that Life and Health depend upon the Secretions being duly performed, and that a proper Fluidity in the Blood, is highly necessary to procure a free and easy Circulation: And that Mercury is the most universal Medicine that will produce this Effect, whereby the Vessels are kept always open, and the Causes of Diseases cut off.

* Vide *Keill's Anatomy of the Human Body* abridg'd. Page 57, 58.

I am convinced, that crude Mercury will cure an *Asthma Convulsivum*: (or any other Disorder arising from the same Cause) which proceeds from a very sharp, cutting Armoniac Rheum, that inflames, corrodes, and excoriates the *Oesophagus* and Stomach, and convells the great Stomachic-Nerves, whence derives this convulsive *Asthma*, the Nerves of the *Diaphragma* being likewise convell'd by consent. And this it doth chiefly by that Property of reuniting with, and destroying of Acids.

And when admitted into the Blood, it may remove Coughs, Phthifics, *Respiratio Anhelosa*, or a Difficulty of Respiration, and *Asthmas* (whose Cause lies latent in the Lungs) for it is manifest by Inspection and the Anatomy of tabid Bodies, that most Distempers of the Lungs arise from an Obstruction and Hardness of the Glands, wherewith this Part so plentifully abounds

And Mercury being endu'd with the dissolving and deterging Property in an eminent Manner (which ought to be the primary and sole Intention in all pulmonary Diseases) it will keep the Fluids in a perpetual and progressive Motion, thro' the finest Tubes of the Lungs, &c. Hence it is reasonable to believe that it will cure the

Phthific, or Consumption from distemper'd Lungs, the Stone, Barrenness, and some of the Diseases of the Stomach and Intestines.

But we ought to illustrate the Matter from Philosophy and Experience, for we know that Speculations or Reflexions are looked on with some Diffidence, 'till there have been some practical Experiment made of 'em : But there are many particular Propositions of eternal and unchangeable Verity, as in Logick that the Cause is always before the Effect in order of Nature ; in Physicks, that all local Motion is by Succession ; in Metaphysicks, that nothing can be and not be at once ; in Mathematicks, that all right Angles are equal, &c. Therefore,

In order to proceed methodically, I shall lay down some general Propositions, (for I dare not give them the authoritative Title of *Aphorisms*) as a *Basis* of the following Theory: And thence I shall deduce just Consequences by way of Corollary ; proving the Truth proposed, by demonstrating the Absurdity or Impossibility of asserting the contrary.

Prop. 1. Mercury, whether Crude or otherwise transmitted into the Blood in due Proportion, will as certainly raise a Salivation, as it is admitted into it ; unless

less it should happen to run off by the renal, or intestinal Glands, or those of Perspiration, (*quâ datâ porta ruit*) or either of them that happens to be most patent, or a Fault in the Formation and Contexture of the salivary Glands; and will be found to pass by the latter more or less according to the Largeness or Smallness of the Glands, and *vice versa*.

Prop. 2. No Preparation of crude Mercury can be transmitted into the Blood by the Lacteals, unless its Spheres are so divided as to be render'd specifically lighter than the *Menstruum* or Fluid wherein it is to be suspended; and the Substance that keeps the Mercurial Spheres asunder, of a ready Solution in the Fluids of the Body.

Prop. 3. No Preparation of Mercury can be transmitted into the Blood internally, but what is soluble in Aqueous *Menstruums*, for such are the Fluids of the Body.

Prop. 4. All Mercurial Preparations, whether they be prepared with acid Spirits, Sulphur, Turpentine, or the *Testacea*, alter some of the Properties of the Metal with its Form.

GENERAL COROLLARY.

From the foregoing Propositions, it is undeniably evident, that Mercury taken by the Mouth in its native Dress, and that *per se*, cannot be suspended in the Fluids of the Intestines whereby it may pervade the Lacteals, unless *per accidens*. Neither can it by any means get into the Blood, when mixed or blended with the *Testacea*: The former wanting a far greater Attrition and Comminution than that arising from the Mechanism and muscular Tunics of the Ventricle and Intestines (tho' its Divisibility and Ponderosity doth dispose it *per se* (that sometimes it happens) to open and enter the Mouths of the Lacteals) and the latter being so envelop'd and so closely retain'd by the terrene Powder as not to be separated or disengag'd but by the help of Fire: And it being the Property of neither of the Ingredients to attract Water, its Seat of Action must in consequence be in the *Primæ Viæ*. And,

Hence it likewise follows by necessary Consequence that all Mercurial Preparations, whether they be those prepared with Sulphur, as the *Cinnabars*, or *Æthiops*, or those prepar'd with Turpentine, as the
Pi-

Pilula Barbarossæ vel Ceruliæ, or *Pilula de Hydrargyrio Horstii*, or those of † *Belloste's*, or indeed those of *Dr. Turner's* ‡ at all times, if duly mix'd (in regard to the Ingredient Mercury) can be of no service in removing any Malady, besides those whose principal Source is lodg'd in the first Passages, the Ventricle and Intestines; (except that of Derivation by their Action upon the Intestinal Glands) because only the most spiritous or the least viscid Parts enter the Blood; and because Refinous Bodies are dissolvable in *Alcohol* or Spirit of Wine, and sulphurous ones are ren-

C 3

der'd

† *Belloste* informs us that his Quick-silver Pills, during all his Practice, never happen'd but only once to excite a Ptyalism or a slight Salivation; tho' he was wont to give them for six Months together.

‡ *Dr. Turner*, in his Discourse on Quick-silver, tells us, that Turpentine is the Ingredient that He makes use of to incorporate the Quicksilver: But sometimes in order to disguise or to prevent any Suspicion, it is rubb'd with a little *Syr. Limon. Aurant. vel de Spinâ Cervin. &c.* By this last Method, the Mercurial Spheres may be disengaged, and set afloat in the Fluids of the Body, and be liable to affect the Mouth, &c. But these acid Juices, in form of Syrups, seem to want the Consistence and Viscosity which are requisite to keep the comminuted Mercurial Spheres asunder: what their Acidity may contribute to dispose them thereto, we may gather from its Preparations with mineral Acids. And it is manifest from Experiments that Acids attract Water, and occasion the dissolv'd Particles to mingle therewith.

A Critical Dissertation

der'd fluid and potable by Alcaline Salts, and these are not always, or indeed at any time, to be met with in the Body.

And in Consequence of all these Considerations taken together, perhaps no Physician of Judgment and Experience, but will tacitly allow the Truth of this Assertion; notwithstanding establish'd Forms, and beaten Paths attractive Power.

Various *Hypotheses* have, and may be form'd relating to the Nature of this Metal; but we have much more sensible Demonstrations of its Nature from Experiments, and its well-known Properties: hence our Solutions are just and reasonable. But lest it should be said that we are too precipitate in our Conclusions, after having learnt a few of the Properties of a Body in its Simplicity or uncompounded State; we think we have got all, and impose it on our selves to account for all the *Phænomena* and Effects thereof in a Compound State, or when combin'd with other Bodies. Let us consider;

Is it not demonstrable, (and that beyond Contradiction) that the Knowledge we have of the Preparation of this Metal when *Hydrargyrum* or Quick-silver, is insufficient? For, tho' it be an active Fluid, it may be quite chang'd as to its Properties, when blended with other things that are passive.

passive: Therefore we ought to have recourse to the Speculation of the Nature of this, or that Principle of the concreted Body, their several Relations one with another, and their several Properties by which they may be changed, or are changeable one by the other, before we are proper Judges of the Nature of the Compound. To come to the Point.

In the Preparation of *Mercurius Alcalifatus*, the levigated and subtile Powder being mingled (by Trituration) *per minima* with the Mercury; and by adhering to its Surfaces, and by thus intervening between its Spheres, it thereby destroys its Fluidity, and that by changing its Sphericity, Politure or Smoothness (which are some of the several Requisites belonging to its Fluidity) into irregular and unequal Surfaces.

Mercury consisting of spherical Particles, and by this Preparation (to wit, Trituration) it is only divided into those of themselves (as being spherical) and those being cover'd over with the testaceous Powder; yet being thus blended and united, can neither occasion Stimulations, Dissolutions, or any thing that is necessary to produce a valuable Effect; excepting that sole Property of destroying the Acidity of the Fluids, which is the

Property of both in an uncompound'd State, and that only in the *Primæ Viæ*.

We find that Mercurial Medicines vary their Effects in the Body, only as the Mercurial Globules are differently combin'd with Salts, and the Points of these more or less broken by the Action of the Fire, in repeated Sublimations, Triturations, in burning of Spirits upon 'em, or such like Management.

There is something indeed efficacious in the saline Preparations, the Mercury being render'd soluble in the Fluids of the Body, (by virtue of the saline Ingredient) such as *Mercurius Sublimatus Dulcis*, *Panacea*, *Præcipitatum Viridis*, *Mercurius Vitæ*, *Arcanum Corallinum*, *Turpetum Minerale*, *Pulvis Principis*, &c. But those Preparations where Sulphur enters the Composition, give nothing perceptible in that Form.

And yet they are the Capital Medicines in chronic Cases, to break through all the glandular Obstructions, and force away those acrimonious Humours, which corrode, ulcerate, deform, &c. But these Preparations are seldom prescrib'd *per se*, but rather in conjunction with other Medicines, perhaps more powerful than they in curing the Distemper.

This

Thus they are become entitled to such *Encomiums* as are generally bestow'd upon them, and for want of a strict Examen into their Properties, whether the *Compositum*, or any Parts or Principles of it, are capable of Suspension in the Fluids of the Body.

Hence it is that some of the most ingenious and learned Men, have imagin'd that Sulphur bridles the sensible Appearances and Operations of most active Medicines: Instances of which in natural Bodies, are Antimony and native Cinnabar; in artificial ones, *Æthiops* Mineral, and Cinnabar of Antimony: In all which the Mercury is so bridled up by the Sulphur, that none of their sensible Operations and Appearances are felt, while they produce the most wonderful Changes on animal Bodies.

It is observable, that the Cinnabars and *Æthiops* seem to be unactive in the Body; and that they suffer no Alteration, but come off with the Excrements in their proper Colours: the Mercury lying dormant in the Sulphur, contrary to the Opinion of those who imagine the Virtues of Mercury to be exalted and raised when brought into such a State of Inactivity as renders it incapable of raising a Salivation, by being made too gross, or insoluble to enter the Lacteal Vessels, and mix with the Blood. All

All Mercurial Preparations are thought to dissolve and depurate the Blood, penetrate the utmost Recesses of the Body, deoppilate the Glands, free from obstructing Viscosity, correct the morbose Juices; and for these Reasons they are prescrib'd against all cuticular Eruptions, St. *Anthony's* Fire, the Itch, Arthritic-Pains, Asthma's, *Tubercula cruda* of the Lungs, Ulcers and convulsive Affections, &c.

But upon a due Examen, we shall find that all the Preparations, where Mercury is combin'd with Sulphur, Turpentine, or the *Testacea*, cannot possibly enter the Lacteals, but run untouch'd or suffer no Alteration in their passage through the Intestines: However the Sulphur may gently stimulate their Coats, solicit a Discharge of their Contents, and may be serviceable by its Subtile Parts, and likewise the Turpentine.

Both being exceeding penetrative and active (I mean some of their Principles) as to pass the smallest Vessel of the Glands, and to be carried to the last Subdivision of the Constitution. The Sulphur yields the most piercing, active, and agreeable Acid in the World: Such as the Spirit, and *Gas* of Sulphur, and the like: And Turpentine affords that fine *Æthereal* Oil which penetrates into the least
and

and finest Vessels, and the most secret Re-cesses of the Animal Oeconomy.

This is evident from hence, those who take Sulphur internally, their Clothes are said to smell of it, and the Money in their Pockets discolour'd. And how soon do we perceive all kinds of Turpentine to alter the urinary Smell of the Urine, into a fine Violet: Those Subtile and Æthereal Principles by their penetrating Nature and surprizing Virtues, cure numerous, stubborn and obstinate Distempers.

Thus by the Heat of the Body only, these subtile Principles by their admirable Faculty, are made perceptible to the Smell and the Sense; insinuating into the finest Branches of the Arteries by their Subtilty and Agility, adding Strength in their Course to their moving Fibres, exciting them to Motion, opening Obstructions in their Way, throwing off what is noxious and superfluous by all the Out-lets.

It is difficult to foresee how the famous Specifick *Mercurius Alcalifatus* can be of any Service by way of Medicine to cure Diseases, whose Seat are in the Blood or in the extreme Parts. Since it has been already made to appear (by the foregoing Propositions and Corollary) that it cannot

cannot pass the usual Course into the Lacteals, thro' all the Meanders of the Mesentery, the Mercury being so embodied with the other Ingredient (which is insoluble) so as not to be separated without the help of Fire: Therefore render'd incapable of being suspended in the Fluids of the Body.

And it is demonstrable that neither of the Ingredients have any Subtile Parts or Æthereal Principles, to insinuate into the Blood: Notwithstanding that *Belloste*, with his * Friends and Acquaintance, wou'd impose upon us that Quick-silver is extreme volatile, and that it transpires more than any other Metal, which makes it common in *Italy* to be wore as a Preservative against the Plague, and noxious Vapours, &c. But we have none at home nor abroad so absurd as to gainsay that Crabs-Eyes is not a kind of Calx, *Terra Mortua*, or *Damnata*, as not containing any subtile Principles.

Not unlike these Gentlemen, are those with us, who prescribe *Aqua Argentea* or Silver Water; imagining that the Mercury impregnates the Water with such a wonderful Virtue, tho' it loses
nothing

* Mr. *Le Blegne*, and Mr. *Cicognini*.

nothing perceivable in its Weight: And to support this Chimera, they instance the *Pilulæ Perpetuæ* which is nothing but *Regulus* of Antimony, whose Virtue either in Form of a Pill, or by frequent Infusions, has been imagined to be inexhaustible †.

But Water cannot be impregnated with the Mercurial Spheres by boiling Quick-silver therein; for the Heat of boiling Water is insufficient to rarify its Particles, and tho' all Bodies are said, when put into boiling Water to conceive a Heat, *cæteris paribus*, in proportion to their several specifick Gravities, but Mercury alone is excepted upon account of its Fluxility, as not being able to stand the Action of a strong Fire, &c.

But it may by way of Essay be proposed whether the Mercury by *Kirkringius's* Method of distilling it into a Liquor or limpid Water *per se*, may not by that means be suspended in common Water, its Particles being diffused and render'd so very minute, and specifically lighter than those of Water: The Water to be impregnated being put into the connected Receivers. But,

† Vide *Boerhaave's* New Method of Chymistry, Translated by *P. Shaw*, M. D. and *E. Chambers*, Gent. P. 3. P. 306.

But the common Method, to wit, by boiling, can never effect it by the most intense Fire: Because Water by applying the greatest Degree of Fire, cannot conceive a Heat above the common Standard *: And if the Experiment was made in a *Balneum Mariæ Clausum*, or *Papine's Digestor*; whereby it is said the Water becomes more intently Hot; yet it cannot be effected because of the Fluxility and Instability of the Mercury preventing its Rarefaction, &c.

Is it not therefore obvious, absurd and ridiculous to imagine that Quick-silver doth continually emanate by Irradiation or atomical *Effluvioms*? For I know of no Volatility it has besides that, upon Division of its Spheres by the impelling Force of Fire increasing the Number of each Particle by Rarefaction, into an infinite Number; and thereby rendering it specifically lighter than Air it self? But when these rarify'd Particles are condensed and brought together again (by the † *Pelican*, or such like Vessel, which is illustrated by the Preparation of *Præcipitatum per se*;) it immediately re-
fumes

* Boiling the Standard of Heat.

† A *Pelican* is a Vessel whereby Distillation and Cohobation are both carried on at the same time.

fumes its metallic Brightness and Fluidity retaining its numerical Self. For,

The Fire cannot immediately change or alter its Texture, but by repeated Impulses, when confined in a proper Vessel (then it will chase away and extravert its Sulphurous Principle) otherwise it wou'd go off in a Vapour, which shews its aptitude to separate into similar or integral Parts, and its extreme Divisibility only: Therefore how unreasonable it is to urge and assure, that it transpires, or that it has any such Subtile Parts or Principles in its Composition (when Sand Heat can scarce separate or disengage any of 'em) as will pass off in Steams, &c. by the Heat of the Body only, and thence become a Preservative against the Plague and noxious Vapours, &c.?

Neither Reason nor the Knowledge of the Nature of Things cou'd direct us to make choice of Quick-silver and Crabs-Eyes, and blend 'em together in order to be a Specifick, and the principal Ingredient in Scorbutick, Rheumatick, and Venereal Cases; and to be cry'd up as an infallible Medicine even in an *Hernia Varicosa*, and in a Tumefaction of the *Testes* arising in a *Gonorrhoea**; it
not

* The Case of a noble Lord.

not being in the least subjected to the Laws of Motion, which is necessary to convey it to the intended Seat of Action.

That Medicines cure Distempers by causing different Impressions upon the Stomach only, is not difficult to apprehend, if we consider how that in some Manner all Sensation is nothing but touching several Ways diversify'd, and it is allow'd by all, that whatever Sensation there is in the extremity of the Fibre the same there is at the Origin of it in the Brain.

Thus by impressing a brisk Touch on the nervous Tunics of the Stomach, they being exquisitely Sensible, the Force of the Medicine is thence deriv'd on to the minute Fibres, Membranes, Nerves and Brain, and so very readily to the Heart, Arteries, &c. by its Appendixes the Nerves. For the Nerves, whose one Extremity is terminated at the common Sensory in the Brain, the other is interwoven into every Point of the Scarf-skin, the Membranes, the Coats of the Vessels, the Muscles and the other sensible Solids of the Body.

Besides what I have already said, if we do but consider the great number of Nerves, which is about the upper Orifice of the Stomach, renders it very Sensible, infomuch

infomuch that *Van Helmont* thought that the Soul had its Residence in that Part. And from thence proceeds the great Sympathy betwixt the Stomach, Head, and Heart.

That a great many Sudorific, Antifebrific, Anodyne, Cardiac, and Cephalic Medicines, operate or have their Seat of Action in the *Primæ Viæ*, particularly the Stomach, will appear from the following Observations: Tho' Medicines and Medical Operations have place chiefly on the Fluids, yet the Solids being the proper Instruments of Life and Animation, may, by causing different Sensations therein, produce diversify'd Effects on the Fluids therein contain'd.

1. We see People presently sweat upon eating Vinegar, or Lemon-juice (which are some of the principal Ingredients in our *Aqua Theriacalis*) and that by contracting the Fibres plentifully, and that communicated to the common *Sensorium* in the Brain, and thence universally propagated, whereby by these vellicating Shocks the milliary or sudorific Glands are compress'd, forcing thro' what is in readiness to pass.

2. A large Dose of the *Cortex*, taken about an Hour before the Return of an Ague-fit (in which time it cannot get out

D

of

of the Stomach, neither to enter nor circulate with the Blood) will prevent its Return, and that by bracing the Vessels and penning up the Humours, and preventing the Eruption of the obstructed morbid Matter into Action.

3. In like manner do Opiates, by causing a pleasing and agreeable Sensation in the Stomach, instantly remove any ungrateful Sensation, allay twitching upon the Membranes of the Lungs and Bowels, and compose the Disorders of the Womb, or Hysterical Affections, that arise from too titillating, or too uneasy Sensations, or any other uneasy or disagreeable Sense.

4. Hence it is, that what in a proper Sense is a Cordial must be also a Cephalic, as the Head has the principal Share in agreeable Sensations. And indeed in some respects whatever is grateful to the Solids in any Part, may be term'd Cephalic, since the Head is the Origin, and the Seat of the intelligent Principle: whereby as it partakes of their Uneasinesses at a Distance, so it also very agreeably sympathizes with their Releasement therefrom.

We find that some Drugs or Simples have their Virtues exalted by blending therewith another Ingredient, and there be others, whose Virtues are likewise improv'd

prov'd by taking away or depriving 'em of their unactive Principles, wherein the active ones are too closely retain'd or wrapp'd in : And there be others that are not improv'd by either adding or taking away. But the Ingredients that compose the Specifick, *Mercurius Alcalisatus* (particularly the *Mercury*) instead of being improv'd by being blended together, are marr'd.

The first of these is apparent in sweet Sublimate, or *Calomel*, that is, Mercury embodied with acid Salts. The next in Preparations of Antimony, and particularly in the *Mercury Precipitate per se*; whereby the Metal is deprived of its Sulphur, and has left in it *illos aculeos*, its native Salts expos'd to act as *Stimuli*, not unlike those adventitious Salts in the Preparation of sweet Sublimate.

But the Asperity of their Angles are not so acute and pungent, and thence milder in Operation, and the Texture, Nature and Properties of the Metal are not quite chang'd. Therefore it is superior and more excellent than all the chymical Preparations of *Mercury* hitherto discover'd in those Distempers arising from an acid Cause, whether they proceed from too languid a Motion of the Fluids, or from the Aliments; because it retains its

edulcorating Quality, besides those of gravitating and vellicating, which none of the other saline Preparations do.

And the latter are the *Cortex*, Rhubarb, and a great many more, which we find by Experience answers better in Substance, than when their Textures are alter'd by any means. Resinous Tinctures and Extracts ought to have their proper Salts, which Nature has endu'd them with; they being better able to dissolve their own resinous Parts (than by a *Menstruum*, by the help of any other Salt) that both may be drawn and suspended in an aqueous *Menstruum*, the Fluids of the Body.

For when resinous Substances are taken up in a vinous subtile Spirit they are depriv'd of their proper Salts, and by a Mixture of an aqueous Liquor, they are let fall again. To conclude, most of the Properties of Concretes are alter'd and chang'd with their Textures.

When all this is summ'd up, to wit, the different ways Medicines affect our Bodies, and the Nature, or essential Properties of the *Anchora Salutis*, or *Mercurius Alcalisatus*; it may be reasonable to conclude that all Propositions, Axioms, Problems or Theorems, or any Geometrical or Mechanical Method whatever, to account for the manner of its Operation,

ration, besides that of an Absorbent (and that in the *Primæ Viæ*) are all thrown away; for it is not in the least subjected to the Laws of Motion, neither can it influence or affect the sensible Parts. The like may be said of *Aqua Argentea*, which in order to make sure work with this Powder, is prescribed *pro communi potu*.

Having hitherto been inveighing against the Use of some of the Mercurial Class, as being amass'd contrary to Reason and the Nature of Things, it is but reasonable to expect that we should here substitute a proper *Succedaneum* in lieu of 'em: And that we shall do by compounding the Mercury with such Substances as are consonant to the general Propositions laid down, of whose Evidence we may be absolutely certain, and from whence we have inferr'd a Chain of Conclusions equally as certain.

℞ *Cons. fruct Cynosbat.* P. iii.

Hydrargyr. purissim. P. ii.

Syr. Altheæ Fernel. q. s.

M. agitetur mistura in mortario vitreo vel lapideo, ad separationem totalem Hydrargyri.

There are Two Ways of applying crude Mercury to raise a Salivation;

the One external, by mixing it with some viscid Matter to divide its Spheres and keep 'em asunder. Then it is mix'd with *Axungia* or Swines Grease (into an Unguent) to destroy the Viscidity of the Matter which held the Mercurial Spheres asunder, and to relax the cutaneous Glands, whereby they are render'd more patent and distractile, and the Mercurial Particles being thus loosely interspers'd thro' the Compound, might the more readily enter the Pores of the Skin upon Friction.

The Manner of introducing it internally into the Blood, with any Certainty, hath lain undiscover'd till this Day: And the Discovery of that of Unction to raise a Ptyalism, was owing to Chance, to wit, a Physician of *Bologne*, having read in *Avicenne* and *Mesne* two *Arab*-Authors, that *Mercury* apply'd externally was proper for the *Lepra*, and some kind of Pustules, particularly the *Scabies*, or the Itch; had a mind to try it in a Pocky-Itch: a Salivation was thereupon unexpectedly raised, and the Patient cur'd not only of the Itch, but of his Pox. The same *Arab*-Authors observ'd, that they who drink crude Mercury in a large Quantity receiv'd no hurt. And when taken in lesser Doses, it was not attended with any Inconvenience.

The

The Mercury readily incorporates with this Mixture: But the Conserve ought to be made from the Pulp of Hips when become mellow. And the Syrup ought to have some Gum *Arabick* and Figs in its Composition, to answer the Intention of *Boerhaave*, during a Salivation, to relax the Glands, and to render them yielding, pliable and distractile with *Ptisan* or *Decoctum Pectorale*. But special Care must be taken to keep due Consistence, a very small Portion of the Syrup to render the Conserve agitable, and not to destroy its Glutinosity, increasing or diminishing the Proportion of *Mercury* to that of the Conserve, according to the Intention of the Prescriber.

When it is thus compounded, it may be kept in the Shops for extemporaneous Practice, it being a proper *Basis* for most of our Electuaries, Bolus's and Pills, in what Cases soever, where either the Cinnabars or *Æthiops* were judg'd proper; which I think is a sufficient *Encomium*. And moreover it is very agreeable and palatable, pleasant, and grateful to the Taste, which is but a small Recommendation indeed; but when I say it corrects, successfully and most efficaciously and suddenly, all Taints proceeding from the venereal *Virus*, the

Lues, the Itch, Leprosies, scorbutic, and scrophulous Ulcers; these and all cutaneous Foulnesses, it radically extirpates, and almost all Distempers arising from fizy Juices.

The Manner how crude Mercury is sometimes *per accidens* convey'd into the Blood by the Lacteals, is at present pretty much canvass'd. But the Mercury being prepar'd after this manner, there is a Cause qualify'd to produce the same constant and immutable Effects, *à Causa per se*; whereby it may with Certainty be convey'd into the Blood internally.

And in Confirmation thereof, and to prevent or obviate Scepticism, this *Electuarium Polychrestum* (as I may justly call it) taken from two Scruples to a Drachm, twice or thrice a-day, and that for few Days successively, it will occasion a fetid Breath, a Soreness of the Mouth and Gums, and if persisted much longer will raise a Salivation, the Exceptions in Proposition the first being excepted.

Hence it appears too difficult a Task, to reduce the just Quantities and Proportions of crude Mercury admitted into the Blood, in all Bodies, to an exact *Calculus*; or to lay down a general Maxim, which will hold good with respect to all Constitutions. And to direct the Course
of

of the Mercury to promote or increase any one Secretion as that of Salivation, by retarding or retaining another, is the work of a judicious and experienc'd Physician. But when neither of those Exceptions that are excepted, do frustrate its constant and uniform way of acting, it is fact that it will raise a Salivation, &c.

Therefore what remains is, that we account how the Mercury being thus compounded enters the Lacteals, and is capable of Suspension in the Fluids of the Body. To proceed:

When the Mercury is very minutely and infinitely divided and incorporated with the other Ingredients, and that by agitating and pounding, the Globules are separated and placed beyond the Spheres of Attraction, or so envelop'd therein, or the Viscosity and Glutinosity of the Conserve, is superior to that of Attraction, whereby they cannot segregate, join and cohere; for the Mercurial Spheres, when they approach and touch, or are come to feel each other attractive Power, will on Contact immediately join. And,

Though the Particles of Mercury are so closely retain'd by the other Ingredients, yet upon the Approach of Water (or any aqueous Fluid) there is a mutual Attraction between the saccharine
or

or * Saline, and mucilaginous Ingredients and the aqueous Fluid; the having a natural Disposition to attract and join with each other (It being the constituent Character of a Saline Body to be dissoluble in Water, and Water is likewise the best Menstruum to dissolve Mucilaginous and Gummy Substances.) Hence a ready Solution of the Compound, and the Mercurial Spheres are thereby disengaged, extricated, or unintangled; and set afloat in the Fluids of the Stomach and Intestines, and therein suspended.

Partly and chiefly because Mercury, upon Division of its Spheres their Gravities decrease in a triplicate Proportion of their Diameters; but their Superficies only in a duplicate; and upon another Account the Particles of the Fluids intervening keep them from Contact. The mutual Attractions of its Spheres being insufficient to drive the Particles of the Fluids out of their Places, that the attracting Mercurial Particles may congregate, sociate, and unite. And this is apparent when Water has got amongst the Spheres of Quick-silver, that they will not easily unite. Be-

* Vide Dr. *Stare's* Vindication of Sugars. The Figure of the Salt or Crystal of Sugar, is a Prism having Two Basis opposite, equal, and parallel; the other are Parallelograms.

Besides what has been already said, it may be something more than a bare *Hypothesis*, that the Conserve or any other viscous Pulp, by adding a greater Consistence to the Fluids, particularly our potable Liquors, and thence a greater * Resistence. (Water may dissolve all Bodies, even the heaviest and most compact, as Metals; inasmuch as they are capable of being reduc'd into a Saline Form:) That is, causing the Cohesion of the Parts of the Fluids equal to the Excess, which there is of specifick Gravity in those comminuted Mercurial Particles above the Fluids: Thus it impregnates the Chyle with its infinite small Particles, and by its Weight forcing open the Mouths of the Lacteals, it is convey'd into the Blood, meeting in its Passage with the gelatinous *Lympha* (which is viscous and clammy when cold) and after that the *serum* of the Blood, which is still a mucilaginous Fluid of equal if not of greater density, consequently may easily be buoy'd therein.

The Porosity of Water (which is the common Basis of all Fluids except † Mercury) is so very great, that there is
at

* *Corporis resistentia provenit à materiæ quantitate.*
Elementa Medicinæ Archibald. Pitcairn. Prop. XXX.

† *Hales's Chymio Statical Experiments. P. 195.*

at least forty times as much Space as Matter in it. (For it is observed that when Salt is infused in Water, it does not fill the Vessel in proportion to its own bulk; whence it follows that there must be some little Spaces between its Particles, to admit those of the Salt.) Therefore its density may be increased, by having its Spaces (which are so large as to be pervious on all Sides) impleted or filled with this viscous and saline Matter: The Particles wherewith the Element was before impregnated, to wit, that of the Grape or Barley, had not so saturated it as not to be capable of receiving any more Matter. By these means the Mercurial Particles may be suspended in the Chyle, enter the Lacteals, and pervade the whole Habit.

It is the Opinion of a great many, that if they cou'd but load the Blood with Quick-silver, without any sensible Operation, as that of Salivation: that it wou'd remove the most obstinate Diseases. But this is not feasible, neither by the help of Sulphur, nor even by any Preparation of Gold; unless they could deprive it of its specifick Gravity (which it will retain in all Forms) by which inseparable Property it produces the Effect.

What

What has put Physicians upon this way of Thinking and Experimenting was a small Treatise of a *French* Physician *M. Chicoyneau*, Chancellor of the University of *Montpelier*, where he doth endeavour to prove, that a Salivation it self contributes nothing to the Cure of the *Lues*, but is rather prejudicial thereto; and that the Salutary Effects of Mercury are independent of any Evacuation at all; and that it acts purely as a Specifick.

'Tis without Reason, therefore, he urges that Venereal Patients are put to the Torture of a Salivation, since the full Effect of the Medicine is had without carrying Matters to that Extremity. The Salivation being only an Accident to the Cure, which is effectually obtain'd by a Mercurial Unguent rubb'd on the Joints in such Quantities, and at such Intervals, as not to raise any Salivation. He supports the whole by the Experience of Forty or Fifty Cures wrought in one Year by this New Method.

In Answer to which the late learned and experienced Physician *Dr. Friend*, in his History of Physick, tells us, that “Notwithstanding all the different Methods, which the most skilful Physicians have attempted for above two hundred Years, and all the bold Assurances the Pretenders

“ ders to Noftrums and Specificks have
 “ given out, I may ftill venture to fay
 “ that the moft effectual Cure in the
 “ Judgment of thofe who underftand it
 “ beft, is, when the Evil is very malig-
 “ nant and inveterate, by Salivation; and
 “ not only fo, but that Experience has
 “ fhewn us, that a Salivation rais’d by
 “ Unction, answers more certainly, in
 “ fuch terrible Cafes, than one produc’d
 “ by internal Medicines. Give me leave
 “ to conclude with another Remark, that
 “ the great Effect, which Mercury has in
 “ curing this Difafe, lies chiefly, if not
 “ folety, in promoting the Flux.”

“ For tho’ great things have been
 “ faid of Unction and other Mercurial
 “ Applications, efppecially of late from
 “ *Montpelier*, even when they have pro-
 “ duced no Salivation at all, or at leaft a
 “ very imperfect one, there is reafon to
 “ fufpect fuch a Cure as this wou’d be
 “ only palliative.”

“ However we are fure the very fame
 “ Method has been often try’d among
 “ our felves, but feldom or never found
 “ upon the beft Obfervation to fucceed;
 “ upon the whole, whatever Boafts have
 “ been made in thefe later times, of find-
 “ ing out a more infallible Art of Curing,
 “ I am perfuaded it wou’d be the moft
 “ fecure,

“ secure, as well as the most honest way
 “ to tread in the Steps of our Ancestors;
 “ who, among good Remarks they have
 “ left us concerning the Venereal Distem-
 “ per, have set this down as one, that
 “ the freer and larger the Salivation is,
 “ the more effectual and lasting is the
 “ Cure.”

That the Salutary Effects of Mercury, are not independent of any Evacuation at all, will no doubt appear when the Thing is examin'd after *Sanctorius's* Method: For it frequently increases the urinary Discharge, and other sensible Excretions, and probably occasions the Glands of insensible Perspiration to secern more likewise. And that it doth not act purely as a Specifick, may be justly question'd, from Cures wrought by Calomel and *Mercurius Dulcis* (or it must be granted that it may be effected either way) which are Mercury dissolv'd by the Acid of Vitriol, and its Spheres become permanent and fix'd, by this Pontick Liquor, or Acid Salt; and so saturated with it as not to be able to receive any more, unless it can be prov'd that it may be impregnated (as Water) with some Salts of different Species or Figure, after being saturated with another kind.

Till then, it cannot be supposed that these work a Cure by Absorbing, Obtunding, and Blunting the Points of the *Virus* or malign Salts; (or as it were sheathing or wrapping them up in some of the Particles of the Medicine) But rather secreted and carried off by the Emunctories, by virtue of the noble Evacuators: which by dilating the fine capillary Channels and increasing the *Impetus* and Motion of the Fluids, they deterge and expel the morbifick Matter.

But granting that crude Mercury performs a Cure purely as a Specifick; as no doubt it doth in part, tho' not solely, is confirm'd from the * Observation of a Salivation being raised by crude Mercury, answers more certainly: But to obviate the Objection, it is said that the internal Exhibition of Mercurials are thrown off by the greater Out-lets, because they circulate only thro' the greater Blood-Vessels: And that, that by Inunction doth immediately insinuate it self into the smallest Capillary ones, where its Virtue and Efficacy is most wanted. Therefore this extraordinary Effect, is chiefly ascrib'd to the Manner of introducing it into the Blood, and not to a Specifick Virtue in the Mercury. And

* *Vide* Dr. Friend's History of Physick. Vol. 2. Page 384.

And moreover, it is manifest from Reason and Matter of Fact, that *Calomel* and *Mercurius Dulcis*, given in small Doses, and due Intervals, (by which means they gradually pervade the smallest Capillary-Vessels) have likewise perform'd great Cures; tho' the Mercury and acid Salt are in a Conjunct State, and which have assumed neuter Faculties not to be apprehended in either Singular; the Mercury being deprived of its alkaline Property. For,

The other Ingredient (to wit, the acid Salt) is so eminent in the Astringive (by virtue of its Acidity) that in *Hæmorrhages* both internal and external, it performs what other Restringents or *Emplasticks* fail in. And Quick-silver aims at no other than its Weight or Gravity (unless that of destroying the corrosive Faculty of the Liquors) is capable to produce; by which sole Property it will do wonders in the Cure of Diseases. And upon its Coalition with an acid Salt (as in the Preparation of *Calomel*, &c.) it will remove most obstinate Diseases by Vomit, Stool, Urine, Sweat and Salivation.

The Manner of crude Mercury's promoting Secretions is not after the ordinary Mode, but different from all other Medicines. For most, if not all, by virtue of the saline Principle that enters the Composition, by its Subtility or attenuat-

E

ing

ing Power, that is, thinning the Fluids, or by the Action of which Principle upon the excretory Glands, contracting and squeezing 'em. But this, consisting of spherical Particles, cou'd never occasion those Stimulations, or attenuate primarily the * Fluids, either of which Properties are chiefly and generally the Cause that produces these Effects.

Therefore it must be solely produc'd by the *Momentum* of its Gravity causing a greater Velocity of the Fluids; Quick-silver being (by Computation) specifically heavier than Blood, nearly as Thirteen to One, acts in proportion with a stronger Impulse (*— partiumque fluentium motus, in datâ proportione ad gravitationem, vel augetur vel minuitur.*) and increases the Secretions at all the Glands of the Body.

For the Quantity separated in every Gland is in a compounded Proportion of the Celerity of the Fluids at the respective Orifices; and the Orifices themselves of the separating Canals: Hence it is that it dissolves universally the Cohesions of the Blood, and equally and indifferently increases the Quantity of every Secretion.

One great Objection against the Use of crude Mercury, is, that the heavy Particles of it are apt to lodge in the *Interstices* of the

* *Vide* The Preface to my *Dissertation on the Operation of Chalybeat Medicines.*

the Fibres and Cells of the Bones, for want of being endu'd with a proper *Stimulus*. For the several Preparations of Mercury that are intimately combin'd with Salts, will, by the Irritation of these, be easily and fully thrown out at the Organs of Secretion, till the Blood is quite discharg'd of its Load.

Instances of which we have from *Nic. Fontan.* and likewise from *Eustachius Rudus*, who say, that some Bodies have been dissected, in which no small Quantity of Quick-silver hath been collected in the *Interstices* of the Muscles, and Cavities of the Bones, from the Unction in the *Lues Venerea*, who notwithstanding have liv'd many Years after the Unction in perfect Health.

And I am inform'd by an expert Chymist, that he, in drawing the Spirit, and volatile Salt, from human Skulls, found Quick-silver in the Recipient after Distillation, which was lodg'd in the Pores and *Laminae* of the Skulls. And the very learned and ingenious † *Dr. Mead*, has found once some Quantity of it in the *Perinaeum* of a Subject that was taken from the Gallows for a Dissection.

We have from good Authorities, as well as our own Experience, the ill Effects

E 2

ffects

† *Vide Dr. Mead's Mechanical Account of Poisons.*

fects of crude Mercury both inwardly and outwardly; but generally it is through an impropportionate Dose, or the unskilful Preparation; and I do think that we may judge it innoxious, if convey'd into the Body by the Mouth, a pure *Spanish*, or *Hungarian Cinnabarin* Mercury, that is, *in puris naturalibus* (not impregnated with malign Bodies, such as Arsenical or Bismuthal Atoms, &c.) and that by the Advice of the learned and skilful in the Profession: but not to be given preposterously by Empiricks, and at random. And,

We have in the History of Physick a great many Instances of its pernicious Effects by its lodging in several Parts of the Body; but the only extraordinary one, is the || Case of the ingenious Dr. *Francis Fuller*, who upon wearing a Quick-silver Girdle, for the Cure of the Itch, (and that after an inconsiderate and rash manner) was brought under a violent Spasmodick Distemper, which was supposed by himself and others to be owing to some Mercurial Particles lodg'd in some excretory Ducts of the Brain.

But it may be reasonable to imagine the Distemper to proceed partly or jointly from that Pforadick Salt, which the Mercurial Particles had repelled and united themselves thereto, and were translated upon the *Meninges*

|| *Vide* The Appendix to his *Medicina Gymnastica*.

ninges of the Brain, and its *Appendixes*, the Nerves.

Though Quick-silver has been often found in the *Interstices* of the Fibres, and Cells of the Bones when transmitted into the Body *ab extra*: Yet to obviate the like Objection when it enters the Body by the Lacteals (where Circulation commences) it is instantly carried on by the Force of Circulation till it passes off by some of the Out-lets.

But when it is forc'd into the Blood through the Sides of the Cuticular Arteries, some Particles may get into the *Interstices* of the Fibres, insinuating and penetrating the Substance of the Nerves and Solids, which will alter their whole Substance and Action, and so cause Spasmodick Distempers, or even an universal Palsy.

Whether this is conclusive, I shall not take it upon me to determine: But we have reason to believe that in a short time (from so many experimenting) we shall be better acquainted with the good or bad Effects of this Mineral; and whether at any time its heavy Particles do lodge in any Part of the Body, as the *Cellulæ* or *Vesiculæ adiposæ*, or the *Interstices* of the Fibres, and Pores of the Skin, &c. when taken by the Mouth.

And that without being detrimental to the animal Functions. For altho' the † Fumes of this Mineral receiv'd by Inspiration, may be very injurious, and cause immediate Death; yet the Heat of our Bodies is not sufficient to dislodge or disengage any of its Principles, or cause its active Spheres to ascend in Vapour, *Halitus*, or Smoke, &c.

That Mercury may be prepar'd so as to approach the nearest of any thing in Nature to (the *Desiderata*, or) what has been so much desir'd, an Universal Medicine suited to the Cure of all Diseases, will appear when it is consider'd that the Animal Body is nothing but a Machine, whose Actions and Motions are all perform'd by Fluids secern'd from the Blood, and that Secretion is the Spring of all Animal Functions.

I say therefore, since Life and Health depend upon the secretions, (so likewise must all Diseases, which are said to be universally in the Blood, and many of those which affect particular Parts) and since the principal Effect of Mercury is to dissolve universally all the Cohesions of the Blood, and like a Master-key, opens Works of different Textures and Combinations; Scouring and detarging the Canals, and destroy-
ing

† *Fumus Mercurii (qui ut larvatus semper est tamen Mercurius) statim laryngem præcludit & constringit.* Helmont.

ing the Corrosiveness of the Obstructions, insomuch, that it may (in a manner) be justly called a *Catholicon*. For,

Every one will readily grant that a proper Fluidity in the Blood is highly necessary to procure a free and equable Circulation; by means whereof, the Vessels are kept always open, Obstructions prevented, Excretions secured, Stagnations and Impurities of the Juices hinder'd, and the Causes of Diseases cut off.

But whenever this free and equable Motion is obstructed, whether by an overcharge of Humours, their Viscosity, or by Weakness in the Spring or Tension of the moving Fibres, it becomes an immediate Occasion to Diseases, especially those we term Chronical: And crude Mercury transmitted into the Blood, may answer all the Intentions of Cure, if assisted by Chalybeats, (it will adhere and amalgam to all other Metals, but not at all to Iron) the *Cortex* and other corroborating Medicines to brace the relax'd Solids. And any Ingredient that promotes any one Secretion more particularly, will be a means to cause the Mercury chiefly to affect those Strainers, and make its *Exit* by them.

Among all the Preparations of *Mercury*, none are so promising in answering all the Intentions of Cure, as *Præcipitatum per se*: For besides the Properties of Quick-silver,

it has that of a *Stimulus*, (which causes the Part upon which it acts to contract) its own Salts being render'd active, quick, penetrating, and unsheath'd. And besides those possess'd by the *Panacea Mercurialis*, *Calomel*, or sweet Sublimate, it retains in some measure that singular alterative † Virtue of the Metal when crude, which is sufficiently demonstrated by the following Experiment, to wit, *Aqua Fortis* makes no Solution when pour'd upon *Calomel*, but readily dissolves *Præcipitatum per se*.

This Medicine is excellent in the *Lues Venerea*, (and in several chronic Cases) where frequent Debauches and long Courses of useless Physick, have over-relax'd the Solids, and brought the whole Machine into a kind of *Marasmus*, and where the *Impetus* of the Blood is become so weak and languid, and its Motion so slow and irregular as to permit the morbidic Particles to attract one another in the Blood, and to irritate the nervous Fibres more or less according

† We took some Mercury precipitated *per se* (that is by the sole Action of the Fire, without any Saline Additaments) and the crude Mercury is not as far as I have tried soluble in our *English* Spirit of Salt: Yet this red Precipitate (which is supposed to be mere Mercury) with its own Sulphur extraverted did readily enough dissolve in that Liquor. *Vide Boyle's Experimenta & Observationes Physicæ.*

according to the Matter contain'd, and by its Acrimony, produce thence frequently *Solutio continui*, whence follow Pains, Tetters, Warts, Ulcers, and Shankers.

In such a Case, the hostile or offending Particles require to be carried off by equal Secretions, rather than by any one Emunctory of the Body. The Necessity of which is occasion'd by the Effects of this Hectical Disposition, and the over Relaxation or Flaccidity of the muscular Parts renders Nature unable to bear any particular Secretion without being attended with a Languor, *Lipothymia*, or a great Disturbance: Therefore the least Inconveniency follows upon equal Secretion at all the Emunctories.

To produce this good Effect, the *Præcipitatum per se* is so slight in Operation, in its usual Dose (from three Grains to six) as to be almost insensible, and hardly troublesome, either in the first Passages, or when convey'd into the Blood (which it readily is, the Mercury, being at this time and in this Form, render'd of a saline Nature, and soluble in the Fluids of the Body) whereupon all the Glands of the Body are as it were set to work, and scour'd of their Contents: So that the Venereal Salts, or any other offending Particles will be cast off; some of them by insensible Perspiration at the Skin, others by the Kidneys,

neys, others by the many salival Glands, others by the Glands of the Intestines, and indeed by all the excretory Glands of the Body.

This is not all, for by its alterative Property it destroys the Acrimony of the Humours, and is not only safe, but in many Cases, a grand Specifick: the Action of its saline *Spiculæ* will only vellicate and twitch the sensible Membranes of the Stomach and Intestines; not as much, or not to that Degree, as to excite them to an Excretion of their Contents, and at the same time perform Wonders in the Body.

But I wou'd not be understood, but that it will prove Emetick and Cathartick, and even raise a Salivation, if it be given in large Doses, or small ones without due Intervals. And in order to prepare it for a larger Dose, and to prevent its operating *ἀνω ἢ κάτω*, or solicit its Discharge before it enters the Lacteals, it will be requisite (Trituration or Levigation being first premised) to mix with it a very small Portion of crude *Opium*, or the like, to lessen the *Stimulus* (by causing an agreeable Sensation on the Stomach and Intestines) and to promote the Secretion by insensible Perspiration, according to the Saying of Physicians; *Opium omnes evacuationes supprimit præter Diaphoresin.*

And

And likewise a very small Portion of Camphire (which is also said to encourage a plentiful Perspiration) to blunt the Irritations of the Salts, and sheath their Asperities, and by its exquisite Subtility to accompany or to follow them into the most minute Canals, that lead to the excretory Ducts. Because it will not be thrown off by the greater Conduits of Evacuation, nor merely circulate thro' the greater Blood-Vessels (which is very often the Case when Mercury is taken internally) but gently and gradually insinuate it self into the smallest Capillary ones.

Being compounded with these Additaments, which promote the insensible Discharge, it may become a powerful Medicine (equal to Dr. *Misaubin's Pilulæ*, or any other hitherto publish'd) to carry off the Remains of a *Lues Venerea*; for all experienc'd Physicians know of how little Service (sometimes) Mercurial Salivations, and the Use of Mercurial Preparations, in curing the Venereal Disease is, without the Use of drying Decoctions and that of warm Bathing, to discharge all the malignant Humour out of the Body; particularly by the Glands of the Skin; which are the best and universal Out-lets of the Body.

To which may be added that Property of crude Mercury, which (this Preparati-
on

on still retains, and) is in no way to be forgotten; its uniting with and destroying of Acids. And that the infecting Matter (in the *Lues*;) is an Acid, appears by some * Experiments that have been purposely made, and it is thought to be sufficiently demonstrated from the Nature of the grand Specifick Mercury, whose Property is *ex diametro* opposite to the Effects of Acids.

In Opposition to This, the learned † *Boerhaave*'s Opinion is, "That it proceeds
 " from an alkaline Cause, and that be-
 " cause it is frequently cured by acid Ve-
 " getables, such as the Woods of Sassa-
 " fras, Guaiacum, Box and Juniper;
 " but render'd worse by Alkalies: So that
 " he cannot agree with those who would
 " have the Specifick Cause of it to be an
 " Acid."

But by the same Rule, *Ejusdem Argumenti*, it must proceed from an acid Cause, for there is no Vegetable (that we are acquainted with) that deserves the Title Specifick in this Distemper; as well as Mercury which is an *Alcali*. For it corrects
 success-

* Vide Dr. *Cockburn* of the Nature, Cause, &c. of a *Gonorrhoea*. P. 50. *Causæ per chymica principia demonstrand.* Vide *Petr. Joan. Fabr. apud Horst.*

† Vide *Boerhaave*'s new Method of Chymistry, Part 3. P. 98. Translated by *P. Shaw, M. D. and E. Chambers, Gent.*

successfully, and most efficaciously, and suddenly eradicates all Taints proceeding from the Venereal *Virus*.

Yet it seems reasonable that we should conclude with this great Man: "That the " Specifick Cause is of an alkaline Nature," and that the Production of this *Virus* can be ascrib'd to no other intelligible and natural Cause, than the animal Salts by the too violent Friction and Attrition in the Act of Coition; and the too frequent Repetition by sundry Agents, and the Heat of the Fluids (that necessarily follows upon Collision on the Impenetrability of Matter) turning those Salts which were formerly soft and benign into fiery, volatile, acrid, corrosive, caustic and poisonous Ones, sufficient to produce (*Pandoræ Mala*) those terrible Effects and Appearances that attend this direful Distemper. And because,

The Nature of the Juices of animal Bodies being Alkalescent or naturally verge to an *Alkali* or Caustic-Salt, by whatever will accelerate the Motion of the Blood with too great Hurry and Violence. The Salts of the Blood, tho' *Sui generis* neither Acid nor *Alkali*, by the Action and Re-action of the Solids and Fluids (which are reciprocal) may become of that caustic Nature, not unlike our potential Caustery *Lapis Infernalis*; so as to render the Parts whereon they act
into

into an *Eschar*, to the Dryness of a Coal, a common Effect of Burning, and to eat away and consume all the soft Parts of the human Body; and in time corrode even the Bones themselves.

This Distemper was antiently call'd Brenning or Burning *, and not unjustly term'd so, from the many Signals of an *Incidium* from its Effects, to wit, Shankers, Caries, &c. the constant concomitant Symptoms that attend it, especially in the last Stages of it, when the Solids and Fluids are brought to a great Degree of Putrefaction: But if the Force and Activity of Saline Concretions should seem insufficient to produce those surprizing and wonderful Effects and Appearances which I have describ'd; it may be reasonable to imagine or suppose that these animal Salts which are united with Sulphur, do likewise collect and unite with Fire, (the most active energetick Principle, whereby they become more piercing and penetrating;) witness that luminous Substance *Phosphorus* (which is the Result of a collected Fire) producible (mostly) from the Putrified Parts of Animals.

And Fire being collected by Attrition, which is the primary or efficient Cause
of

* Vide Philos. Transf. Abr. By *B. Motte*. Vol. 2. P. 4. P. 145.

of this Distemper. And Mercury which unites, destroys and is readily concern'd with acid Sulphurous Particles, (Fire's proper *Pabulum*) may here be an alterative Medicine, and even a Specifick; and as such may justly claim the Preheminence.

This will be still more evident, by the following Observation. When the *igniculi* of *Phosphorus* are exhale'd in lucid Flames; there remains nothing behind but an Acid *Malagma* like oil of Vitriol or Sulphur (*omne sal ex se acidum est*) the Salt is return'd into its *homogene* Nature and pristine Property; there being but one pure and universal Salt, that with regard to different Saline Concretions is as a *Genus* to *Species*.

But, (with Submission to the Determination of the most worthy and learned Gentlemen, to whom this Differtation is inscribed:) Since it appears that both Acid and Alcaline Medicines perform a Cure, the Effect must in Consequence be produc'd some other way besides that of the alterative Power of these Medicines, and that by (the most general and effectual Method of curing most Distempers, especially in Plethoric-Habits) the *Facultas expultrix*, excretive or expulsive Power, that they are endu'd with.

Notwithstanding the Doctrine of Acid and Alkali so highly inculcated, even by
way

way of Regimen or Diet, defumed à
Juvantibus & Nocentibus, viz. An Acid
 Distemper yields to Alcalious Remedies,
 and a *Lixivial* to an Acid: As is implied
 by that trite *Theorem* in Physick, *Similia*
similibus conservantur, et contraria con-
trariis curantur.

F I N I S.







