

A treatise of vapours, or, hysterick fits / [John Purcell].

Contributors

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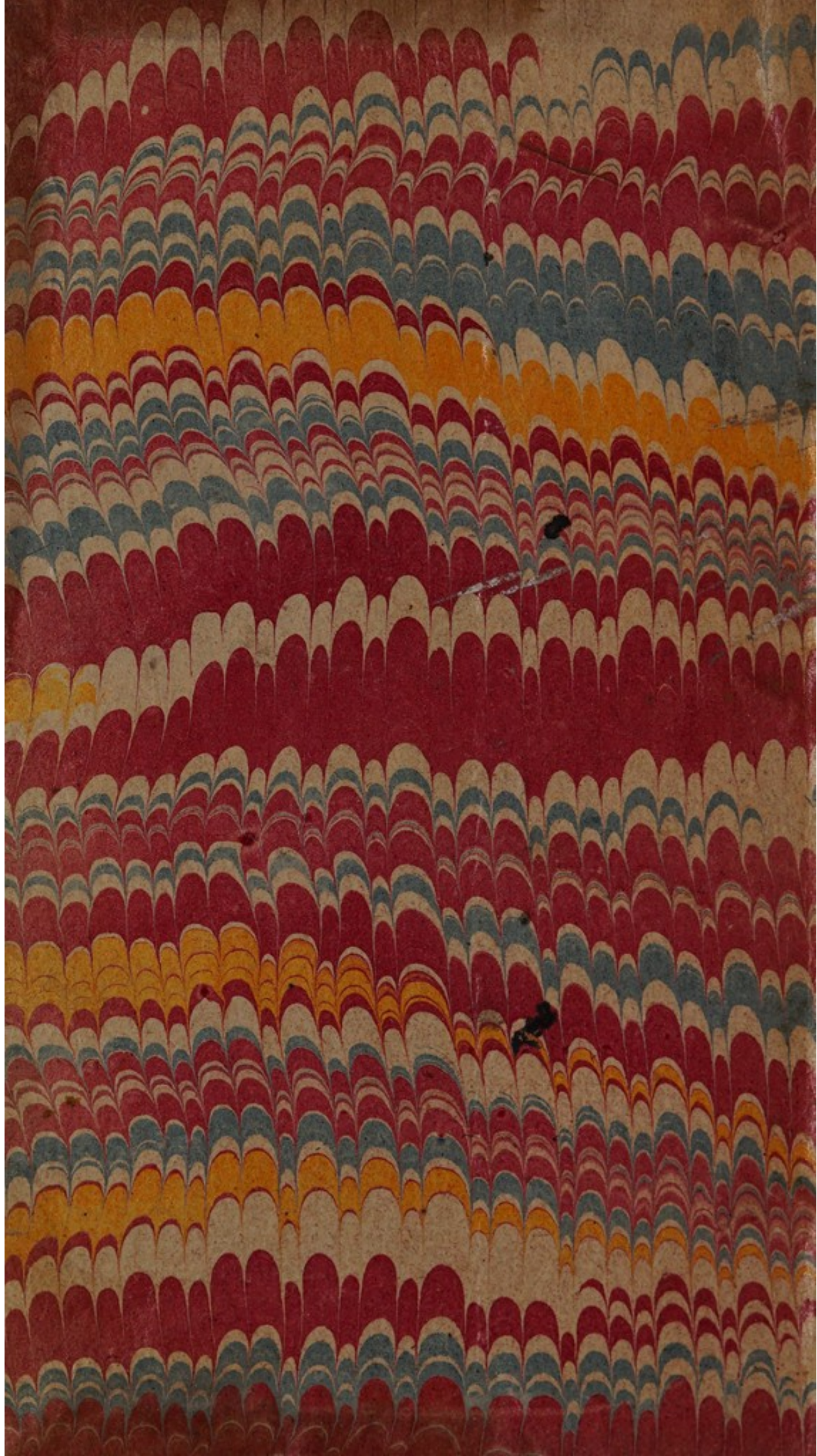
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A
TREATISE
OF
VAPOURS,
OR,
Hysterick Fits.

CONTAINING

An Analytical Proof of its Causes, Mechanical Explanations of all its Symptoms and Accidents, according to the Newest and most Rational Principles.
Together with its Cure at large.

The *Second Edition*, Revis'd and Augmented.

By JOHN PURCELL, M. D.

L O N D O N :

Printed for EDWARD PLACE, at *Furnivals-Inn-Gate*, in *Holborn*. 1707.

THE

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To the Honourable

Sir John Talbott.

S I R,

I Take the Liberty of prefix-
ing your Name to this
Treatise, that there may
be something in it which can-
not fail of being acceptable to
the Reader. I shall not under-
take to dwell upon your Enco-
miums, those things are so
usual in all Dedications, that
they are, at least seem to be,
altogether unregarded: I must
own I am as incapable of doing
Justice to your Merit, as you
are unwilling to have it at-
tempted; and if I have any
thing to value my self upon,

The Dedication.

'tis the Honour of being your near Relation ; 'tis a very great Compliment I make my self, to say I am so ; and yet I should be prouder to be ally'd to your Vertues, than to your Blood. I am glad of all Occasions to shew how much I am devoted to your Service, and if you'll throw away an hour in reading this Book, it will be the only hour you ever spent unaccountably. Tho' I ought to be apprehensive of your Judgment, yet I have great confidence in your Candour ; and hope, that from the number of so many Witnesses of your obliging Disposition, you'll not exclude, S I R,

Your most Obedient

Humble Servant,

John Purcell.

TO THE
READER.

THE Taste of this Age is so very different that what one commends another will certainly blame, and some there are who make it their business to censure and condemn every thing at its first appearing; thinking that like young travellers, they should shew their ignorance if they admir'd what comes new to them. In all Sciences nothing now pleases the generality, but what is conformable to modern Philosophy and mechanical principles; and again there are a great many

To the Reader.

who condemn whatever deviates from the Paths and Footsteeps of the Antients. To please all Men is absolutely impossible ; and I was so far from proposing it to my self, that when I first publish'd this Treatise, I expected more severe censures upon it, than on any book of its kind that had come out of many Years. The approbation it has met with was beyond my expectation ; which I attribute to the most rational and solid principles of that penetrating Philosopher, and great Physician Doctor Chirac professor of Physick, and Fellow of the Royal Academy of Montpellier : who tho' he never writ any thing particularly on this subject, yet has in his works so clearly and mechanically explain'd all the springs and motions of human bodies ;

To the Reader.

bodies ; together with the incident various changes and alterations of their different humours, from the divers figure and motion of their particles, as to oblige posterity perhaps more than the most ingenious Philosophers that ever writ before him. I know these mechanical principles will not suit with the Galenick Sect of Physicians, who explicate all things by Occult Qualities ; which give others no clearer Ideas of what they would explain, than themselves have of the true mechanism of Man's body, whereof they are obstinately ignorant : but I value their censure the less , because the learn'd of this Age are sufficiently convinc'd of their Errors ; and 'tis long since that these Occult Qualities have been banish'd

A 4 from

To the Reader.

from Minerva's School. But if those ingenious Gentlemen and Physicians who are vers'd in modern Philosophy, Mathematicks, and Anatomy, shall find I have in this Treatise contributed any thing to the better discovery of the Causes and Cure of this so general a Distemper, and thereby to the benefit of Mankind: I have obtain'd my End.

As I have not been made sensible of any Errors in the former Edition of this Book, the alterations are few; tho' I have endeavour'd to explain many things more clearly than before. The additions are mechanical Explinations of some Symptoms and Accidents which have occur'd new, or were forgot to be accounted for. I have also candidly

To the Reader.

didly communicated what remedies I have found beneficial in a farther practice of five Years since the first Edition. All the Remedies which are proper to be us'd in any sudden Accidents are given in English, for the benefit of the Reader, who may thereby be inform'd of what is most fit to be done in many dangerous cases where a Physician is not near at hand, but the Receipts in general are no longer so, because several Physicians justly blamed me for publishing them in our Mother tongue before; not that they envy any one the benefit they might possibly reap thereby, but that they know it would redound to the Reader's certain prejudice, by taking on his own insufficient judgment, what in the same distemper may prove either

To the Reader.

*ther helpful or noxious, from several minute circumstances and critical niceties which not one in ten thousand are judges of. From hence some have argu'd also against writing the History of Diseases and their Theory in English; but I cannot join with them: for by the History of Diseases, all, especially the more illiterate who stood most in need of it, learn how to make known their distemper to a Physician, which they wanted terms to express fully and intelligibly: and tho' the Theory be above ordinary Capacities, yet as there are a great many judicious persons of both Sexes who do not understand Latin, 'tis very fitting they should be made acquainted with the Structure and mechanism of their own Bodies; with the different Causes
by*

To the Reader.

by which their natural Functions are perverted ; and the manner how the Remedies operate to restore them to rights again. And certainly it must be a very great satisfaction to the Patient, by knowing something of these matters, to judge whether the Cause the Physician ascribes of his distemper be rational ; and the method of Cure answerable to the cause he assigns : whereas those who are altogether ignorant of them, not only want this Satisfaction, and the Helps they might derive from thence to the clearer discovery of their Disease ; but are also incapable of judging whether the Physician (who is often recommended by favour) understands any thing of what he pretends to, or no. And here I must speak my mind ingenuously

To the Reader.

nuously. I think the generality of Physicians keep their Patients too much in the dark ; which is equally prejudicial to the Physicians themselves, as to the Patients : for if we accustom'd our selves to inform them how such causes produce such and such Effects upon their bodies ; and how the Remedies (I don't mean what they are) operate, and conduce to their Cure, they would thereby learn to distinguish between an able Physician, and a Quack or illiterate pretender ; and we be freed in a great measure from that swarm of No-Doctors and Mountebanks, who pick the pockets, and destroy the Lives of an infinity of Christians. For if a Patient sends for any of those he knows to be Graduate Doctors ; the generality of them after having

To the Reader.

ving given him the hearing, felt his Pulse, and ask'd him some questions ; will write him a prescription, and take their leave. If he goes to a Quack that has got his name cry'd up ; the Quack shall act just in the same manner by him, and tell him, no doubt, he is a graduate Physician of some University or other : how shall he know the difference ? And indeed if the Patient must take Remedies upon an implicate Faith, without having any Reasons assign'd him for what is prescrib'd, how is it possible that any Man of ever so great learning should distinguish between the one and the other ? Moreover is it not a hard reflection, and a very black stain upon our Profession, which we ought to use our utmost Efforts to wash away, to hear
the

To the Reader.

the Apothecaries tell our Patients, as they frequently do to our Faces, that they are sure the generality of Physicians prescribe meerly by Rote and Custom, and can give no reasons for what they do, but that other Doctors have prescrib'd the same things in like Cases? And is it not a very shameful thing, that when every little Artist shall give his Customers satisfactory Reasons, why for Example, his Watch stands; goes faster or slower; how the motion is communicated from the Balance to one Wheel, thence to another, and lastly to the Finger; and that points out such prefixt minutes in such a determinate time? Physicians who profess the noblest and most useful of all Sciences, should refuse so small a Curtesy, and give their
pa-

To the Reader.

patients no reasons for what they do in matters which concern their Health and Lives ?

I have annex'd to this Treatise, a Catalogue of several insignificant Remedies, which Custom and Ignorance have impos'd upon the World, for beneficial in Vapours; whereas in reality they can be of no Advantage to the Patient. It is a new method I have not met with in any Author, but which in my opinion would be very proper in all distempers, that Patients being forewarn'd may not be impos'd upon, nor defer effectual remedies in Expectation of a Cure from what can do them no good.

ERRATA.

ERRATA.

- P**Age 12 line 2 for *Urin*, read *Urine*.
 p. 15 l. 10 leave out *a*.
 p. 21 l. 19 f. *Oeconomy*, r. *Economy*.
 p. 41 l. 11 f. *in several*, r. *in the several*.
 p. 46 l. 23 f. *there*, r. *thence*.
 p. 48 l. 16 f. *Chiras*, r. *Chirac*.
 p. 51 l. 10 f. *but taking*, r. *but the taking*.
 p. 51 l. 12 f. *this*, r. *that*.
 p. 67 l. 19 f. *from*, r. *by*.
 p. 74 l. 2 f. *im*, r. *in*.
 p. 85 l. 13 f. *strait*, r. *streight*.
 p. 92 l. 28 leave out *and*.
 p. 125 l. 21 f. *an Elevation*, r. *and an Elevation*.
 p. 143 l. 8 r. pag. 60.
 p. 145 l. 16 f. *recrements*, r. *recrement*.
 p. 173 l. 8 f. *following*, r. *this*.
 p. 174 l. 25 leave out *Salt armoniack it self*.
 p. 179 l. 20 f. *Doleus*, r. *Dolæus*.
 p. 183 l. 1 f. *itativ*, r. *statim*.
 p. 189 l. 24 f. *Doleus*, r. *Dolæus*.
 p. 204 l. 4 f. *Sabarra*, r. *Saburra*.
 p. 212 l. 6 r. *prescribe*.
 p. 217 l. 19 f. *Patient*, r. *Patients*.

A
TREATISE
OF
Vapours.

CHAP. I.

*Of the Symptoms and
Accidents of Vapours.*

Vapours, (otherwise call'd,
Hysterick Fits, and improp-
erly, *Fits of the Mother*)
is a Distemper which more
generally afflicts Human-kind than
any other whatsoever; and *Proteus*
like, transforms it self into the
Shape and Representation of almost
B all

Of Vapours; or,

all Diseases. Whence *Galen, lib. de loc. affect. cap. 5.* says, *Hysterica passio unum quidem est nomen, varia tamen et innumera accidentia sub se comprehendit.* Tho' several Authors have writ on this Subject, yet no one seems to have consider'd it with that peculiar study, and serious attention, which is requisite for the perfect Discovery of the Causes and Cure of so various a Distemper. The worthy Dr. *Sydenham* to whose accurate Observations we owe much, sets at too great a slight the Theory of Physick; and (with pardon to that great and good Man's memory) endeavours to decry that wherein himself was particularly eminent: For how could he have found out new Methods, and appropriate Remedies for so many Distempers, but from a clearer Insight into their Causes? If Experience had been his sole Guide, he had trod on in the Foot-steps of his Predecessors, and we wanted (not to mention many others) his Method of treating the Small-pox, which has redeem'd infinity of his Country-men

Hysterick Fits.

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try-men from the Jaws of Death. And if (as himself seems to intimate) his whole Theory consisted in an exact History of each Disease, whose *Phænomena* he lay'd down plainly, without using any Hypothesis for his Assistance; and thence himself did, and thought others might, easily find out suitable Remedies for all Distempers: I must needs say I neither can be of, nor think he himself acted by his own opinion. For put the Case he had found any Distemper, for example the Small-pox, treated in such a manner by his Predecessors and Contemporaries, that he concluded the Method kill'd more than the Distemper it self: upon which, by a diligent observation he collects an exact History of it, and intirely alters the method of Cure. Now, as he was certainly a very judicious and conscientious Gentleman, is it possible that at the hazard of his Patients Lives, he would have ventur'd on a new Method, without any other grounds for his proceeding, than barely because the com-

Of Vapours ; or,

mon one was wrong ; when it was fifty to one, that amongst so many, he mis'd of the right, and light into another as wrong ? No, certainly ; he would sooner much have left the Work entirely to Nature, and not have interfer'd in it. Whence I conclude, and it appears evidently thro' his Works, that he, and not only he, but all the ancient Physicians, even *Hippocrates* himself, had their Hypotheses, by which they accounted for every particular Distemper, and all its Symptoms and Accidents. For how possibly shall any reasonable Man judge from such and such Symptoms, the Method in Curing ought to be this or other, unless he has an Idea of the Causes and Manner of their Production ? Which *Idea* is an *Hypothesis*. Now, whether those of the Ancients, or our modern ones, are more conformable to Reason and Experience, I think will admit of no dispute ; however, I leave it to their decision, who have examin'd both. Nor is what is here said, to derogate from the Experimental and
Practical,

Hysterick Fits.

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Practical, which I own to be the more sure and useful part of Physick; but to prove the indispensable necessity, as well as benefit of the Speculative, wherein chiefly the Judgment of a Physician consists; and without which, the Practice is more a thing of Memory than Judgment; and might, and is, exercis'd by thousands, who for want of the Theory, are justly term'd *Empericks, Quacks, and Mountebanks*. Again, without a well-grounded Theory, which can assign, if not demonstrative, at least the most probable and rational Causes of Distempers, and their Symptoms, how can appropriate Remedies be ever found out to new Diseases? Of which, many have broke forth in the last Century, and some in our days.

The best argument alledg'd by those, who decry the Theory of Physick, is, that the Hypotheses are not demonstrative, and consequently may lead their Followers into Errors. I grant the greatest part are not; yet some are already brought to a demonstration, which

Of Vapours ; or,

forty years ago were esteem'd as erroneous as the most improbable ones now extant ; nor are greater daily Improvements to be despair'd of : or if they were, ought we to reject the most probable reasons, because not demonstrative ? No, certainly ; 'tis the part of every Physician, who undertakes to write of a Distemper, to account mechanically for all its Causes, Symptoms, and Accidents : and tho' he should not every where hit of the right ; why, as Physick has receiv'd vast improvement of late, may not others take hints from our reasoning, and improve them farther, so as by degrees to render even the speculative part in most things demonstrative, to the great benefit of mankind ? And this appears the more probable, considering the method the Learn'd in Physick now take of reasoning upon Matter of Fact. 'Tis true, *Riverius*, *Sylvius*, *Willis*, and many others of the last age seem to have follow'd the same method ; but they wanted those great Lights into Nature, which

Anoto-

Anatomical and Philosophical Discoveries, in these our days, have given us ; whereby, together with the benefit of their writings, we may hope to give more satisfactory reasons, than they could for what shall be advanc'd.

My design is, first, to give a *History* of all, or at least of the most essential and remarkable Symptoms and Accidents of this Disease ; next, to seek out the *Causes* that are capable of producing them : which being establish'd, I shall proceed to a mechanical explanation of the Manner how they are produc'd ; then speak a word or two of Distempers this *prognosticates* or leads too ; and lastly treat of its *Cure*.

Those who are troubl'd with *Vapours*, generally perceive them approach in the following manner ; first, they feel a Heaviness upon their Breast, a Grumbling in their Belly ; they belch up, and sometimes vomit fower, sharp, insipid, or bitter Humours : They have a Difficulty in Breathing, and think they

Of Vapours ; or,

feel something that comes up into their Throat, which is ready to choak them ; they struggle ; cry out ; make odd and inarticulate Sounds , or Mutterings ; they perceive a Swimming in their Heads ; a Dimness comes over their Eyes ; they turn pale ; are scarce able to stand ; their Pulse is weak ; they shut their Eyes ; fall down, and remain senseless for some time : afterwards, by little and little, their Pulse returns, their Face regains its natural colour , their Body grows hot as before, they open their Eyes, sigh, and by degrees come to themselves.

Some moreover have their Bellies swell'd and stretch'd like a Drum, their *Hypochondria's* distended, and they fancy they feel some Part within them rowl from place to place ; their Pulse is almost imperceptible ; they feel a violent Cold run up their Backs, which afterwards strikes through their whole Body ; their Heads ache, and sometimes there ensues a Palpitation of the Heart, and a fainting away. There are many, who when these

Accidents

Hysterick Fits.

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Accidents are over, come quietly to themselves by degrees ; and in others, when the violent Cold is ended, a no less violent Heat succeeds, which casts them again into many of the former Accidents ; as Palpitation of the Heart, Head-aches, Giddiness, Difficulty in Breathing ; and into some new ones, as Flushing of the Face, Raving, Convulsions, foaming at the Mouth, violent Beating of the Muscles and Arteries, and a tingling Sensation in the Thighs, which were Paralitick during the cold Fit ; nay, sometimes the Palsy will continue in the hot Fit too. Sometimes the Cold, with which the Fit begins is hardly perceptible, and then the Patient has no raging Symptoms whilst the Cold lasts ; but when the Hot Fit comes on, it is accompany'd with several of the above-number'd Accidents, but the Pulse beats higher and quicker than in the foregoing State : and if no Cold or Chilness at all was to be perceiv'd before the hot Fit, then the Symptoms which happen, will be

Of Vapours; or,

be yet more violent, and the Pulse beat higher, and more frequent.

Sometimes the Patients in this Distemper, fall into such violent Fits of struggling, that they can hardly be held; they mutter odd and inarticulated Sounds, foam at their Mouths, and knock their Breasts. Others suffer such violent and long-continu'd Contractions of the Diaphragm, and Intercostal Muscles, that their Breast and lower Belly remain elevated for a long time together, so that they cannot draw their Breath all that while; nay some have lay'n for three whole days, without the least Sign of breathing that could be perceiv'd by those that were about them. Very often the Patient will be seiz'd with a Difficulty of Breathing, and a Pain in her Throat, which feels to her as if a hard Ball were violently press'd against the outside of her Wind-pipe; to another, or to the same Person at another time, it shall seem as if a Stick were thrust down her Throat which distends it violently, and in a manner quite stops

Hysterick Fits.

II

stops her Breath; or lastly, that a Rope about her neck does almost strangle her.

One complains of a violent Pain on the top of her Head, which *Sydenham* calls *Clavus Hystericus*, and it is frequently accompany'd with Vomiting.

Another is troubl'd with a Pain under her Heart, and a Reaching to Vomit; or vomits a mixture of porraceous and cholerick Humours; and it ends in the Jaundice.

A third lies with her Jaws press'd against each other with all the violence imaginable, and her Nostrils drawn together so close, that she is in danger of being suffocated. Sometimes, whilst she lies in this condition, her Eyes shall be fix'd and staring; at other times inverted towards the Nose; or else wildly rowl from side to side.

A fourth, upon the Smell of Civit, Musk, Amber, or any such sweet Scent, shall fall into Fits.

A fifth shall be molested with them upon any Anger, Passion, or Disturbance of Mind, which are immediately

Of Vapours; or,

mediately follow'd with a great quantity of pale Urin.

A sixth is very thoughtful, blushes, or grows pale on a sudden; has a deprav'd Appetite, sometimes too craving, at other times loathing all sorts of usual Meats, and is pleased only with the eating of Trash, as Chalk, Charcoal, &c.

A seventh will on a sudden burst out into extravagant Fits of Crying, or Laughing, without being provok'd thereto by any external cause; or else be extreamly Talkative, and run on in a long incoherent discourse of those things which trouble her Mind.

Besides all these, several other Accidents happen to People troubl'd with this Disease; as a Pain in the Bladder and Kidneys, like that of the Stone and Gravel; violent Cholicks, Swellings in the Jaws, Shoulders, Legs, Hands, or Thighs, which yield not to the finger that presses them, nor retain any mark: A Pain in the Back, which all feel more or less, as also in several parts of the body, so violent, that the Place affected

fected cannot endure touching for a long time afterwards; they Breathe short and with pain; Yawn and Stretch; their Sleep is disturb'd, and their Dreams are frightful; sometimes they remember what happen'd in their Fit, sometimes they do not; they Cough without intermission; Spit thin, and in vast quantities, for several weeks as if they were in a Salivation; with many other Accidents which shall be mention'd in their due place.

Lastly, we observe that those who have labour'd long under this Distemper, are oppress'd with a dreadful Anguish of Mind, and a deep Melancholly, always reflecting on what can perplex, terrify, and disorder them most; so that at last they think their Recovery impossible, and are very angry with those who pretend there is any hopes of it: The least Contradiction to their Will casts them into violent Passions; they are fickle, wavering, and unconstant, now resolving on one thing, and immediately changing to something else, which they presently

Of Vapours; or,

ly quit; and indulging their Distemper they decline all Diversions.

Note, that all these Accidents do not happen to every one that has *Hysterick Fits*, or the *Vapours*; but some to one, some to another: this Person shall be molested with a great many, that with but a few; and it suffices that any two or three of them return by Intervals, to have them term'd *Vapours*.

It is also to be observ'd, that this Distemper comes by Fits, and has its Intervals like an Ague, tho' the Return be not exactly periodical, and that in every *Paroxysm*, much the same Accidents happen as did in the precedent, provided the Patient committed no excess in the Interval.

CHAP.

CHAP. II.

The Causes of Vapours.

HAVING in the precedent Chapter treated of the many *Symptoms* and *Accidents* of this Distemper, I shall endeavour in this to lay open the true *Causes* thereof: and since many eminent Authors assign different ones, the surest way of discovering the Truth, is *Analytically* to examin what there is in a Human Body capable, and what incapable of producing these Effects.

In the first Place, it is demonstrative, that what we call the *six non-natural Causes of Distempers*, (*viz.* Not the six Non.natural Causes. the Air we breathe; our Meat and Drink; Sleep, and want of Sleep; the Motions and Repose of our Body; the Retention or Evacuation of its Recrements and Excrements; and the Passions of the Mind;) are none of them the immediate Cause of this

this Distemper ; since the *Paroxysm* often happens when these affect the Body no otherwise than they did in the Interval ; during which time, nothing happen'd like to what we observe in the Fit.

Not the
solid Parts
of the Body

Secondly, The *solid Parts of the Body*, cannot be said to be the Cause of this Distemper, their Organization rendering them incapable of producing any Alteration, or Depravation of the Functions of the Body, without the Concurrence of some of its *fluid Parts*.

Nor the
Blood.

Thirdly, That the original Cause of this Disease does not lie in the *Blood*, I prove thus. It is an undeniable *Axiom*, that every thing remains in the same State it was in 'till it receives some new Motion or Alteration from some other Body ; consequently the *Blood* must remain in the State and Condition it was in before the *Paroxysm*, unless some other Body causes a new Motion and Alteration in it ; therefore it is that other Body, not the *Blood*, which causes these Fits ; moreover, they do not continue from their
first

Hysterick Fits.

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first coming on, without intermission, as in continu'd Fevers, but seize the Body by Intervals, or at least in the Intervals do not operate with the same violence as during the *Paroxysm*: From hence I conclude, that if the Cause lay in the *Blood*, it must have some time to be form'd and collected in a sufficient quantity (during which, no Symptoms nor Accidents of the Distemper, are to be perceiv'd) afterwards it ferments, and mingles with the whole mass of the Blood, and produces these Effects: But let any judicious person weigh seriously with himself, how it is possible that an Acid Salt, of such a fix'd nature as is requir'd to cause a shivering Cold through the whole Body, should gather together in such a heterogeneous liquor as the Blood is, which consists all of such particles as ferment, attenuate, and volatilize themselves without intermission. Again, if the Cause lies in the *Blood*, why does it not sooner disengage it self from it, and produce its effects when the Blood is in a Fever, or violent

C

Of Vapours; or,

olent fermentation, than when it is in a moderate one, as most frequently happens just before the *Paroxysm*? And since it may be objected, that there is no such thing as *fix'd Acids*, because by the force of fire, all Acids can be render'd volatile; I desire the Reader to take notice, that I consider them here in another nature, that is in regard to the effects they produce, and that I term those Acids *fix'd*, which do constantly coagulate the Blood and other sulphurous liquors, such are *Vinegar*, the *Juice of Limons*, &c. and those Acids *volatile*, which ferment these sulphurous liquors, such are the *Spirits of Vinegar*, the *Spirits of Pismires*, &c.

Fourthly, Neither the *Spirits*, the *Lympha*, the *Gall*, the *Pancreatick Juice*, the *Ferment of the Guts and Stomach*, nor any of the other *Recrements* which are separated in Man's Body, can be assign'd as the *adequate Cause* of this Distemper, because they entering continually into the Blood, would consequently produce these Accidents without

Inter-

Hysterick Fits.

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intermission; which does not happen.

The Ancients assign'd the *Womb* as ^{Not the} the *Cause of Vapours*, and ignorant-^{Womb.} ly fancy'd it rose up into the Throat. But every one who has the least knowledge of Anatomy is convinc'd how impossible that is; for (besides the Ligaments wherewith the Womb is ty'd down in the lower Belly) the Scituation of the *Diaphragm*, and other Parts contain'd in the Chest and lower Belly, renders its Rising up to the Throat impossible.

Others who ground themselves ^{Not Va-} more upon Authority than Reason ^{pours ri-} and Experience, assert that tho' the ^{sing from} *Womb* cannot rise up into the ^{the Womb.} Throat, yet it is the *Cause* of this Distemper, *by collecting vitious and corrupted Humours in its Cavity, which it sends in Fumes up to the Head*, and so produces the many and various Accidents which afflict the Patients. To these I answer, that supposing such *Corruptions* and *Fumes* were engender'd in the *Womb*, they would sooner vent themselves

C 2 down

Of Vapours ; or,

downward by its Orifice, than mount up through so many Membranes, Muscles, &c. through which there is no passage to the Brain : Besides we see that in *Cancers* and *Ulcers* of the *Womb*, (which make that part the very Sink of the Body) none of these Accidents happen : And in the dissection of Women, who were constantly afflicted with this Distemper, I never yet met with one that had any Corruption or Ulcer in the Womb ; and the most experienc'd Authors and Anatomists do affirm it seldom happens.

Some pretend that the *Cause* of this Distemper lies in the *Brain*, and that *Vapours* are nothing but an *Epilepsy*. Indeed the Symptoms of these two Diseases, are so very like, that I should not contradict any one that calls them by the same name : however I do not think the *Cause* either of *Vapours*, or of *Epilepsies*, (at least those which are call'd *Sympathetick*) lies in the *Brain* ; for if there be an *Ulcer*, or what else you please in the Brain, from whence heterogeneous particles exhale and mix

Nor is the Disorder of the Spirits, the adequate Cause.

mix themselves with the Spirits, and by exciting a fermentation in them cause all the Accidents of *Hysterick Fits*; how comes it to pass, that the same Cause still being present, the same Effects are not constantly produc'd? I mean, why do not the Symptoms of this Distemper afflict the Patient without intermission? Moreover, this Cause is unproportion'd to the Effects produc'd; for it is not an easy matter to explain how these heterogeneous particles disturbing the Spirits in the Brain, can cause a *Heaviness on the Breast*, a *Grumbling in the Guts*, a *Belching of sower, sharp, or insipid Fumes*. I suppose it will be said, that they disorder the *OEconomy* and regular motion of the Spirits, and make them flow irregularly into various Parts of the Body; that when they flow thus into the Guts, they cause violent Contractions in them, from whence proceeds their *Grumbling*; and when they flow towards the Stomach, they cause the Patient to *Vomit*. To this I answer, that granting the Perturbation excited in

the Spirits does cause them to flow irregularly and in greater quantity into the Guts, their Effect can only be a swifter *Peristalick Motion* in them, but no ways the *Grumbling* ; which can only be excited by Crudities and Indigestions which rarify themselves into Air, and rowl up and down in the Guts. Again, in the Fits they belch up *sower, sharp, or insipid Fumes* ; and granting this Perturbation of the Spirits causes the Convulsion which brings them up, no one will pretend that it can create sower or sharp humours in the Stomach, since the Spirits themselves are incapable of contracting any Acidity : And if it were in their nature to produce this effect, why do they not, every time their Motion is more violent and inordinate by *Passion* or otherways, produce such sower or sharp humours ? And why are these Fumes of so different a nature, not only in different persons, but also in the same persons, at different times, since they are produc'd by the same Cause which still operates in the same manner, that

that is, which give an irregular and inordinate motion to the Spirits? Again, 'tis impossible in this *Hypothesis* to account for the Cold which seizes the whole Body? For we find by experience, that a violent Perturbation of the Spirits has a quite contrary effect, and sets the Blood on fire. Another argument, and that a very strong one too, to prove that the *Perturbation of the Spirits* is not the *fundamental Cause of Vapours*, is drawn from the nature of the Remedies which all Physicians, even the very Authors and Asserters of this opinion, prescribe in this Disease, *viz. Apperitive Medicines, Spirit of Salt Armoniack, Spirit of Urine, &c.* which we know are so far from abating and quelling the violent motion of the Blood and Spirits, that on the contrary it is a known matter of fact, that they always augment their fermentation and ebullition. 'Tis true, they order *Anodyne Medicines* and *Narcotics*, in Frenfies, Raving and violent Convulsions, thereby to allay the present Symptoms; but always pre-

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Of Vapours ; or,

scribe *Apperitive Medicines* (which they themselves own, exalt the fermentation of the Blood, and render it more spiritous) to eradicate the Cause of the Distemper.

Therefore since none of the above-mention'd Causes can be admitted ; it remains, that the true Cause must reside in the *Stomach* and *Guts* ; whereof the *Grumbling* of the one, and the *Heaviness* and *Uneasiness* of the other, generally preceeding the Paroxysm, are no small proofs.

Now let us examine what there is in them, that can produce these effects.

*Not the
Chyle.*

First, It is not the *Chyle*, for that daily enters into the Blood, within half an hour, or little more, after our meals, and yet the Fit does not happen after every meal, nor every day ; but very often after the Patient has been a long time without eating.

*Not the
Ferment of
the Sto-
mach, nor
the Gall,
&c.*

Secondly, Neither the *Ferment of the Guts* and *Stomach*, nor the *Gall* or *Pancreatic Juice*, which pass into the *Duodenum* to elaborate and purify

rify the *Chyle*, (of which they make a part, and do daily, if not hourly enter into the Blood) can of themselves, as I have already shewn, be the Cause of these Accidents.

Nothing else is to be found within the Stomach and Guts, capable of producing these Symptoms, unless it be the *Aliments* we take. But these we know, when well concocted and digested, are so far from producing any ill effects upon Man's Body, that they alone sustain and preserve it in a capacity of exercising its natural and animal Functions: However, if they by any vitious Concoction, turn into *Crudities* and *Indigestions*, then their laudable qualities are chang'd into quite opposite ones, and they produce the many Accidents and Symptoms of this Distemper: For when, by the vitious Qualifications of the Ferment of the Stomach, the Aliments are not well digested, they turn into Crudities, these Crudities by little and little gather together in the Wrinkles and Folds of the Stomach and Guts, where they lie
for

The true Causes are Crudities and Indigestions.

for some time, without much sensible motion or fermentation within themselves, 'till at last by the Heat of the circumjacent Parts, their grosser Salts are divided and put in motion; which Fermentation is augmented by the various Juices that flow into the Guts from the many Glands which are plac'd in the lower Belly; and by this means they are so dissolv'd and liquify'd, as to enter by the *Milky Veins* into the Blood, where they produce all those Accidents which I shall derive from this Cause, and account for mechanically in the following Chapter.

And as I just now drew an argument from the nature of the Remedies that cure *Vapours*, to prove that the *inordinate motion* of the Spirits was not the *adequate Cause* of this Disease, tho' it might be the immediate one of some particular Accidents of it; so here I draw a very solid argument from the nature of the same Remedies, to establish the Cause I assign; because only *aperitive Medicines*, which are proper to divide

divide the tough glutinous Sulphurs of the Blood, and to ferment, volatilize, and render it more spirituous, can effect an entire Cure. Which makes me wonder how so many ingenious Authors could act so contrary to their Reason, in prescribing Remedies they knew would have an opposite effect to that of abating the violent motion of the Blood and Spirits; or reason so contrary to their own Experience, whereby they always found, that nothing could ever make a perfect Cure of this Distemper, but what divided, attenuated, and spiritualiz'd the Blood, as it is the nature of appetitive Medicines to do.

Indigestions then are the *principal* and *original* Cause of *Vapours*: The *Disorder of the Spirits* thence arising, *The severe the immediate Cause of several Symptoms and Accidents*; and the *remoter* of *Vapours* Causes, are the *Abuse of one, more, or all of the six non-natural Causes of Distempers*, which being either unwholesome in their own nature, or communicated to the Body in an undue proportion, change the natural constitu-

Constitution of the Blood into a crude, acid, or glutinous one; and consequently the Ferment of the Stomach which is separated from it partakes of the same Vices, and thereby is render'd incapable of digesting the Food into wholesome Chyle, but converts it into *sower Crudities*, which remaining in the Stomach and Guts produce this Distemper in the foresaid manner.

It is to be remark'd, that these *Indigestions* are not always of the same nature, but that in some they are *sower*, in others *rough* and *harsh*, *nitrous*, *insipid*, *stercorous*, &c. and it is from this diversity of *Crudities*, and their different degrees of *Fixedness* and *Volatility*, and the various *Constitutions* of the Blood, that this Distemper is attended with so many different Symptoms and Accidents.

And since it is impossible to number up all the different Constitutions of Men, which tho' generally divided into four, yet admit of as many sub-divisions as there are individual persons, (there being not two Men alive, whose Constitutions do not vary

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vary in some measure:) It is impossible to assign the difference that every Temperament causes in this Distemper. However I shall take notice of three differences which are most remarkable in it, the others may be explain'd by a Constitution of Blood more or less *volatile* or *fixed*; and by a greater or lesser quantity of the *Crudities*, which must also be consider'd in regard of their *Fixedness*, *Volatility*, *Sharpness*, *Sowerness*, &c.

The first is a *thick, gross, glutinous Texture of the Blood*, very difficult to ferment; Such is the Constitution of those who after a sensible and great Cold through all their Body, return to their natural heat without any augmentation thereof, or feverish disposition: And as for the *Crudities* in this case, they always abound with fixed Acids, being either very sharp and sower, or rough and harsh, as the Patient will inform you, by the Taste she has of the Fumes she belches up; and in those who do not belch at this time, it is demonstrative by the effects
produc'd,

Of Vapours; or,

produc'd, since nothing but fixed Acids, or Humours of a rough harsh taste, are capable of coagulating the Blood to such a degree as is requisite to cause a general Chilness throughout the whole Body; and it is matter of fact, that nothing but fixed Acids mix'd and combin'd with elementary Earth, can cause the harsh favour they often perceive in the Fumes they belch up.

The second is a Texture of Blood, which tho' *thick and compact*, is not *so gross and glutinous as the former*; consequently its Salts get loose, and ferment quicker, and attenuate and volatilize themselves more than in the precedent Temperament: such is the Constitution of those, who after a Chilness, fall into a considerable heat: In these it is manifest the Crudities are of a fix'd acid nature, (since they feel a Chilness) tho' not so fix'd as in the precedent case. This differs from the former, but in a lesser fixation of the Salts, and easier division of the sulphurous particles of the Blood, as also
in

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in a lesser Fixedness of the Crudities which cause the Distemper.

The third is a Constitution of the Blood which abounds in volatile Salts, ready to ferment on all occasions, and whose sulphurous particles are very open, and much divided, so as not to hinder the easy concurrence of these fermenting Salts; and the Fumes they belch up are generally of an Alkaline nature, insipid or stercorous, not so fower and sharp, as in the two former Temperaments. Such is the Constitution of those who fall into these Fits upon the Smell of *Musk, Civet, Amber*, or by any *Passion*; and of those, whose Fits begin with a Heat, without any Chilness preceding. Now, we know that nothing can ferment the Blood so on a sudden, but *volatile Alkalies*, or *volatile Acids*: And since we find by Experience that these Persons generally belch up such Crudities as are known by their Taste to abound with Alkaline Salts; therefore I conclude, that in this Constitution the Crudities which cause the Paroxysms
are

Of Vapours; or,

are of an Alkaline nature, and not so fix'd as in the precedent Constitutions.

And here I would have you take notice, first that when I assign such a different nature of Fumes to these different Constitutions, I talk of what most generally, not what always, happens; for I am not ignorant, that sometimes a Patient, not only in different Paroxysms, but in one and the same, shall belch up very fower or harsh rough Fumes, which immediately upon some Perturbation of the Mind or Body, will be succeeded by Fumes of a quite contrary favour.

Secondly, that when I say the Crudities are of an Alkaline nature and not very fix'd, I do not thereby pretend, that whenever these Accidents happen, 'tis an evident sign of such Indigestions in the Stomach; for I know very well, that several of these Accidents may and do daily happen to Persons of a looser Texture of Blood, upon the bare *Smell of Civit, Musk, Amber, &c.* without having ever in their lives been troubl'd

troubled with *Vapours*. But I think in this case, those Accidents ought not to be term'd *Vapours*, as wanting an essential condition; viz. a permanent cause producing these effects by Intervals.

It remains, that I explain how these Crudities cause the Fits to come by Intervals; for it is matter of fact that they discontinue for a Week, a Fortnight, &c. and then return. If therefore Indigestions are the cause of this distemper, it is evident, that during the Interval, they either change their nature, or that there is no more of them left, at least in a sufficient quantity to continue the Fit. Now it is not probable that they change their nature, since within a few days the self same Accidents will return again. Shall I say that there is not a sufficient quantity, and that there is requir'd an Interval to gather together so many Crudities from the Indigestions, as may suffice to produce these effects? But that cannot be asserted neither, since we find, that the *Smell of Cr-*

Why this Disease seizes by Intervals or Paroxysms.

*vit, Musk, Amber, or that any violent Passion, nay sometimes the drinking a Glass of cold Water brings on the Fits immediately; which makes it plain, that the Cause is generally, if not always present, in a sufficient quantity to occasion the Paroxysm. But the reason why it does not continually produce these effects, is, that the Crudities being of a fixed nature, require a certain time to digest, ferment, and become liquid to that degree, which is necessary to render them fluid enough to enter by the Milky Veins into the Blood. And a clear proof, that after their Accumulation, they require this certain space of time to digest and commence an intestine fermentation before they can be liquify'd by the various Juices which are daily, if not continually, power'd upon them; is, that if in this distemper (and it is more easy to be observ'd in *Intermitting Fevers*, the return of whose Paroxysms is more certainly known to a perfix'd time) you give the Patient a Glass of water or any other liquor half*

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an hour or an hour before the Fit
uses to return, you advance it, and
make it far more violent: and the
reason is, because the Crudities,
which occasion the Fits, being di-
gested, fermented, and liquify'd al-
most as much as is requisite for their
Admittance into the Milky Veins;
this fluid helps to ferment and dis-
solve them so much the sooner,
and serves as a Vehicle to carry
more of them into the Blood;
whereby the Symptoms will come
sooner, and be more violent. But
if one drink the same quantity of
Liquor ten or twelve hours before
the Fit, nothing ensues thereupon,
because the Crudities remaining in
their fixedness, have not yet ad-
vanc'd their intestine fermentation
to such a degree, that the Liquor
can act upon the Salts so as to dis-
solve and carry them into the blood.
Now to tell infallibly at what hour
the *Paroxysm* will come, and what
Symptoms it will produce, it is ne-
cessary to know first, what degree
of Coagulation these Crudities have:
Secondly, The Mass of the Parti-

cles which are to ferment: And Thirdly, what quantity of movement it is, that puts them in motion. Which being impossible to be known, it will suffice to say, that these Crudities being gather'd together in the Stomach and Guts, do digest sooner or later, according as they are more or less fix'd: and by the Concurrence of the various Juices which are power'd into the Guts, they on a sudden ferment, liquify, and enter by the *Milky Veins* into the Blood.

We have several Examples of this sort of *Fermentation*, both in liquid and solid bodies, which remain for a considerable time without any perceptible motion, and on a sudden ferment in the most violent manner. So *New Wine* stands for a considerable time without the least appearance of fermenting; and on a sudden rarifies it self so violently, that it will burst the strongest Vessels, if it has not vent given it. So we see a *Stack of Green Hay* remain for a long while without any sign of alteration, and
on

on a sudden break out into a flame. And to convince you, that it is the nature of *Salts* and *Humours contain'd in Man's Body*, (as well as of things foreign thereunto) be they never so fix'd, to break out at last into a *Fermentation* and *Dissolution*; do but reflect that most of the *hardest Tumours* which rise on Man's body, tho' they remain sometimes two or three months, or longer, without the least sign of fermenting, do at last of themselves (if let alone) dissolve and suppurate.

And tho' I have assign'd *Crudities* to be the cause of this distemper, I do not deny but that it is often produc'd by *Obstructions*: but even then *Indigestions* and *Crudities* are the more immediate causes. For when by the abuse of any one or more of the six non-natural causes of Distempers, *Obstructions* are occasion'd, whether in the Womb, Liver, or elsewhere; the retention of that Recrement causes an union of its *Salts* with the Blood, and consequently with the Ferment

*Obstructions
sometimes the
cause.*

of the Stomach, which is separated from it: which being thereby viti-ated, creates *Indigestions* and *Crudities*, whence this Distemper arises.

The Disorder of the Spirits, is the immediate cause of some Accidents, but not the adequate cause of the Distemper. Note also, that when I say *Crudities* are the cause of this Disease, I do not deny but that it is the *Disorder of the Spirits*, which immediately causes the *Convulsions*, and several other accidents. However, I think that *Crudities* ought to be look'd upon as the *Principal* and *Efficient Cause*, and this Disorder of the Spirits, and the Symptoms it produces, only as Effects which flow from thence.

Why Women are more subject to Vapours than Men. Now the reasons why Women are more subject to *Vapours* than Men, are first because their *Menses* is an Excrement more apt to cause Obstructions than any Recrement or Excrement whatsoever in Man's body; and being retain'd produces more various and dismal Accidents: whence *Hippocrates lib. de morbis Virginum*, says, *Multis et incomprehensibilibus fere affectionibus premuntur miserrimæ mulieres.* And
Demo-

Democritus in Epistola ad Hippocratem, writes, Sexcentarum ærumnarum, innumerarumque calamitatum author est Uterus.

Secondly, Because from the weaker texture of their Brain and Nerves, they are more subject to violent passions, and more deeply affected by them than Men are.

Thirdly, Because their Diet is generally more irregular.

And Lastly, The still unactive life they lead renders their blood impure, for want of a sufficient perspiration, and thereby contributes much thereunto: for we seldom see Women inur'd to sweat and labour troubl'd with this Distemper.

D 4 CHAP.

C H A P. III.

Mechanical Explanations of the Symptoms, and Accidents of Vapours.

IN the foregoing Chapter, I assign'd and explain'd the Causes of this Distemper ; in this shall give the Reader mechanical Explications of its Symptoms and Accidents.

And to commence with what most generally happens at the beginning of the Fits ; the *Heaviness* which they perceive on their Breasts towards their Stomachs, is occasion'd thus. The Crudities being enter'd into the Blood, the fix'd Acid Salts with which they abound, do mix and interweave themselves with the Sulphurous and Lymphatick parts thereof, by which means they coagulate the whole Mass, and consequently render it obnoxious to ob-

Heaviness on the Stomach.

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frustrates its own course of Circulation : which is more apt to happen in the Lungs than any other part of the Body ; because they are of a slack and loose composition ; and therefore the Blood looses more of its motion in them, than it does in any other part of the Body through which it circulates ; by which loss of motion, it becomes less fluid, and stops in several windings of the Veins and Arteries. Now the Blood which is continually forc'd from the right Ventricle of the Heart into the Lungs, not finding as usually a free passage thro' them, nor a way to return into the Heart, (being hinder'd by the *Valvula Semilunares*, which in the *Diastole*, shuts up the *Arteria Pulmonaris*) distends, and stretches the Arteries, whereby the Vesicles of the Lungs are press'd into less compass, so that they cannot admit of the usual and requisite quantity of Air ; for want of which the Blood is still more coagulated, stops, swells, and distends the Arteries more and more : which cannot happen but that at the same time the
Nerves

Of Vapours; or,

Nerves of the Lungs must both be distended, and press'd by the coagulated Blood; whereby the Spirits are compell'd to undulate up to the Brain with such a Motion, as by the *Establish'd Laws of the Soul and Body's Union*, is always accompany'd with the Feeling of Heaviness.

Now 'tis manifest a Difficulty of breathing must inevitably follow, because the Stagnation of the Blood in the Lungs presses its vesicles so close together, that the Air cannot freely enter, nor in a sufficient quantity.

And here I would have you remark, that all *Sensation* whatsoever, is nothing but a *Perception of the Soul*, occasion'd by the Spirits undulating from any particular part of the Body to the Brain, by reason of an impression from some adventitious cause. Which tho' not demonstrable in it self, because we cannot prove how a Material Body can have any effect upon an Immaterial Essence or Spirit, as the Soul is; yet seeing that on the occasion of this Reflux and Motion of the Spirits, such a
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Sensation is always rais'd ; it is on very good grounds we affirm, that the *God of Nature* has united the *Soul* to the *Body* with such *Laws*, that whenever a *Reflux* of the *Spirits* to the *Brain* happens, then the *Soul* should be affected with a *Sensation* referable to that *Part* from whence the *Motion* began. And different *Sensations* consist in the different *Motion* and *Reflux* of the *Spirits* from each part to the *Brain* ; to which the various *Structure* of the organick parts of the *Body* contributes much, and was purposely contriv'd by nature. So the *Eye* is compos'd of many various *Tunicles* and *Humours*, to moderate the *Impression* made by the *Luminous Particles* upon the *Retina* (which is an *Expansion* of the *Optick Nerve*) in such a manner, as shall make the *Spirits* flow up to the *Brain*, with that regulated *Motion*, which is Establish'd to cause the *Sensation of Seeing*. So the different *Structures* of the *Tongue* and *Ear* serve to qualify and modulate the impressions made upon those organs in such a manner,

manner, as may produce the distinct Sensations of *Tasting* and *Hearing*. Again, take a Feather and move it gently over your Lips, it will cause a pleasing Sensation; draw it harder, and it will cause a very uneasy Pain: which shews, that besides the various Structure of different Organs, which causes the differences in Perceptions which we call the *Five Senses*; the degree also of Motion communicated to the Spirits, creates another difference no less distinguishable, which makes the Sensation pleasing, or troublesome. The *Grumbling of the Guts*, the *Belching*, and sometimes *Vomiting* of sower, sharp, and the like Humours, will be no hard matter to explain, after having shew'd that Crudities are the cause of this Distemper. For we know that what Salts soever predominate in these Indigestions, they contain other Salts also, which being of a different Nature, do after some digestion ferment with them; but by reason that fix'd Acids predominate here, the Fermentation cannot divide

*Grumbling
of the
Guts.*

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vide and attenuate the Sulphurous parts of the Blood so much as it is the nature of Volatil Acids, and Alkalies to do ; but cause a slow gentle Fermentation, or rather an Expansion, or swelling of the Sulphurs without division ; such as we see in Dough, or a piece of Sea-coal on the fire, before it flames. For the Salts not having force enough to divide and attenuate the Sulphurs, distend and swell them into a sort of Air capable of Rarefaction and Condensation, like common Air ; which partly by its own Elasticity, and partly by the Contractions of the Diaphragm and Muscles of the Lower Belly, is forc'd both upwards and downwards. When it comes upwards, we call it Belching ; and 'tis sower, sharp, &c. according to the nature of the Indigestions : that which goes downwards, enters by the Pylorus into the Guts, whose cavity being narrower than that of the Stomach, is distended and stretch'd by these Winds ; thence a Motion is imparted to the Nervous Membrane of the Guts ; from whence

Of Vapours; or,

whence the Spirits flow by little Nerves of Communication, into the muscular Fibres, which constitute the third Membrane of the Guts, by whose contractions these Winds are press'd on a sudden from one place to another, and cause a sound not unlike to that which Water stopp'd up in a Vessel will make when you shake it; and this Sound or Noise is what we call the *Grumbling of the Guts*.

As for the *Kecking* and *Vomiting*, they are both produc'd by the same cause, only that in *Kecking*, it acts with less violence. Now the *Vomiting* is caused thus. The grosser Salts of the Crudities prick and corrode the Nerves of the Stomach, whereby the Spirits contain'd in them are forc'd to undulate with a violent motion up to the Brain, and there either by the *Proximity of their Origin*, or by the *Angles of Incidence and Reflection* down into the Nerves belonging to the Diaphragm, and the Muscles of the lower Belly; both which contracting themselves at the same time, squeeze the Stomach

The Mechanism of Vomiting.

mach which lies between them into a small compass, and so forcibly eject what was contain'd in it. And tho' some part of these matters goes by the *Pylorus* downwards, yet far the greater share comes upwards; because when the Diaphragm is in contraction, it forces down the Liver, and makes it press upon the *Pylorus* or lower Orifice of the Stomach; so that little or nothing can get out that way, but almost all is discharg'd upwards by the superior Orifice; the violent contraction of the Diaphragm opening that passage wider than it is at other times.

Perchance this Explanation will seem something extraordinary to the generality of Physicians, who imagine the cause of Vomiting to be nothing but an *Anteperistaltick* Motion of the Stomach; but that they may be convinc'd in this matter, let us examine what happens in Vomiting, and thence try to prove its Cause Analitically.

In the first place, it is matter of fact, that in *Vomiting* we cast up by the Mouth what was contain'd in
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Of Vapours ; or,

the Stomach. These matters cannot be cast forth, but by the Action of some of those parts which surround the Stomach, and squeeze it ; or because the cavity of the Stomach is diminish'd by the contraction of its Membranes ; and however it be, still the superior Orifice must give an easier passage than the Inferior. That it is not the contraction of the Fibres of the Stomach, you will be convinc'd by the following Experience, first made by that incomparable Anatomist, and most Celebrated Physician, Doctor Chiras, Professor of Physick in the University of Montpellier. Give to a Dog *Sublimatum Corrosivum*, soon after the taking it, you will see him make several efforts to Vomit ; and to be the better assur'd that it is not the Stomach that contracts it self by an *Anteperistaltick Motion*, so to expel what is contain'd in it, make an Incision on the *Whiteline*, by which you will plainly see, that the Stomach suffers no contraction at all, but that the Muscles of the lower Belly and Diaphragm do
doth

both contract themselves most violently at the same time; then sew up the Incision, leaving only a little hole to observe the Ventricle through, afterwards set the Dog upon his Legs, immediately he will strain to vomit, and you may observe violent Contractions of the Diaphragm, and Muscles of the lower Belly both together; upon which what was contain'd in his Stomach is ejected: when at the same time keeping your finger upon the Ventricle, through the hole that was left in the *White-line*, you will not perceive the least Contraction in it, but only feel your Finger press'd on both sides by the Contraction of the Muscles of the *Abdomen*. Hence I conclude it is not the *Contraction of the Stomach*, nor its *Antiperistaltick Motion* which causes the Vomiting: if not that, then it is some of the adjacent Parts which environ the Ventricle; viz. the *Liver*, *Lights*, *Guts*, *Diaphragm*, or *Muscles of the lower Belly*. The *Liver* and *Lights* have no motion of their own, therefore cannot communicate

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any

any to the Stomach. The *Guts* have no other, but their *Peristaltick* and *Antiperistaltick* Motion. The *Peristaltick* Motion would carry these Matters downwards ; and it has been already prov'd there is no *Antiperistaltick* Motion in the Vomiting. It is not the *Muscles of the lower Belly*, nor the *Diaphragm* singly, because when they move successively one after another, let their Contraction be never so violent, it does not cause a Vomiting ; the Ventricle always taking up the place of that Muscle which yields. From whence I conclude, that it is caused by the *Muscles of the lower Belly* and *Diaphragm* contracting themselves both together ; whereby they press the Stomach between them, and so force out what was contain'd in it. This is matter of fact, and undeniable to any man, who will take the pains to make the experiment above-mention'd ; which I have seen perform'd four or five times by the Inventor of it Dr. *Chirac*, and have try'd it my self, upon above twenty Dogs ; and constantly found what

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I here set down. But why do these Muscles, which are *Antagonists*, contract themselves both at a time? It must necessarily be, because the Spirits flow into both of them at once in greater quantity than usually; this change cannot arise unless something new happens to the Body; we observe nothing here but taking of *Sublimatum Corrosivum*, the effect of which is an Irritation of the Stomach; therefore, it is from this Irritation that the Spirits flow into these two *Antagonist Muscles* at once. To be fully convinc'd of this, consider, it is matter of fact, that upon taking *Sublimatum Corrosivum* there is felt an Irritation in the Stomach; now first I know no *Irritation* can be felt in the Stomach, or elsewhere, unless the Spirits flow from the part irritated up to the Brain. Secondly, that no Muscles can contract themselves with a superior Force to their *Antagonists*, or with more violence than usual, but by a greater influx of the Spirits into them; therefore I am certain, that at one and

Of Vapours; or,

the same time, there is made a *Reflux* of the Spirits from the Stomach to the Brain, and a greater *Influx* than usual of them from the Brain to the Muscles of the lower Belly, and Diaphragm. Thirdly, I know it is the *Irritation* felt in the Stomach which causes the *Reflux*, and that this *Influx* greater than usual could not happen but by a Motion communicated to the Spirits by some other Body; nothing has happen'd which could impart any Motion to them, but the *Reflux* caused by the *Irritation* of the Stomach; this *Reflux* terminates it self in the same place, (*viz.* the *Corpus Callosum* or *Emporium* of the Brain) from whence the *Influx* begins; therefore I reasonably conclude it is from thence it proceeds. Now this may happen, either because the *Nerves*, which belong to the Muscles of the lower Belly and Diaphragm, have their Origins in the Brain close to those of the *Stomachick Nerves*, and so the Spirits, which flow out of these latter Nerves, enter immediately into the

the others ; or because the Nerves of these two Muscles answer to the *Angles of Incidence and Reflection* made in the *Corpus Callosum* by the Spirits which flow from the Stomach, whence they are deriv'd into them. And this latter *Hypothesis* is what seems to me most reasonable, because the communication of the Nerves, from the *Proximity of their Origin* in the Brain, is nothing near so mechanical, and if thoroughly examin'd into will never, in my Judgment, be found answerable to the effects produc'd. For if we suppose, as we must do, that the Origins of the Nerves lye pretty near to a level one with another ; certainly as the Spirits forc'd thro' a Nerve up to the Brain, have their determination in a streight line, none or but a very inconsiderable part of the motion will be communicated latterally, and consequently but very few Spirits push'd down that or those Nerves which have their Origin near it : whereas 'tis undeniable that a very great Influx of them is requir'd to cause these vi-

olent contractions. Moreover I find by repeated experiments, that there is a certain determinate degree of irritation requir'd to cause the action of *Vomiting* ; for give the same thing, viz. *Sublimatum Corrosivum*, in a small quantity to a Dog, it shall not make him vomit ; give it in a larger Dose, it will make him vomit ; and if you augment the Dose which made him vomit to a far greater quantity, it shall not produce that effect in him : and this I conceive does so happen, because the motion imparted to the Spirits by a small irritation, which does not make him vomit, is not strong enough to make the requisite *Angles of Incidence and Reflection* ; whereas that which does make him vomit, has force sufficient to continue the Spirits in a seperate unmix'd Stream thro' the *Corpus Callosum*, and make this *angle of Incidence and Reflection*. And the greater quantity, which again does not make him vomit, gives the Spirits so violent a motion that they are determin'd to far different *Angles* from those which the
 midling

midling irritation caus'd, whereby the Spirits were protruded into the Nerves of the Diaphragm and of the Muscles of the lower Belly. I know very well, the violence of the motion would make no alteration in the Angles of *Incidence and Reflection*, if the Body in motion hit against any thing that is hard, and that then it would take the same direction, but with greater violence, and go farther; but the Fibres of the Brain, being of a soft supple texture, must yield to the violent motion of the Spirits, by which being stretch'd beyond their natural *Tonus*, or Extent, the Spirits that flow back from them are either reflected in another Angle from that which the midling irritation causes, or else move in a confus'd manner, and irregularly disturb the whole *Emporium*. Whereas in the *Hypothesis* establishing the influx of the Spirits from one Nerve into another, by the *Proximity of their Origins*, the more violent motion would determin them into the same Nerves as the Midling one did, but in greater

E 4 quantity,

quantity, and with more rapidity ; and consequently cause a contraction in the same Muscles only ; tho' a more violent one : which does not happen.

This Hypothesis of the *Angles of Incidence and Reflection* made by the Spirits in the Brain, being new, has been much objected against by several Physicians, as a thing to them inconceivable : wherefore I am put upon a necessity of demonstrating its reasonableness, and explaining it more at large than I had thought requisite for the brevity of this Treatise. To do it clearly, I must first give you some account of the Structure of the Brain it self.

The Exterior, or *Cortical* part of the Brain is an assemblage of an infinity of little Glands ; which is so undeniable a truth, that if you boil the Brain in Oil, you may see these Glands with a Microscope : every one of these Glands has its excretory vessel annex'd to it, which excretory vessels continuing themselves down to the *Corpus Callosum*, form what we call the *Substantia Medullaris* :

laris: from the *Corpus Callosum* an infinity of little Nerves take their Origin, and, continuing themselves very perceptible to the Eye, form the *Medulla Spinalis*, and all the other Nerves which are distributed to the various parts of the Body. So far is the discovery of *Malpighius*, and so plainly demonstrated by him, it needs no farther proofs. Now the Blood being carry'd by the *Carotide* and *vertebral Arteries* up to these Glands which compose the *Cortical Substance* of the Brain, the most subtile and attenuated parts of it are filtrated thro' these Glands as thro' a Sieve; and these subtile parts of the Blood thus seperated thro' the pores of the *Cortical Glands* of the Brain, are what we call the *Animal Spirits*, or barely *Spirits* in common acceptation: from thence by the contraction of the *Dura* and *Pia Mater*, by the pulsation of the Arteries, and by the protrusion of succeeding Spirits, they are forc'd down the excretory channels of these Nerves (which form the *Substantia Medullaris*) into the *Corpus Callo-*

Callosum, which is the Receptacle or publick *Emporium* of the Spirits, wherein they flow at large, and are contain'd for the Exercise of *Memory*, *Fancy*, *Reason*, and all the *Animal Faculties*. There are also an infinity of Nerves which take a new Origin from the *Corpus Callosum*, and are thence distributed into all the body; thro' these Nerves the *Spirits* are continually protruded into all the parts, to serve for the muscular motions, and other uses that have, or shall be assign'd elsewhere; and when by the contact, or motion imparted from an external body, the extremity of a *Nerve* is irritated in any part; then the *Spirits* flow back thro' the channel of this Nerve up to the *Corpus Callosum* or *Emporium*, and there cause a *Sensation* or *Perception* of that Body. Note that whenever I say the *Spirits* flow from any part up to the Brain, I would not be so understood as to have the Reader imagin, that precisely the individual particles of the *Spirits* first put in motion, flow (as they might in an empty channel)

nel) from thence to the part where the motion ends; but that they communicate the motion to the next adjoining particles, those to the succeeding, and so on 'till 'tis imparted to those at the farther end of the channel, or *Nerve*: which tho' it might be more properly express'd by the word *Undulate*, yet as all Authors make use of the words *Flow*, *Flux*, and *Reflux*, in the like occasions, I thought fit to do so too; but desire once for all, whenever I say that the *Spirits*, *Blood*, or any other *Humours* in the Body flow from one part to another, to be understood that they flow with an *undulating motion*

This being laid down, I proceed to explain the Mechanism of the *Angles of Incidence and Reflection* in the *Spirits*. But first I take it for granted, no one will dispute, but that liquid Bodies which are pent up in a channel, and flow with rapidity, may continue on their distinct sepearte course for some way, thro' a far greater mass of less agitated fluids; as we see Rivers do for
some

some Miles into great Lakes. Secondly, I am convinc'd every Body will allow, that if a Liquid thus running with rapidity out of a Channel into a greater Surface of Fluids, should at its enterance, or whilst its force is entire, hit in an oblique line against any solid Body, then it would be reflected, and continue its course in an *Angle of Reflection* answerable to the opposition made by the solid Body ; as we see the *Rays of the Sun* reflect themselves from a Glass, or polish'd Steel. These being premis'd, I say the *Irritation* of *Sublimatum Corrosivum* on the Nerves of the Stomach, being much stronger than the protrusive force of the Spirits from the *Emporium* downwards, compels them to flow back in a rapid Motion from the Extremities of the Nerves which are in the Stomach, up to their Origins which are in the *Emporium* or *Corpus Callosum* ; and that by their rapidity they continue unmixt in a distinct separate Course or Stream, thro' the Spirits which fill the *Corpus Callosum* till they hit
 against

against some Fibre of it; whereby they are determin'd to flow back in an *Angle of Reflection* from that part into those Nerves which are answerable to it: as I here suppose, not without reason (from the Effects) that the *Nerves* of the *Diaphragm*, and of the *Muscles of the Lower Belly* are.

The Objections made against this *Hypothesis*, are,

First, that every *Nerve* continues it self distinct from its *Cortical Gland*, down to the part to which it belongs: and that 'tis not possible to suppose any *Angle of Reflection* in the *Channel* of the *Nerve* it self, much less from its *Gland* to another *Gland* with which it has no communication. I grant that if the assertion of these Physicians were true, the consequences would be undeniable: but I deny that the *Nerves* continue themselves distinct from each *Cortical Gland* down to the part: and to supersede many substantial reasons, I prove it by a well-known matter of fact; which I have often try'd upon Dogs, and
has

has been practis'd in some Cafes upon feveral men : which is that when you have cut off a great part of thefe *Glands*, or *Cortical* fubftance of the Brain ; no *Palfy*, *Want of motion*, or *defect in Sensation* fhall enfue : which would inevitably happen, if the Nerves continu'd themfelves diftinct from each Gland down to the part.

Secondly, they object that making the *Corpus Callofum* a publick *Emporium*, or Receptacle wherein the Spirits are contain'd, and thence flow into other parts as requifite, is a new fiction of my own without any reasonable grounds or Authority to affert it. But herein they are under a miftake, for if they will read *Willis* they'll find that in *Anatom. Cereb. pag. 35.* he afcribes the felf fame ufe to the *Corpus Callofum* that I do. And the reasonablenefs of this Affertion, I prove from the Structure of feveral other parts of the Body of a fimular nature to the Brain : for wherever we find a numerous quantity of Glands involv'd in one common Membrane, by the diffection

dissection of it we constantly observe, that the excretory Vessels of these Glands terminate in a *Basin* or *Receptacle*, wherein the Recrement or Excrement they separate is deposited; and that other little Vessels take a new origin from that *Receptacle* to convey the Humour elsewhere. So the *Chyle* filtrated thro' the Glands of the *Mesentary* is deposited by their excretory Vessels into the *Receptacle* of *Pecquetus*, and thence by new Vessels conducted into the *Ramus Thoracicus*. The same is to be said of the *Glandule Lumbares, Inguinales*, and many others. Nay even the Urine separated by the Glands of the Kidneys flows by their excretory Vessels into the *Pelvis*, tho' it be an excrement of no farther use, but design'd to be ejected from thence out of the Body. With how much more reason may we suppose *Nature* has not chang'd her order, nor neglected so convenient a Mechanism in the Brain, where 'tis of far the greatest use, and necessary for the mechanical Operation of all the *Animal*

mal Functions? For if there were not this publick *Emporium* or *Receptacle* of the Spirits in the Brain, it would be impossible to account mechanically for the *Fancy*, *Memory*, *Reason*, and several other Operations of the Mind, of which I shall discourse more at large in a following Treatise. Now whether precisely the *Corpus Callosum*, be this common *Receptacle*, or any other part, imports not, as to the question in debate: provided you agree there is such a *Receptacle* any where in the Brain, this *Hypothesis* of the *Angles of Incidence* and *Reflection* made by the Spirits therein, will subsist.

But to satisfy your self both that there is such a *Receptacle*, and that precisely the *Corpus Callosum* is that *Receptacle*; you need but to look back into the Structure of the Brain; where you will find an infinity of little distinct Glands, which form its exterior part; from thence you may trace innumerable excretory Vessels down to the *Corpus Callosum*, where they terminate. And
as

Hysterick Fits.

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as in all other such like *Glands*, the place where these Excretory Vessels terminate is the common *Receptacle* or *Basin* wherein the Liquor filtrated by the Glands is receiv'd; have we not all the reason in the world to conclude, that as *Nature* has form'd this Gland in every part else entirely like to the others, it has also done it in this part too; and made that the common *Receptacle* where the Excretory Vessels end? Now if any one will contend there is no such Cavity in the Brain because not visible to the Eye; let him consider how extreamly difficult and almost impossible it is to discover the *Receptacle of Pecquetus* at any time but when it is distended with *Chyle*, tho' it be a Cavity of two fingers breadth, made to contain a gross unctuous liquor compos'd of particles infinitely less attenuated and subtile than the Spirits are.

Thirdly, 'tis objected, that the Spirits flowing thro' the *Corpus Callosum* in a streight Line, will enter into the Orifices of the oppo-

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site Nerves, which we may suppose here, to be those of the *Diaphragm* and *Muscles of the Lower Belly* : which is far more easy to conceive, than the Mechanism of their Angles of Incidence and Reflection. How plausible soever this Objection may appear, 'tis easily refuted ; first because the opposite Nerves which must be in the superior part of the *Corpus Callosum* are only the excretory vessels of the Glands, and consequently have no communication with any Muscles. Secondly, because the *Corpus Callosum* is not one entire hollow, but a spongy Cavity, and consequently its *Fibres* and *Striae* must hinder any Reflux of the Spirits from being carry'd quite across it. Thirdly, because in this supposition the extraordinary violence of the Irritation would not hinder the Action of Vomiting, as it appears from the above-mention'd experiment it does : and those arguments are always the best grounded that are deduc'd from experience and matter of fact.

If any one thinks with *Willis* that these *Phænomena's* are better explicated by the Communication of the Nerves in their *Plexus's*. I must inform them that by putting any of these *Plexus's* into a Bason of water, and stirring them about for a considerable time, they may disentangle them so, as to be convinc'd they have no communication one with another.

I have been something prolix in the proof of this *Hypothesis*, because it has met with violent Opposers; and that from this mechanism I shall deduce the Explication of several other *Phænomena's*; having hereby establish'd the communication of the Nerves one with another, from the *Angles of Incidence* and *Reflection* made by the Spirits in the Brain.

That Women in this Distemper affirm they often feel a *Hard ball* press'd against the outside of their Throats; sometimes as it were a *Stick thrust down'their Throats* which stretches and distends them violently; at other times a Sensation like

F 2 that

that of a Rope pull'd strait about their Necks almost strangling them; and lastly a Rising of something up their Throats: are not vain imaginations and groundless fancies, occasion'd by the disturbance of the Spirits in the Brain, as some Physicians are pleas'd to say, [either out of ignorance of the Structure, Springs, and motions of the Body; or to give an easy solution for several difficult *Phænomena's* in one word] but are real Sensations actually felt by the Patient, and mechanically produc'd by the Springs and motions of different parts of the Body, and humours contain'd therein; as by the following Explications will appear.

Whence
the Sensa-
tion of a
Hard ball
press'd a-
gainst the
Throat.
First then the Sensation of a
Hard ball press'd against the out-
side of their Throats is occasion'd
thus. In the superior part of the
Throat a Cartilage is situated exte-
rior to the Gullet and Wind-pipe,
from its figure representing a Shield,
call'd *Cartilago Scutiformis* or *Thy-
roides*; this makes an eminence or
protuberance plain to be felt and
seen in the Neck, which several
Ana-

Anatomists call *Pomum Adami*, or the *Apple of Adam*, from a vulgar superstitious notion, that when *Adam* eat the forbidden Apple it stuck in his Throat, and that *God* to perpetuate the memory of this his offence plac'd the like protuberance in the throats of all his posterity ; which is not quite so apparent in Women, because, say they, the Crime of *Eve* was less ; but a better reason is, because *Woman* being made for Beauty and Ornament, and to be, as the Scripture terms it, the Glory of mankind, such a visible protuberance in the Neck would have been unbecoming : outward of this Cartilage are situated a pair of muscles call'd *Sterno-hyoidei*, these take their Origin from the Sternum, run all along upon the outside of the Wind-pipe and Scutiform Cartilage, and insert themselves into the Basis of the *Os Hyoides* at the root of the Tongue ; and when [as it often happens in this distemper, not only to these, but also to many other muscles] they are violently contracted, it

F 3

will

will mechanically, and inevitably arrive that this Cartilage is strongly press'd against the Throat ; which must produce just the same Sensation as if any other hard Body were press'd against it. The reason why the Patients refer it to some outward Body, and not to this Cartilage, is because they have no Idea of the Cartilage it self, nor of other inward parts of the Body. Now to convince you that there is a strong contraction or convulsion of these muscles at this time ; do but make your observation whenever this accident arrives, and you will constantly find that the root of the Tongue is violently pull'd down towards the Sternum ; which every Anatomist will agree with me, cannot be occasion'd but by the extraordinary contraction of the *Sterno-hyoidien muscles*.

Whence
they fancy
a Stick
thrust
down their
Throats.

Secondly, The sensation like to that of a Stick thrust down the Throat which distends it violently, is occasion'd either by a great rarefaction of the Crudities rising up into the Throat, and stopp'd in the Gullet :

Gullet : or by extraordinary contractions of the *musculi expansores Asperæ Arteriæ*. For if at the same time that the Crudities and Indigestions rarefy'd into a kind of air, rise from the Stomach up into the Throat, the Annular muscle which surrounds the top of the Gullet like a Sphincter, should from the irritation of these Indigestions, or by any other cause contract it self so as to stop their farther passage, 'tis manifest their rarefaction would stretch and distend its cavity on all sides in a violent manner, both against the Vertebres of the Neck, and the Cartilages of the Wind-pipe ; which the Patient can compare to nothing more properly, than to a Stick thrust into the Throat, and producing the same effect. Or, if [as there are muscles which serve to lessen the Circumference of the Wind-pipe, and others to dilate its diameter] it should happen that the dilating muscles do contract themselves with an extraordinary violent force, and remain in a convulsion ; 'tis plain they must stretch the Wind-pipe out-

wards in the same manner as any external body thrust into it would do, and produce the same Sensation.

Whence
the sensa-
tion of
Strangling

Thirdly, The perception as it were of a *Rope strangling them*, is produc'd by a violent Contraction or Convulsion of those muscles which serve to diminish the cavity of the Wind-pipe in its Diameter. For tho' all Philosophers and Anatomists have constantly assign'd the contraction of the *Larynx* for the cause of this Symptom, and I myself was of the same opinion 'till of late; yet by a very exact enquiry from several Patients who were troubl'd with this Accident, I find that the *Sentiment of Strangulation* is felt much lower down in the Neck than is the Situation of the *Larynx*: and consequently it cannot be caus'd there, but must be in the Wind-pipe it self. Moreover if the Contraction or Convulsion of the *Larynx* could by stopping the breath produce this sensation, Patients in a great many other distempers, nay even people in good health would

would be afflicted with it upon every sudden Stoppage of the Breath; whereas this Symptom very seldom happens. And tho' in a sudden Stoppage of the Breath by the violent contraction or convulsion of the *Larynx* we are almost choak'd; yet the sensation, if nicely observ'd, is very different from that of *Strangling*.

Fourthly, The *Rising of something up their Throats* [which tho' it does not produce the sensation of a Stick thrust down, and violently stretching it, as above-mention'd, is yet ready to choak them] is occasion'd by Crudities of a harsh and rough nature. For as those *Fumes* rise from the Stomach, they cause a sensible Irritation all up the *Gullet*, and part of them being carry'd into the Lungs together with the Air that is drawn in, do as they pass over the *Larynx* irritate the *musculi Aritenoides*; whereupon they contract themselves, and force down the *Epiglottis*, which shuts up the *Glottis* so that no Air can enter; and

A Rising in the Throat by which they are almost choak'd.

and these *Fumes* coming up from the Stomach in great quantity cause continual Irritations, which make as it were one continu'd Contraction for a long while ; by which the Air being hinder'd from entering into the Lungs, the Patients are affected in the same manner, as when some external body presses upon their Breasts so as to hinder them from breathing. The final cause thereof is to hinder those *Fumes* from entering into the Lungs together with the Air, where they might create far greater disorders. For provident *Nature* has so artificially dispos'd all the parts of Man's Body, that every Motion tends to the preservation of the whole Machin ; so that when any noxious thing presents it self, then that part which is best able to hinder its pernicious effect, puts it self in a motion to that end. So when we perceive a stroke made at our *Head*, or any other part of us, immediately without any deliberate act of our Will, there is a natural promptness in the mechanical

cal Structure of our Body, that interposes the *Hand* and *Arm*, to keep off the Blow from the more necessary part. So again when any thing suddenly approaches too near the *Eye*, the Eye-lids contract and shut themselves as suddenly, even in despite of our *Will*: And since our *Senses* were given us for no other end, but to discern what is necessary or congruous to the preservation of our Body, as also to know, shun, and repel what is noxious to it; it follows that as soon as we perceive this *uneasy Heaviness* upon us, we use our utmost endeavours to remove it; which by *Struggling* we Struggling do in some manner effect; the frequent and violent contractions of the Muscles dividing and attenuating the Blood so as to make its circulation more free and easy: but the Soul finding the Body utterly unable to repel this Evil, and that it is beyond her power to conquer it, she sinks under her pain and anguish, and breaks out into *Crys* and *Groans*; thereby to Crys and Groans. signify to the assistants she wants
and

and implores their aid, not being able by all the troublesome agitation of the Lips and Tongue, to form one distinct word to demand it.

Now when these Crudities have so coagulated the blood as to hinder its attenuation into those subtil particles, which being separated by the *Cortical Glands* in the Brain are term'd *Spirits*, there is a Deficiency of them ; whereupon they run round in the *Emporium*, and cause a *Giddiness* or *Vertigo*. This you will not clearly understand, without considering how the *Sensation of a Thing's turning round is produc'd* ; which in my opinion, is rather a Judgment than a Sensation. For when a Bowl for example, turns round in your hand ; first it irritates one, then another, and so successively and almost without intermission, several distinct nervous Fibrils of your Hand and Fingers ; and by consequence, causes a successive uninterrupted reflux of the *Spirits* up those Nerves against so many different Fibres in the

the Brain ; and from thence it is you judge that the Bowl turns round. For if those different parts of the Bowl were apply'd one after another, to the same parts of your Hand and Fingers, with the self same degree of motion, only with this difference, that a distinguishable interval should intervene between every application ; it wou'd not produce the Sentiment or Judgment of the Bowl's turning round ; but several distinct Sensations of its different applications to many parts. Therefore the Sensation of a Thing's turning round, consists in the Judgment which the Soul makes upon the Perceptions caus'd by the continu'd successive motion of the Bowl upon different parts of the Hand. And since in the *Vertigo*, every thing seems to turn round, the cause thereof must first move one Fibril in the Brain, then another, and so successively produce a continu'd motion in many of them, to make the Soul judge all the objects she sees turn round. This happening here without any outward

outward cause, or real turning round of the objects; it is plain it must be produc'd by some inward cause. *Willis* says it is the *Heterogenious Particles* which fermenting with the Spirits in the Brain in an irregular disorderly manner, causes their circular motion. But if that were true, it wou'd follow, first that in all *Raving Fits*, (in which *Heterogenious Particles*, do undoubtedly mingle with the Spirits in the Brain) the *Vertigo* would happen. Secondly, that in all *Vertigo's* there would be a *Delirium* or *Raving*; which not being matter of fact, it is evident there must be some other cause. Which to find out, we must consider that in the *System of the Nerves* there is no *Hydraulick Engine* like the *Heart*, to push the Spirits by its contraction all over the body; but that as soon as they are separated by the *Cortical Glands* from the blood, the contraction of the *Pia* and *Dura Mater*, together with the Pulsation of the *Arteries* in the Brain, presses them into the *Emporium*,

How the
Motion of
the Spirits
is caus'd.

rium, where they remain 'till by the succeeding Spirits they are driven on (as one Nail drives another) into the origins of various Nerves: and when a new motion is communicated, by what cause soever to any part of these Spirits, they communicate it to their adjoining Particles, whence it is imparted to those before them, and so successively, 'till the motion is transmitted up to the Brain, where it imprints an *Idea* or *Sensation*: then according to the quantity of motion which remains, it either terminates in the *Emporium*, or forces the Spirits into those Nerves whose orifices lie in a *Line of Reflection* answerable to the *Angle of Incidence* made in the *Emporium*: whence contractions of various Muscles ensue. Now suppose by any cause whatsoever, the Spirits should not only, not be separated in a sufficient quantity to drive one another into the origin of the Nerves, but in so very small a quantity, as not to fill one half of the *Emporium*; it is plain that they being
subtil

subtil and volatil will not of themselves press downwards into the Nerves, but tend upwards according to the nature of all volatil bodies: but here the substance of the Brain hindering the continuation of their direct motion upwards, they are forc'd to continue it sideways; and so successively moving round, renew the *Ideas* in the same manner they were imprinted when we perceiv'd the objects turn round. And if at this time, we open our Eyes, all things we look at will seem to us to turn round, tho' in realty they do not; because the circular motion of the Spirits in the *Emporium* or *Corpus Callosum*, hurries along with it the Spirits which flow to the Brain, by the *Optick Nerves*, and consequently, instead of making an Impression in one particular place of the *Emporium*, makes them irritate many fibrils, with a successive, but continu'd motion; whence we judge that all things we see turn round.

This

Hysterick Fits.

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This mechanism how plausible
soever, will not satisfy the learned,
unless I can prove that at the same
time the *Vertigo* happens, there is a
Deficiency of Spirits, which I can
convince them of by several reasons.
For first, the Patients *fall down* in the
Vertigo, which argues a Deficiency
of Spirits in the erectory muscles of
the body. Secondly, a *Dimness*
comes over their Eyes, and they can-
not see; which argues a Deficiency
of them in the *Retina* and *Optick*
Nerves. Thirdly, it is often pre-
ceded by a *cold Sweat*, which argues
a Relaxation of the *Sphincters* of the
Miliary Glands, and consequently a
want of Spirits there. Fourthly,
immediately before the Fit, they of-
ten *vomit sharp, or sower humours*;
and it is the nature of such humours
to fix and coagulate the Blood, and
consequently to hinder the due se-
paration of the Spirits. Fifthly,
the *Pulse is weak and slow*; an evi-
dent sign of the difficulty the Blood
has to circulate, and that but little
of it coming from the right Venti-
cle of the Heart, through the Lungs,
G into

into the left Ventricle, it is pour'd into the *Aorta* but in small quantity, so as not to distend the Arteries as usually, which is, what we call *Weakness or Lowness of Pulse* : The *Pulse* is also *slow*, because the coagulation of the Blood hinders the *Fluidum motivum cordis* from separating it self in as great a quantity as usually ; hence it is seldomer supply'd to the *Fibræ motrices cordis*, and consequently there is a longer interval between every Pulsation : from whence I gather, the Blood flows but slowly up to the Brain ; and that being coagulated, but few Spirits are separated from it.

The only objection I know against this *Hypothesis* is, that the *Vertigo* often happens to drunken Men, and to those who are in violent Fevers ; whose blood is so far from being in any state of coagulation that on the contrary it is in a preternatural effervency ; and consequently, I cannot argue a want of Spirits there.

To this I answer, that the blood of these persons being in a most violent fervent, is forc'd in vast quantities

Hysterick Fits.

83

tities up to the Brain, where it makes an extraordinary distention of the blood-vessels, and consequently presses the *Cortical Glands* so that they cannot filtrate the Spirits; which is the same thing as if the Blood furnish'd none.

And tho' I have just now assign'd the causes of three or four Accidents, by which I gather'd there is a *Deficiency of Spirits* in the *Emporium* during the *Vertigo*: yet, since these are Accidents which frequently happen in *Hysterick Fits*, it will be expected I should dilate a little more upon them, and shew in what manner they are produc'd in this Distemper. First then a *Dimness* ^{*Dimness of Sight.*} comes over their *Eyes*; that is, they do not see so clearly as usually; because the *Optick Nerves* are not sufficiently stor'd with Spirits; therefore the *Impression* which the visible Object makes upon the *Retina*, cannot be carry'd in its full force along the *Optick Nerves* up to the *Emporium* of the Brain, because the continuation of the motion imparted is here and there interrupted, for want

of a sufficient quantity of Spirits in the Channel of the *Optick Nerves*; whence it is plain, they cannot have a distinct perception of the visible object. Another cause of this may be the *Waterishness* of the Spirits, caus'd by the coagulation of the Blood: for the Spirits being drown'd as it were in too great a quantity of Phlegm or Water, lose their energy and cannot impress the Idea's of Objects as usually. The *Weakness* and *Slowness* of the Pulse happen here exactly in the same manner as I have just now explain'd them.

*Closing of
the Eyes.*

The *Closing of the Eye-lids* is occasion'd by a Deficiency of Spirits which leaving all parts destitute of their requisite quantity, it follows that of those few Spirits which flow from the Brain into the muscles of the Eye-lids, the *Orbicular* which is far the larger will receive a greater quantity than its *Antagonist* the *Musculus Rectus* or *Aperiens* of the Eye-lid; and by consequence contract it self with a more prevalent force, so that the *Aperiens* cannot
open

open the Eye again. To make you conceive this more plainly, I will explain in two words the Mechanism of the alternative motion of the Eye-lids. *The Mechanism of the alternate Motion of the Eye-lids.* The *Under-lid* has little or no perceptible motion, but the *Upper* moves up and down without any voluntary act of our Will: the Muscle which shuts the Eye is Orbicular, and goes round all that appears of the Eye when it is open: The *Aperiens*, which serves to open the Eye-lid, is a strait muscle, which takes its origin from the bottom of the *Orbita*, and inserts it self in a streight line into the middle of the foremost part of the upper Eye-lid. Now the *Orbicular* Muscle cannot contract it self, without stretching and extending the *Aperiens* to a greater length than it had before; by which extention the cavities of its Nerves are diminish'd, and consequently render'd incapable of admitting so large a quantity of Spirits as at other times; But the contraction of the *Orbicular* ceasing, the *Aperiens* is no longer extended, and the orifices of its Nerves are open to admit

admit the Spirits ; wherefore they flow into them, and by their fermentation with the *copula explosiva* cause a contraction of this muscle, which together with its Spring and Elasticity, makes it prevail over the *Orbicular*, and pull it up. When its contraction is likewise ended, then the Spirits flow again into the *Orbicular*, and contract it as before ; it stretches the *Musculus Aperiens* anew ; which partly by its own elasticity, partly by the contraction caus'd by the Spirits which now flow abundantly into it, prevails over the *Orbicular* again, and draws it up : and in this manner they move continually in an alternate motion, 'till either a voluntary act of our Will, or a Deficiency of Spirits gives the *Orbicular* a superior force ; by which it is kept in a continu'd contraction, that is remains shut. When I say that a superior force of the *Orbicular Muscle* hinders the alternate motion of the Eye-lids, I do not mean, that the Spirits flow in greater quantity than usually into this muscle, and cause a more violent con-

contraction in it ; for in that case it is clear it would distend and stretch the *Aperiens* more than usually, which consequently by its spring and elasticity would draw up the *Orbicular* again ; but I mean, that when but a small quantity of Spirits flows into every muscle of the body, then the *Orbicular* as being a larger muscle, receives more than the *Aperiens*, whereby it contracts it self with a superior force to it, but yet not with violence enough to stretch and distend it as in the natural disposition ; wherefore it looses that spring and elasticity which serv'd to equal its force to that of its *Antagonist* the *Orbicular*.

Their *turning pale, their fainting, and not being able to stand*, are all effects of the coagulation of the Blood, which obstructing its due circulation, especially to the superior parts of the Body, hinders its flowing up to the Face and spreading it self in the Cheeks in as large a quantity as usually, whence they loose their florid colour : for 'tis from the Blood alone that all parts

Paleness.

of the body receive their *Redness* as well as their *Heat*; which is evident, since by syringing out the Blood, any part of Man's Body even the *Heart* or *Liver* may be made as white as one's Skin. The same Coagulation of the Blood hindering the due separation of the Spirits, they are not supply'd in a sufficient quantity to the muscles of the Body, upon which an universal *Feebleness*, or as I may call it *Relaxation*, seizes every part, and the Muscles are no longer able to support the Body; which by its own weight sinks to the ground, and there remains as dead; none of the Organs of the Senses being able to receive and transmit the Impressions for want of Spirits. Hence it is clear, that those who were altogether senseless during the Fit, can no ways remember what happen'd to them in it: *Remembrance being only the renewing of a Perception we formerly were affected with.* Now after some time, the blood by reiterated circulations and divisions from greater into lesser

ser vessels, pressing through strait windings and passages, attenuates it self in a great degree; whereupon the *Heterogeneous* Particles of the Blood and Crudities more easily meet, and ferment with each other, 'till at last the Blood attains its due liquidity, and the Crudities are chang'd into the nature of Blood; whereupon the *Fluidum motivum cordis*, separates its self as usually, and consequently the *Pulse* beats *Quick* and *Full*, as before the Fit; the parts regain their natural *Warmth*, and the Face its usual *Colour*; the Blood being now supply'd every where in its due proportion and qualities. They *perceive all Objects* because the Spirits are again separated in the Brain, and distributed to the Nerves, as in the natural disposition of the body. They *open their Eyes*, because the Spirits now flowing in their due quantity into the *Orbicular Muscle*, contract it so as to make it extend the *Musculus Aperiens* as usually; whereupon by its own elasticity and succeeding contraction, it pulls up
the

Sighing.

the *Orbicular*, and in this manner their alternate motion continues as has been just now explain'd at large. But whilst the Patients thus return to their natural state, it is observable that they fetch a great *Sigh*; which is occasion'd by the oppression, some stagnation of the blood yet remaining in the Lungs, causes there; whereby the Spirits are forc'd in a rapid motion from that part up to the Brain, and there produce a troublesome uneasy Sensation; thence by the *Angle of Reflection* they flow in greater quantity into the muscles which serve for the Inspiration, whose contraction is thereby render'd more violent, and lasts longer; and by consequence, a greater quantity of Air is admitted into the Lungs, which distending them so as to cause an uneasiness, the Air is again expell'd; which as it enter'd in greater quantity, must necessarily take up a longer time in coming forth: which *long Inspiration and Expiration* is term'd *Sighing*. Nature's design and end in this Mechanism is, to introduce as much more
Air

Air as possible into the Lungs ; which bringing along with it a greater quantity of *Nitre*, does thereby help to attenuate and divide the blood, which stagnating there would have occasion'd great disorders. For every involuntary motion of any part of the body indispos'd, is undoubtedly a mechanical effect of its springs and resorts, foreseen and contriv'd by its great Artificer for the removing of what might be prejudicial, and the preservation of the whole Machin.

Sometimes the Patient shall have her *Belly swell'd and stretch'd* like ^{Swelling of the Belly.} a Drum: And this is occasion'd by the extraordinary rarefaction of the indigestions and crudities contain'd in the Stomach and Guts ; which cause a more sensible pain in the *Hypochondrias*, than in any other part of the lower belly, ^{Pain in the Hypochondrias.} because besides the distention it makes there of the five pair of muscles which are call'd the muscles of the lower belly , it does also press the *recti abdominis*, the *Kidneys*, and the *Mesenterick plexus's*,
so

so as to cause a violent reflux of the Spirits from them up to the Brain; by which a painful sensation is produc'd in the Soul, and referr'd to that part. Sometimes these Indigestions rarefy themselves so on a sudden, that they stretch the tunicks of the Guts beyond their natural *Tonus* or extention, and thereby render them incapable of performing the contractions necessary for their *peristaltick* motion, which us'd to force these *Flatus* downwards; which consequently remain in the part of the Guts they had distended, and cause a Swelling or *Tumor* in that place. And tho' it be matter of fact, that a liquid body distending with violence and on a sudden any membranaceous cavity will obstruct its own passage; yet I am inclin'd to believe, the winds caus'd by the rarefaction of the crudities, form these Tumours and Distentions in those places where the Guts turn round; because the Angle of Inflection straitening their passage, and consequently it is easier for an obstruction

Swellings in the lower Belly, which the Ancients took to be the Wombs changing it self from place to place.

struction or stoppage to be form'd there. Again, the reduplications of the nervous and glandulous turnicks of the Guts make several Wrinkles or Valvules, which *Kerkingus* calls *Valvulae conniventes*; plac'd there by Nature, to detain the aliments 'till all the chyle has enter'd into the *Milky Veins*, whose orifices extuberate into the Guts; now these *Valvules* contribute much to the hindering of the free course of the Winds downwards, and are themselves a sufficient impediment, to cause this Stoppage. These *Tumors* change from place to place; because when they have remain'd for some time in one place, the heat of the bowels and of the circumjacent parts, rarefies the Winds so as to make them lose much of their elasticity, and then the contraction of the Fibres of the Guts overpowers their force, which together with the succeeding Winds pressing on, drives them downwards 'till another Valvule stops their passage; and there forms a new *Tumor*: and so they are driven on successively from

from one part to another. Wherefore the Patients comparing what they feel within their bodies (of whose inward parts they have no clear idea) to what they see in other mechanicks, fancy some solid thing moves up and down in their bellies ; because they perceive a distention in one part, than some feeling of a motion from that part to another ; where again they feel a new distention ; and so successively perceive several *Motions* and *Distentions* ; which are sometimes lower, sometimes higher in the belly, according as they advance forward in the Guts ; which do not go in one strait line down to the *Anus*, but fold themselves in several rounds or windings, so that an inferior part of them is in many places nearer to the Head than the superior. The Winds moving in this manner down the Guts, is what the Ancients call'd *Globus*, which they ignorantly fancy'd to be the Womb's changing it self from place to place ; whereas the ligaments which tye it down render

der that impossible : besides that Men are afflicted with this Symptom as well as Women.

The *Cold* they feel all *up their Backs*, is caus'd by the Crudities and Indigestions, which having receiv'd a sufficient division to enter by the Milky Veins into the *Ductus Thoracicus* ; being sower and abounding with fix'd Acids, irritate the Nerves of those parts with such a motion as causes a feeling of *Cold* all the way they go up the Back to the left *Subclavian* Vein ; where being pour'd into the Blood, they interweave themselves with its sulphurous parts, and so thicken and coagulate the whole mass ; whereby its watery and ferous particles are squeez'd forth, which abounding with fix'd Acids from the Crudities, cause *a feeling of Cold* all over the body. And it is accompany'd with a *Lowness of the Pulse*, because the coagulation of the blood hinders it from being furnish'd to the Arteries in its usual quantity ; whence it hardly distends them enough to make their Beating sensible

*The Cold
up the
back.*

Head-ach. fible to us. The *Head akes* because the thick coagulated blood stagnating in the muscles of the Head, causes a Distention there; whence a violent Reflux of the Spirits is made to the Brain, and that uneasy Sensation call'd *Head-ach*, produc'd.

Palpitation of the Heart.

The *Palpitation of the Heart* is caus'd by the thick coagulated blood, which obstructing its own passage through the Lungs, hinders that which is continually forc'd into them from the right Ventricle of the Heart from continuing its free course as usually, and it not being possible for the Arteries to receive more blood than their cavities can contain, nor for the blood to proceed forward by reason of the Stoppage; it rebounds back against the Heart, and causes (besides that of its contraction) another motion in it, which forces the Heart against the Ribs, and is what we call the *Palpitation of the Heart*. And to be convinc'd that this *Palpitation* is not caus'd as most Physicians imagine, by the Convulsion of the Heart;

Heart; take a live Dog and tye his Pulmonary Artery at a small distance from the Heart, you shall thereby cause its *Palpitation*. Which manifestly evinces the truth of the Mechanism I here assert. Sometimes a violent *Syncope*, that is a *Syncope*. Cessation of Breathing, ensues; to wit, when the Blood is coagulated to such a degree as to hinder for a while the separation of the *Fluidum motivum cordis* from it; which (as the most Learned Doctor *Chirac* proves in his Treatise *de Motu Cordis*) causes the Contraction of the Heart without the concurrence of the Spirits from the Brain; which is requir'd to the contraction of all other muscles.

Those who after all, or some of these Accidents, return to their natural Heat, without falling into any hot Fit, have a *thick gross Texture of Blood*, whose sulphureous particles are very hard to be divided, and hang toughly together; so that the many circulations, and various miscellany of the *Heterogeneous Salts of the Blood and Crudities*,
H
can

can only have energy enough to attenuate it into its ordinary division, not to exalt it into a violent and preternatural fermentation. Sometimes in this State, which begins with a violent Cold, and ends with a natural Heat only, all these Accidents will happen ; sometimes the greater part ; and sometimes but very few ; in one, they are more, in another less violent ; which are all to be explain'd by the greater or lesser quantity, or fixedness of the Crudities and Indigestions.

In others, *viz.* those whose Constitution of Blood, tho' gross and thick, is not quite so difficult to ferment as the former, after many of these Accidents when the Cold is ended there succeeds a violent Heat, which casts them into several of the former Accidents, as *Palpitation of the Heart, Head-akes, Giddiness, Difficulty in Breathing, &c.* and into some new ones, as *Flushing of the Face, violent Beating of the Arteries and Muscles, Convulsions, Foaming at the Mouth, Raving and a Tingling or Pricking Sensation in the Thighs,* which

which were paralytick during the Cold.

In the first place, the *violent Heat* ^{*Violent Heat*} is produc'd by the concurrence of the Salts of the Blood and Crudities, which after various circulations and divisions from greater into lesser Vessels, are at last attenuated so, as to meet and ferment with each other, and divide the sulphureous parts of the Blood; whereby more Salts are still let loose, which fermenting together, put the whole Mass of the Blood into a violent ebullition, which causes a *Heat* throughout all the body. Now it is evident that in this case, the *Palpitation of the Heart* ^{*Palpitation of the Heart*} will happen, and that in a more violent manner, than it did in the Cold: because the Blood, being in a great ferment and rarefaction, is forc'd in vast quantities from the right Ventricle of the Heart, into the Lungs, where its free circulation is hinder'd, partly by the coagulated Blood, of which some still remains in the Lungs, but chiefly by its sudden rarefaction; wherefore it returns with violence

*Difficulty
of Brea-
thing.*

Head-ach.

back upon the Heart, and forces it against the Ribs. Hence also a *Difficulty of Breathing* inevitably ensues; because the Blood not having its free passage thro' the Lungs, its extraordinary Rarefaction distends the Blood-vessels to a great degree, and consequently presses the airy Vesicles of the Lungs so on all sides, that they can admit but a small quantity of Air. As for the *Head-ach*, it is produc'd by the violent distention which the Blood makes as it circulates thro' the fleshy and membranous parts of the Head; whereupon the Spirits are forc'd with a rapid motion up to the Brain, and cause this uneasy painful Sensation; more perceptible in the Head than elsewhere, because the Blood being attenuated and volatiz'd, mounts in a greater quantity than usually up thither; whereupon there ensues a greater distention of the Blood-vessels and fleshy parts thro' which it passes. This distention imparts a violent motion to the *Pericranium*, which is a Nervous membrane of exquisite sense; and the

the Skull which is next to it, being a solid hard body, receives little of its motion; wherefore it is almost all imparted with violence by the Spirits up to the Brain: whereas in other parts of the body, which are more fleshy, a great part of the motion is communicated to the slack yielding Fibres of the Muscles; and what remains gives but a moderate motion to the Spirits; at least not so violent a one as where little or none of the motion can be imparted elsewhere.

The *Giddiness* is produc'd here in *Giddiness*. the same manner as in Drunken people; that is, the extraordinary fermentation of the blood forces it in greater quantity up to the Brain: where on a sudden it distends the Blood-vessels in an unusual manner, and consequently presses the *Cortical Glands* so close together that they have not room to admit in and separate the Spirits; which is the same thing as if the Blood furnish'd none. Hence there is a Deficiency of them, they turn circularly in the Brain, and make us imagine all things turn

H 3 round,

Drowfi-
ness.

round. And if this Compression of the *Cortical Glands* be still greater, it will totally hinder all Influx and Reflux of the Spirits, and so produce a *Drowfiness* or sort of *Lethargy*, by causing a Cessation of all Motions and Perceptions.

Flushing.

The same violent Fermentation and Boiling of the Blood causing it to mount in vast quantities up to the Face and Cheeks, their Muscles are fill'd with it, and their Skins are rarefy'd by its great Heat, so as to give a free enterance to the Luminous Particles of the Air; which being reflected back from the Blood to our Eyes, produce in us the perception of its red colour. And tho' this fermentation of the Blood alone causes the *Flushing* in many Distempers, yet in this there are two other causes which sometimes concur to the producing of it. The first is the *violent contraction* which the *Scalene* or *Triangular Muscle* of the Neck suffers in all difficulties of breathing; whereby it so presses the Vein and Artery (which have a passage thro' it) that the Blood cannot freely

freely return from the Head, but is detain'd there in great quantity, and fills the Face and Cheeks. For this contraction of the *Scalene*, tho' it equally presses upon the Vein and the Artery, does not equally hinder the admission of the blood thro' the Artery, as it does its return by the Vein; because the protractive force of the blood in the Arteries occasion'd by the expulsive contractions of the Heart, is much stronger than its progressive motion in the Veins. The other cause is *the violent Contraction of the Diaphragm*, whereby the *Vena Cava*, which pierces thro', and is fasten'd to it, is pull'd down and stretch'd, so as to straiten its cavity to that degree, that the Blood which comes from the inferior parts cannot mount up to the Heart in its due quantity; therefore there is less admitted into the Arteries, which furnish the Blood to those inferior parts, and consequently more is forc'd into the upper parts of the Body, and into the Face.

The *Raving* is produc'd by a *Raving*,
mixture of *Heterogeneous* particles

Reason.

with the Spirits; which fermenting with them, make their motion violent and irregular in the *Emporium of the Brain*; where they do at once irritate a great many little Fibres, and thereby renew many confus'd incoherent Ideas of things past. For *Raving* being nothing but a *disorder of Reason*, and *Reason* consisting only in the *affirmative or negative Comparison which the Soul makes of two or more distinct Perceptions*: it follows, that if there be renew'd at once a great many incoherent Ideas, of which the Soul has no clear and distinct, but only confus'd, Perceptions, she cannot form a reasonable Judgment of them.

Contraction
of the
Muscles.

Moreover this Confusion of the Spirits causes great and irregular Influxes of them into several Muscles; whereupon they are put into violent contractions or convulsions. But to shew clearly how this irregular Influx of the Spirits causes *Convulsions*, it will be necessary first to explain in what manner the natural *Contraction of the Muscles*

Muscles is produc'd. It is as follows. Every Muscle is compos'd of a vast multitude of Fibres like threads, which are folded up altogether in one Skin or Membrane; every one of these little Fibres has a Vein, Artery, and Nerve, which belongs to it; moreover it has from space to space several little pores or cavities, which are of a long oval form, whilst the Muscle is slack. Now the Blood, as it circulates thro' the Muscle, continually depofes into these pores a Sulphureous Recrement abounding with Alkaline Salts; which meeting with the Spirits that flow by the Nerves into the same oval pores, the *Nitroaerial* particles of the Spirits ferment in a most violent manner with the Salts of this Sulphureous Recrement; and thereby distend the pores so as to make them round, from oval as they were before. And this happening to every Fibre of one Muscle at the same time, it is evident it will be contracted or shorten'd. The Analytical Proof ^{Convulsions} of this is set down at large in *Dr. ons.*

Chirac's

Chirac's Physiology. Now when the mixture of Heterogeneous particles with the Spirits causes their irregular motion and greater Influx into any particular Muscle, they ferment in a violent and irregular manner with the *Copula explosiva* of that Muscle, whereby it is contracted with a superior force to that of its Antagonist: when that Explosion or fermentation is ended, the attenuated particles of the Sulphurous Recrement together with the Spirits are evaporated, partly into the Blood, and partly into the Air, thro' the little insensible pores of the Body. And as by their irregular motion the Spirits flow continually in greater quantity into this or these Muscles; it is manifest they will cause violent, frequent, and almost continu'd Contractions in them: which is what we call *Convulsions*. Which when they happen to the *Tongue* and Muscles of the *lower Jaw*, press the *Salivary Glands* and Conduits, so as to squeeze forth into the Mouth a greater quantity of Spittle; which
being

*Foaming
at the
Mouth.*

being a Recrement of a viscus nature, the Air which continually enters in, or comes out of the Lungs, mingles with, and forms little Bubbles in it; which is what we call *Froth*, or *Foaming at the Mouth*.

Sometimes they perceive a *Beating of their Arteries* in places where it is not customary to feel any. *Extraordinary Beating of the Arteries.* The reason whereof is, that as the Blood changes from the State of Coagulation, there cannot but remain some particles of it which do not dissolve so soon as the rest: which making a Stoppage, either in the pores of the Muscles, or in some of the lesser Veins or Arteries, hinder the Blood which continually is press'd forward by the Heart, from continuing its circulation freely, so that finding no way to proceed or to return back, it swells and distends the Arteries more than usually; whence we perceive their *Pulsation or violent Beating* at every Contraction of the Heart. And since the *Copula explosiva* in this state wherein the Blood is not equally dissolv'd in all parts, is distributed *Beating of the Tendons or muscles.*

distributed in an unequal proportion to different Muscles of the Body ; hence those which receive the greater share suffer violent Contractions, and make a Pulsation like to that of the Arteries : which does not beat at the same time with them, nor is so frequent as their Pulsation ; but is more quick, that is the Explosion is sooner over.

*Tingling
of the
Thighs.*

The Thighs which were Paralytick during the Cold (because the coagulated Blood had caus'd a Relaxation, or Obstruction of their Nerves) are now affected with an *Itching Sensation* or *Tingling* ; because the Blood fermenting a new, dries up or evaporates the humidities which relax'd the Nerves during the Cold ; or dissolves those coagulated humours which obstructed their cavities ; wherefore the Spirits flow into their Nerves afresh, and animate the Blood which stagnated there before ; whose grosser Salts being put in motion, irritate the Nerves of the part affected ; which irritation gives the Spirits the degree of motion requisite to
make

make them flow up to the Brain, and there create the Sentiment of *Tingling*. And when the *Palsy* (as sometimes it does) continues during the Hot Fit, it is because the Blood does not ferment enough to dry up the Humidities, or dissolve the Obstructions of those Nerves.

There is another State somewhat different from the former, in which, tho' the Pulse be almost imperceptible, and a Chilness is felt throughout all the Body, yet it is for so very small a time, as scarce to be discover'd, and during that time no remarkable Accidents happen; but immediately after it there succeeds a violent Heat, which casts the Patient into several Accidents which I have explain'd above, as proceeding from the preternatural fermentation of the Blood. Now since the *Weakness* and *Lowness* of the Pulse remains but for a little while, and that the *Chilness* is not very great; it is manifest the Crudities are not of so fix'd a nature, in this, as in the State above-mention'd,

on'd, where the Cold, which succeeded the Hot, Fit was far more violent, and lasted longer: which is also evinc'd by the Pulse which is far more high, and frequent in this Constitution; the Rarefaction of the Blood distending the Arteries more, and its extraordinary division supplying the *Fluidum motivum Cordis* more frequently to the Heart, than in the above-mention'd State.

Quickness
of the
Pulse.

The third Constitution of those who are troubl'd with *Vapours*, is that in which, at the very beginning of the Fit, there is manifestly perceiv'd a violent Heat or Fermentation of the Blood, when not the least Perception of Cold or Lowness of the Pulse could be observ'd to have preceeded it. And since it is matter of fact that the Pulse is far more Quick in this Constitution, than in any of the above-mention'd; and that it approaches very near to the nature of a Fever; we have good reason to say that the Sulphurs of the Blood are more open, and the Salts do more easily meet and ferment with
one

one another in this than in the other Constitutions. For why should the Pulse be more frequent here? if it were not that the greater fermentation of the Blood separated more of the *Fluidum motivum Cordis*, which not being now of a gross Nature, as in the Cold fits, but compos'd of most volatil particles, soon ends its explosion, and easily evaporates and transpires out of the pores of the Heart: to which a new quantity of *Fluidum motivum* succeeds immediately, which making its explosion in a very little time, and being immediately succeeded again by a fresh quantity of the *Fluidum motivum*, causes frequent contractions of the Heart; which forcing out the Blood into the Arteries quicker than usually, are the cause of what we call *Frequency of the Pulse*. All or most of the same Symptoms happen here, as did in the hot Fit, which succeeded the cold; and are all to be explain'd in the same manner: the great fermentation of the Blood equally producing them in both states;

*Quick
beating of
the Pulse.*

states ; tho' in this latter its extraordinary boiling and effervency renders them more violent.

Of this Constitution are those who fall into *Hysterick Fits*, at the Smell of *Civet*, *Musk*, *Amber* ; or upon any violent *Passion*. And since the *Miasmata*, or Particles which exhale from those odoriferous bodies, put their Blood into so violent a commotion ; I conclude that their Sulphurs are far more open, and the Salts more volatil and ready to ferment, than in any of the above-mention'd States.

The Smell of Civet, Musk, Amber, &c. cause Vapours. *Civet, Musk, Amber, &c.* cause *Hysterick Fits* by the insensible particles which continually exhale from them, and enter into the Lungs together with the Air we breathe ; where immediately they ferment with the volatil parts of the Blood, and cause such a sudden rarefaction in it, as to hinder its free circulation thro' the Lungs : whence a Difficulty of breathing will ensue, as also many other Accidents, which I have elsewhere deduc'd from the sudden and violent fermentation of the

the Blood : all which are produc'd here in the self-same manner. And tho' I will not be positive that the Particles, which exhale from these odoriferous Bodies, do part of them enter by the pores of the Skin into the Blood, and so augment its fermentation (as considering that the excrement of insensible Transpiration, continually evaporating thro' these pores with an opposite motion, may probably hinder any other Body that presents it self, from entering in) yet there are several good reasons to make me conjecture they do : which if so, it is evident they will contribute a great deal towards setting the Blood in a violent ferment. Moreover the impression, these Particles make upon the Membrane of the Nostrils of these persons, raising in them no pleasing Titilation, but on the contrary a disagreeable uneasy Sensation ; a violent Reflux of the Spirits is made from that nervous Membrane to the Brain, and causes the perception of an uneasy Sensation ; whence the Spirits flow in greater quantity in-

Of Vapours ; or,

to several parts of the Body, and mingling with the Blood augment its fermentation.

*Why upon
a Passion
the Blood
is put into
a greater
ferment.*

Any violent *Passion* sets the Blood a boiling ; because at that time the Soul having receiv'd an Impression from some Object which causes an aversion in her, she immediately puts all parts of the Body in a readiness to free her self from the hated Object ; hence she determines the Spirits in great quantity into all the Muscles of the Body, as if she requir'd their Aid to drive it away. This greater Influx of the Spirits, causes violent Contractions of the Muscles ; which (together with the Spirits that evaporate into the Blood after the Explosion is made in the pores of the muscles) attenuate the Blood, and augment its fermentation. But what mostly causes the violent boiling of the Blood during a *Passion*, is, the mixture of a greater quantity of *Gall* with it ; together with the volatility and exaltation of the Salts of that Recrement. For whereas the Spirits during any *Passion*, are determin'd in greater quantity

quantity than usual into all parts of the body, the muscles of the Diaphragm and lower Belly receive more, and consequently (as 'tis matter of fact) contract themselves with greater violence : which they cannot do without pressing the *Liver* extremely on both sides at the same time, and consequently squeezing forth a great quantity of *Gall*. Add to this, that at the same time the Spirits flow in great quantity into the *Liver* it self, and cause a contraction in the Membranes of its excretory Glands ; by the action of which two causes together it is evident the *Gall* will not only be press'd out in greater quantity, thro' the *Porus Cholidocus* into the *Duodenum* ; but also have its Salts much attenuated and volatiliz'd ; partly by the violence wherewith the contraction of the *Diaphragm*, Muscles of the *Abdomen*, and *Villæ Fibrosæ* of the *Liver* force it out ; and partly by the Mixture of the Spirits which after their fermentation is ended mingle with the *Gall* ; which thereby is put into a great ferment, and

flowing in great quantity into the Guts, enters by the Milky Veins into the Blood, and causes its violent Effervency.

*Why the
Urine is
voided
clear, and
in a great
quantity
during a
Passion.*

And since I have explain'd in what manner a violent *Passion* produces these Fits, I find my self necessitated to give a Reason for a *Symptom*, whereof *Sydenham* takes particular notice, which is, that Patients, who immediately before made Water of citron colour, being suddenly seiz'd with any *Passion* or Perturbation of mind, do the very next moment make a great quantity of Urine clear as rock-water. Now when this Perturbation of mind happens by any *Fear* or Apprehension, the whole mass of the blood being chill'd, (as 'tis matter of fact it is in the passion of Fear) 'tis manifest its fermentation must abate, and it enter into some degree of coagulation, by which its sulphureous particles are made to approach each other, and thereby to squeeze out the watery serous parts of the blood: which, not being charg'd with any sulphureous or saline particles, appear

pear clear as common water. For the Clearness of Urine consists in the greater proportion of serous particles with little or no mixture of Salts and Sulphurs; and the colour thereof is wholly owing to the Salts and Sulphurs which are separated and mix'd with the serous particles.

But how the Urine should be evacuated clear as rock-water, when by *Anger*, or any violent *Passion*, the Blood is put into a violent ferment and agitation, is something more hard to explain. For we see that in an *Ague*, clear Urine is evacuated plentifully during the cold fit; and that because the coagulation of the Blood presses out its serous parts in a greater quantity than usual without a proportionable mixture of Salts and Sulphurs: but when the hot fit has been on for some time, then the Urine turns of a high colour, and reddish; the violent fermentation having attenuated and divided the Salts and Sulphurs of the Blood, so as to let a greater proportion of them be separated in the

Kidneys with the Urine. The best reason I can give of the *Phenomenon* in question, is, that whereas by *Anger* or any violent *Passion* of the Mind, the *Gall* is forc'd out in a greater quantity thro' the *Porus Cholidocus* into the Guts, by its Irritation it causes a swifter *Peristaltick* motion in them : and moreover in mingling and fermenting with the Fomes of the Distemper which lies in the Folds and Wrinkles of the Guts, it dissolves it and makes it enter by the *Milky Veins* into the Blood ; which it immediately coagulates by its fower particles, and thereby squeezes out the serous parts with little mixture of Salts. But when by various circulations these Indigestions are sufficiently attenuated and divided, then a due proportion of Salts and Sulphurs are separated with the serous parts, and the Urine regains its natural colour.

Another reason which may be given, is that the *Gall* entering in great quantity into the Blood, and being an *Alkaline Acrimonious* salt, first exerts its action upon the Sulphurs

phurs of the Blood, which by its rolling points it separates and divides; whence immediately the ferrous parts, which were contain'd within the Sulphurs, escape and are filtrated thro' the Kidneys, before the Salts have had time to ferment and divide themselves enough to be separated with them.

The *short and frequent Breathing*, which often happens in this Distemper, is occasion'd by the Heat and Rarefaction of the Blood, or its Stagnation in the Lungs. For the distention thereby caus'd in them, makes the Spirits flow from the Lungs up to the Brain, thence by the *Angles of Incidence and Reflection* into the Nerves of the *Diaphragm* and *Intercostal Muscles*, both *internal* and *external*. (Note that tho' most Anatomists are of Opinion that the *outward intercostal Muscles* serve for Expiration, and the *inward* for Inspiration: yet it is matter of fact, as you may see by laying open those Muscles in a live Dog, that both the *inward* and *outward Intercostal Muscles*

Short and frequent Breathing.

cles contract themselves during the Inspiration, and are antagonists to the Muscles of the Lower Belly.) Now the Spirits cannot flow in a greater quantity into the *Diaphragm* without causing a contraction in it, whereby it pulls the *Mediastin*, *Pericardium* and *Vena Cava*, which adhere to it, lower down into the Belly, and consequently gives more space to the Lungs in the cavity of the Chest; and the Intercostal Muscles contracting themselves at the same time advance each inferior Rib up to that above it, and thereby render the Cavity of the Breast still larger. Now the Air contain'd in the Lungs, having by the heat of the Blood been rarefy'd and lost its Elasticity, the external Air by the pressure of circumjacent Bodies, and its own Spring, forces its way in, as it is evident by several experiments it will do, wherever it finds other Air more rarefy'd, and less Elastick than it self. For example, make a great Fire in a room, and a small hole in the door, the Air shall rush in with violence

Hysterick Fits.

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violence thro' the hole, because the rarefy'd Air in the room has not force to oppose its pressing in. So a Bladder fill'd half full of Air, cannot distend it self in a Valley, where the external circumambient Air presses with equal force against it; but being carry'd up to the top of a high hill, where the Air is more rarefy'd, it distends it self and fills the Bladder. Now tho' the external Air forces its way in this manner into the Lungs, yet it enters but in a very small quantity, because the great distention, which the Blood makes, presses the Vesicles of the Lungs so, that they cannot contain much Air, and that little which does get in, is soon rarefy'd by the heat of the Lungs; when at the same time the *Diaphragm* ending its Contraction, the *Mediastin*, *Pericardium*, and *Vena Cava*, by their Spring pull it up into the Chest: whereupon the Muscles of the lower Belly (which during the Inspiration and Contraction of the *Diaphragm* were extended so as to have the Cavity of their

Examples to prove the Spring of the Air.

Nerves

Nerves straiten'd, and by consequence the Spirits hinder'd from entering into them in their usual quantity) return to their natural state, and the Spirits which stood crowding at the origin of their Nerves, flow abundantly into them ; whereby those Muscles are contracted ; the Ribs drawn down ; and consequently the cavity of the Chest is straiten'd ; and moreover by the same Contraction, the *Guts, Liver, Lights,* and *Diaphragm*, being rais'd up towards the Cavity of the Chest, do press the Lungs and so force out the Air. Add to this, the Spring of the *Villa Fibrosæ* in the Lungs, which being distended by the Air during the Inspiration, do by their own Elasticity contract themselves and help to squeeze out the Air. During this Mechanism of Expiration the *Diaphragm* is distended, its Nerves stretch'd, and their Cavities straiten'd, so as to hinder a sufficient Influx of the Spirits into them ; but as soon as the contraction of their antagonists is ended, the Spirits rush into its Nerves and contract

tract it anew : whereupon an *Inspiration* follows, which is succeeded by an *Expiration*, and that by another *Inspiration*. And in this manner there is a mechanical and uninterrupted succession of *Inspirations* and *Expirations* during the whole Life of Man. And this alternate motion is so far from being caus'd by any Act of our Will ; that it not only continues free and entire in our Sleep, when the Soul has little or no operation on the Body, but also, as we find by experience, it does not lie in our power to hinder, or hasten this Motion for a quarter of an hour together. Now the *Distention* or *Heat* of the Lungs in this Distemper (which makes the Spirits flow to the Brain, and thence to the *Diaphragm*, and *Intercostal-Muscles*, to cause their Contraction) continuing long upon the patient, causes frequent and almost continual Contractions of the *Diaphragm* ; to which the Muscles of the lower Belly are mechanically necessitated to correspond in their motion, and to contract themselves alternately to every

every one of its Contractions: and by this means the Patients breathe much shorter; that is, quicker and oftener than in their natural Temper.

And tho' for the most part, the Fit seizes the Patients in one of the manners above-mentiond; yet sometimes it takes them otherwise, but may still be referr'd to some one or other of the former Constitutions. As for Example, a Person, who was well the moment before, shall, without any other Symptom preceeding, *Weep most bitterly, Shriek, and Cry out, then fall flat on the Ground, and there remain senseless* 'till she recovers of her Disorder. And tho' no remarkable Symptom could be observ'd to fore-run these Accidents; yet upon strict enquiry and examination you will still find there was some little Chilness, some Shivering, or Perturbation over all the Body, caus'd by the first mixture of the Crudities with the Blood: which in this case not being of a fix'd nature, do immediately mingle

gle with the Blood, ferment, and attenuate themselves, and are separated together with the Spirits; whose regular motion is disturb'd by the mixture of their *Heterogeneous* Particles, and thereby those *Ideas* renew'd which were deepest imprinted, and most fresh in the Brain. And the thoughts of such Persons being generally employ'd upon dismal and melancholy Subjects; the Impressions of painful Sensations are renew'd: whereupon the Soul causes all those motions in the body which were established by the laws of the Soul's Union to it, to move *Pity* and *Compassion* in the beholders. These Motions are chiefly a violent Depression of the Eye-brows and upper Eye-lids, an Elevation of the under Lids: which happening together cannot but press the Glands which are situated within them, at each Corner of the Eye; and thereby squeeze out of them that ferous watery Humor call'd *Tears*. Which being hinder'd from flowing by their usual Channel into the
Nose,

*Fits of
Crying.*

Nose, (because the contractions of the outward muscles of the Nose, which constantly happen in this passion, shut up the passage by which they us'd to exonerate themselves into its cavity) they are forc'd out between the Eye-lids and run trickling down the Cheeks.

Shrieking.

They *Mutter, Cry aloud, and Shriek out*, on purpose to call others to their Assistance. But the irregular motion of the Spirits being such as is not easily govern'd by the Will, the Soul cannot determine them in a just proportion into the Muscles of the Tongue and lower Jaw; and when they are there, by their too great quantity, or irregular fermentation they cause disorderly motions in those muscles, unaccustom'd to the pronounciation and articulation of words; and make convulsive interrupted contractions which form nothing but *inarticulate Sounds and Mutterings*. Moreover the difficulty they have of Breathing makes them continually elevate their Chest to receive in fresh Air, which finding but little space in the Lungs,
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is soon forc'd out again. Which frequent Inspirations and Expirations, together with the Convulsions of the Muscles of the Tongue and lower Jaw, give several different collisions to the Air, which cause sometimes *inarticulate Mutterings*, sometimes *sharp shrill Sounds*.

Their *falling flat upon the Ground* They fall down. may be explain'd two ways. The first, because the Spirits flow in greater quantities than usual into the Muscles which are antagonists to those that sustain the Body ; whereby they are necessitated to yield to the Superior force, and let the Body sink down. Which, tho' it be the opinion of a most ingenious Philosopher, yet in my Judgment, is not altogether so mechanical, as if we should say that the Spirits not being supply'd in a sufficient quantity (as it is demonstrative they are not at some times in this Distemper) the Muscles, which sustain the Body, wanting their due proportion, yield to its weight ; which according to the nature of all Bodies still tends down-

downwards. So if a Man, as he is standing, should fall asleep, he tumbles down; not because the Spirits flow in greater quantity into the Muscles which are Antagonists to those that sustain the Body; (for what reason can be given for their greater Influx, in either of these States?) but because during Sleep the Spirits are detain'd in the Brain, and by consequence are not furnish'd in a sufficient quantity to the Muscles, to conserve their Tension: wherefore the weight of the Body is superior to their force, and it sinks down. It is also for want of this same Tension of the Nerves which belong to the several Senses, that we perceive no impression of extern Objects whilst we sleep.

Fits of Laugbing. Others fall into violent *Fits of Laughter*, which are follow'd by some, more, or all of the above-mention'd Accidents. These *Fits of Laughter* are occasion'd by the mixture of *Heterogeneous* particles with the Spirits, which fermenting them in the *Emporium* of the Brain

Brain, renew the Ideas of things which had formerly affected them with pleasing Sensations; whereupon the Soul acts the body with those motions which were ordain'd by Nature to discover to others our *Joy* and *Satisfaction*. These Motions are, the Elevation of the Eyebrows in that part which answers to the middle of the Eye, and their Depression in that part which is near the Nose; the Contraction of the upper and under Eye-lid at the same time, so as almost to close the Eyes; the Opening of the Mouth in such a manner as to shew the Teeth; when at the same time both corners of the Mouth are drawn back towards the Ears, and pull'd up, so as to cause a wrinkle in the Cheeks; which makes them swell and rise above the Eyes; the Nostrils are wide open; and the Eyes moisten'd with Tears: nay, sometimes they flow down the Cheeks, as when they cry.

Some will *struggle so violently*, *Violent* that several men are scarce able to *Strug-* hold them. This happens when the *gling.*

Of Vapours ; or,

Copula Explosiva or sulphureous particles of the blood, separated in *fibrous pores* of the Muscles, are of a tough viscid coherent texture ; wherefore they do not as usually ferment with the Spirits in the Pores of the Muscles to contract them, and then immediately evaporate by the insensible pores ; but cause a kind of swelling and distention without division, which extends every Pore much more, and makes the contraction last much longer than usually : hence comes their extraordinary force answerable to the conjunction of several ordinary persons strength put together. Now when long continu'd contractions happen in this manner to the Muscles of the lower Jaw, Lips and Nose, they press the Mouth and Nostrils so close together, that the Patients cannot draw their breath of a long while, and are almost stifled.

Sometimes whilst the Patient lies in this condition her *Eyes* shall be shut ; at other times *fix'd* and *staring* ; sometimes they shall be *turn'd inwards* ;

Hysterick Fits.

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inwards; at other times *wildly rowl from side to side.*

First the *Eyes remain shut* when *The Eyes* there is a deficiency of Spirits *shut.* throughout all the whole body; in which case either the ferous humours, (the part being relax'd) flow in great quantity into the *Orbicular Muscles* of the Eye-lid and so weigh them down; or they, receiving somewhat a greater quantity of Spirits than their Antagonists, contract themselves with a superior force, and remain shut, as is before explain'd at large.

Secondly the *Eyes are fix'd and* *The Eyes* *staring,* or as Physicians term it, *fix'd and* have a *staring.* *Tonick motion,* when at one and the same time there happens Convulsions or long continu'd contractions in these five muscles, *viz.* the *Aperiens, Elevator, Depressor, Adductor* and *Abductor.* For the violent contraction of the *Aperiens* keeps the *Orbicular Muscle* of the Eye-lids pull'd up so that the whole ball of the Eye appears: and the *Elevator, Depressor, Abductor* and *Adductor,* all four taking their ori-
gins

Of Vapours; or,

gins from the bottom of the *Orbita*, and being antagonists to each other, and inserted into the *Cornea* in four equal Angles; 'tis plain that when they all contract themselves at the same time, they will sink the Eyes a little down into the Head, and hinder all sort of motion in them, whence they remain *fix'd* and *staring*.

Thirdly the *Eyes* are turn'd *inwards* and continue in that position, when the *Musculi Trochleares*, of which each Eye has one, remain for a long while in one continu'd contraction; for these Muscles taking their origin from the bottom of the *Orbita*, then running thro' a *cartilaginous pulley* fix'd to the bone, and afterwards being inserted into the *Cornea* on its inward side, 'tis manifest that whilst they remain contracted or shorten'd they will pull the Eyes inwards towards the Nose, and keep them in that Situation.

Rolling
of the
Eyes.

Fourthly the *Eyes* roll from side to side where there happen successive alternate contractions in the *Troch-*

Trochlearis and *Obliquus* : for the *Trochlearis* moving the Eyes inwards, as I have just now shewn, and the *Obliquus* (which takes its insertion from the bottom of the *Orbita*, thence runs obliquely all along upwards towards the outward corner of the Eye, and there terminates in the *Cornea*) moving the Eye outwards: It follows that when these two muscles contract themselves alternately, the Eyes will be pull'd, now to one corner, then to the other, *or rowl from side to side*. So far as to the mechanism of these Accidents: but why they happen here, is to be accounted-for from the constitution of the Blood, which I have already shewn, capable of causing convulsions or violent contractions in the muscles from a mixture of *Heterogeneous* particles with the Spirits, or their greater Influx into any muscles; and liable to a Deficiency of Spirits, from the tough coherent texture and low fermentation of the Blood.

How they
live for a
long time
without a-
ny sign of
breathing.

Sometimes the Patient shall lie for a long time together with her Breast elevated as during the time of Inspiration, and not the least sign of breathing to be perceiv'd. 'Tis really strange that some persons have liv'd thus for three whole days together, without any perceptible signs of breathing, whereas at any other time they cannot protract life for a quarter of an hour without a manifest respiration. But since this Accident does sometimes happen, let us examin after what manner, and how 'tis produc'd in this distemper. *Galen*, whose opinion is follow'd by many learn'd Authors, says *lib. 6. de Locis Affect. Cap. 5. Summa Cordis refrigeratione tollitur respirationis necessitas, quæ si vigente Corde impediretur, promptus sequeretur interitus; sed exiguus Calor, qui adhuc super est in Corde, sola perspiratione fovetur, quemadmodum animalia in Latibulis per hyemem degentia sola transpiratione vivunt, quia frigidissima sunt, et exiguum habent calorem qui transpiratione non indiget.* But this can ne-

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ver be the true reason: for first he supposes the use of Respiration to be only that of cooling the Heart, whereas 'tis demonstrable the Air cannot penetrate to it. Secondly he says the little heat remaining in the Heart is conserv'd by perspiration alone: now how perspiration, which is nothing but an Emanation or Exhalation of the most spirituous active particles out of the blood, can contribute to conserve its heat is unconceivable: on the contrary the loss of those spirituous parts must abate its fermentation, and consequently its heat. *Riverius* commenting upon the same Chapter of *Galen*, where he compares the malignity of *Vapours* to that of a *Cramp-fish*, carries the matter farther, and has these words, *De Hysterica passione*, pag. 379. *Cum enim respiratio ad Cordis refrigerium necessaria sit, dum ab aura ista venenata Cor impense refrigeratur, non indiget illo refrigerio sibi per respirationem communicato, et ita cessat respiratio cessante usu.* But certainly this reason must be far from satisfactory,

since he establishes from an opinion evidently false, that the only mechanism over which even the Will it self has no power, shall as it were by the reasoning and consent of matter cease when 'tis of no farther use. As well might he pretend that when there is no possibility of coming at any food, a man shall not be hungry tho' he has fasted two or three Days: for the use and end of the irritation of Hunger [which is barely and solely to prompt us to take food when necessary] ceasing, why should not the irritation also cease? And tho' I could alledge many more arguments against this, and other Authors *Hypotheses* of the manner how this Accident is produc'd; yet as I never make it my business to contradict the Opinions of others any farther than by establishing of my own; I shall content my self with what has been said, which I thought necessary considering the great authority of these two Authors: and now proceed to the explanation of it. I observe first, that the Ribs remain

remain elevated as in the time of respiration during the whole continuance of this Accident; now I know that nothing can elevate the Ribs, or make them approach upwards one towards the other, but the contraction of the intercostal muscles; therefore the intercostal muscles do remain in one permanent contraction during the whole continuance of this Accident. From whence I gather, first that the muscles of the Lower belly do never in all this time contract themselves with a force superior to the Intercostal Muscles. Secondly that the cavity of the Chest is not alternately enlarg'd and diminish'd; and consequently that the mechanism of Respiration (which consists in this alternate motion) is abolish'd, or ceases entirely: contrary to the Opinion of some Authors who establish it as a maxim, that no one can live without respiration, and thence infer that *Hysterick* Women must and do respire during this Accident, tho' not perceptably: which is begging
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the question, and asserting a thing contrary to matter of fact. Now I think the best and only way of accounting mechanically for what happens here, is to own, as it is undeniable, that the usual mechanism of respiration, which alternatively enlarges and straitens the cavity of the Chest, ceases; but that the use of respiration, which is the successive intromission of fresh Air, still remains: Or more clearly, that here the Patient breaths by a different Mechanism than usually, *viz. by the sole Elasticity of the Air.* And this I shall endeavour to make appear, from the disposition of the Patient's body at this time; and from the nature of the air it self. First as to the disposition of the Body, the Chest remains elevated, whence it follows that its cavity is enlarg'd, and render'd capable of receiving a great quantity of Air; (and 'tis matter of fact that the Lungs are swell'd with air during the whole time of this Accident.) Secondly as to the Air, I have already shewn *pag. 92.* that 'tis a body capable of condensation and rarefaction, which

which by its Elasticity will press into any place where it does not find an opposition superior or equal to its Spring. Now I say that the Air contain'd in the Lungs being rarefy'd and loosing much of its Elasticity by the inward heat of the body, and the loss of its nitrous particles imparted to the blood, the exterior Air, which communicates with it, does by its own weight and spring rush into the Lungs, and force out the more rarefy'd and less elastick Air that was contain'd in them; when that is rarefy'd and has lost its Elasticity, then a fresh quantity of external Air rushes in; and in this manner fresh Air successively enters during the whole continuance of this Accident. And least any *Cartesian* should object that the successive Elevation of the Chest is the sole cause of the successive intrusion of the Air into the Lungs, I thought fit to cite the following experiment, which I think will sufficiently prove that 'tis the Spring and Elasticity of the Air, not the successive Elevation of the Chest

Chest that forces it into the Lungs. Take a live Dog, open his Wind-pipe, and put an iron tube down into it, to the other end tye a bladder, blow it full of Air, and seal it up hermetically : when this is done you will see the Dog respire as usually, and the Bladder successively empty, and fill, it self with Air. And that no one may pretend the Elevation of the Chest presses the external Air against the outside of the Bladder, and so forces that contain'd in it down into the Lungs, make the same Experiment with a glass Bottle ty'd to the Tube, and you'll see him respire in the same manner.

Having thus prov'd that the usual mechanism of Respiration is abolish'd, and a new mechanism of Breathing supplies its defect ; it remains that I shew why that ceases here, and how this can suffice for the preservation of Life. The natural mechanism of Respiration, which alternately enlarges and straitens the cavity of the Chest, ceases by the violent and long continu'd
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contractions of the Intercoſtal muſcles and Diaphragm; whoſe force being much ſuperior to their Antagoniſts the muſcles of the Lower Belly, hinders their pulling down the Ribs alternatively. Now the Intercoſtal Muſcles and Diaphragm acquire this ſtrong and permanent contraction from a greater Influx of the Spirits into them than into their Antagoniſts; for whereas in this Conſtitution of the Blood the ſulphureous particles, ſeparated in the fibrous pores of all the Muſcles, are of a tough coherent texture, the greater influx and mixture of the Spirits with them does not ferment, divide and attenuate them ſufficiently to cauſe an Evaporation of their particles thro' the pores of inſenſible perſpiration, and into the Blood as uſually; but makes a ſwelling and rarefaction like unto the fermentation of Dough, which diſtends the fibres and keeps thoſe muſcles in one continu'd contraction 'till the rarefaction is ended, which ſometimes laſts for ſeveral hours and days.

The

Of Vapours; or,

The new mechanifm of breathing by the fole Spring and Elafticity of the Air fuffices for the prefervation of Life, becaufe it fucceffively introduces fresh Air into the Lungs, which fupplies Nitre enough to maintain a fermentation and fluidity in the Blood fufficient for its circulation, tho' but a very flow one, thro' all the body.

One complains of a Pain under her Heart, a retching to vomit, and fometimes ſhe vomits porraceous cholerick matters, and it ends with a Jaundice.

Thefe Accidents are caus'd by an Obſtruction of the Liver, which hindering the due ſeparation of the Gall, confequently it remains in the Blood, and in its circulation unites with the Recrements, and Excrements of the Body, ſometimes with one, ſometimes with another, according as its Salts are of a more ſimular nature to them. Now when it happens that the Gall thus retain'd in the Blood has a greater Analogy to the ferment of the Stomach than to any other

other recrement, 'tis united and separated with it, and renders it acrimonious and corrosive; whereby an irritation is produc'd in the Stomach, which occasions a reflux of Spirits up to the *Emporium* of the Brain, whence by a mechanical necessity explain'd *pag.* . they are forc'd into the Nerves belonging to the Diaphragm, and muscles of the Lower Belly, which contracting themselves at one and the same time, cause a *Retching* only to vomit, where their force is but weak, where 'tis great and violent, an actual *Vomiting*. What they vomit up is Green, Yellow, &c. from the overflowing of the Gall, and its mixture with the ferment of the Stomach; which does according to its own different nature and colour (for the Gall in its proper Vesicle is sometimes green, sometimes yellow, sometimes Darkish) or the various nature of the Crudities it mixes and ferments within the Stomach, tincture them of these colours. The *Pain* they feel *under their Hearts*, is from an
Irri-

A Pain under the Heart..

Irritation caus'd by the same vitiated ferment, or corrosive Gall in the superior part of the left side of the Stomach, which is far the most sensible part thereof, as wanting the two coats of Spiral and orbicular fibres, which cover all the rest of the Stomach; consequently the nervous membrane, which is the organ of Sensation, lies more bare and expos'd in this, than in any other part of the Stomach: and because the Heart hangs just over it, of which they have something a clearer Idea than of the Ventricle it self, they refer the pain to the Heart, tho' it be not in the least affected in this case. Now when this Obstruction of the Liver has remain'd for some time, the Gall does not only mingle with the above-mention'd Recrements, but also joins it self to the Recrement of the *Corpus Mucosum*, and paints the whole Body yellow. For it is this Humour, collected in a vesicular continuation between the *Scarf-Skin* and the *True-Skin*, that gives the Colour to our Bodies; in Tawny-

From whence the Body takes its Colour.

ny-Moors this humour is of a tawny colour; in Blacky-Moors it is black; and white in White Men: And when its colour is chang'd (as in the present case) into yellow or darkish, by the mixture of the Gall, it gives the same colour to the Body.

The *deprav'd Appetite*, which of-
*Deprav'd
Appetite.*
 ten afflicts people in this distemper, is produc'd in the same manner; that is by the Obstruction of some one or more of the Strainers in the body, which causes a retention of its recrement in the blood, and a mixture thereof with other recrements. For when the recrements of a Strainer thus obstructed, meets with Salts of a simular nature to its own in the ferment of the Stomach, and in the Spittle, it is united to them, changes their nature, and hinders them from irritating the Stomach and Palate as usually, with a motion regulated by Nature to raise in us a desire of convenient food for our sustenance. Sometimes they are far more *hungry and cra-*
Hunger.
ving, than naturally; which happens, because the Salts of the fer-
 L ment

ment of the Stomach and Spittle have acquir'd a greater mass, and are become more acrid than usually ; wherefore they make a greater irritation on the Tongue, Palate and Stomach, which are the Organs of Hunger. Sometimes they have no Stomach to any meat whatsoever, because the Glands are so obstructed as not to separate the Spittle or Ferment of the Stomach in a sufficient quantity to cause any Irritation ; or because their Salts are so drown'd in ferous watery parts, as not to be able to make any Impression upon the Organs. And at other times, tho' they loath all accustom'd nourishment, yet they seek odd, absurd meats, which formerly pleas'd them not ; for when by any of the causes now mention'd, the Ferment of the Stomach and the Spittle receive such an alteration as renders them incapable of producing the accustom'd Irritation, the Patients think and consider with themselves what meat they could like ; but whilst they are renewing in their minds the remembrance of several sorts of food, the
 Spittle

*Why they
eat Trash,
as Chalk,
&c.*

Hysterick Fits.

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Spittle causing an unpleasant irritation in the Palate, gives them a disgust to them all ; wherefore they taste of all things they come at, how absurd soever, to find out somewhat that may please them, and if they chance to light upon any that has a proportion with their Spittle, so as by the mixture of it to cause an agreeable Sensation on the Tongue and Palate, they will grow fond of that, and by their good will, eat nothing else.

Some (altho' this seldom happens) *Violent Coughing!* will cough without Intermision ; which is occasion'd by the Obstruction of some Gland or other, as the Liver, or Kidneys ; whose Recrements if it chance to be united to that which is separated in the Lungs, their Salts will continually irritate its Membranes, from whence the Spirits will be determin'd up to the Brain, and thence by the *Angles of Incidence and Reflection* flow into the *Intercostal Muscles* and *Diaphragm*, whose extraordinary Contractions will cause a violent *Inspiration*, which from the mechanical

Structure of the parts inserving to Respiration, will always be follow'd by as violent an *Expiration*. Nature's design in this Accident of *Coughing* is solely to produce violent *Expirations*; which as they can be caus'd no other way than by antecedent violent *Inspirations*, therefore they precede: and the end of these violent *Inspirations* is to force away and carry forth out of the Lungs by the rapid motion of the Air, those sharp salts and humours which were separated in its vesicles, and might by their continuance there occasion many and great disorders in the body. For the supreme Artificer has so fram'd all the Springs of Man's machin, that whensoever any external body troubles or molests one part, the others in whose power, structure, and disposition it lies to be any wise relieving, should immediately put themselves in motion to do it, without any determination of the Will.

Yawning.

The *Yawning* is produc'd by a like mechanick, tho' the cause be different; for here the Blood not circulating

Hysterick Fits.

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lating freely in the Lungs, causes a heavy uneasy Sensation in them, which determines the Spirits into the *Diaphragm* and *Intercostal Muscles*, in much greater quantity than usually; hence a longer continu'd Inspiration is produc'd, by which a greater quantity of Air being let into the Lungs, it does by its nitrous particles ferment and dissolve the Blood, so as to make its circulation more free and easy, and take away, or at least diminish the obstruction and uneasy Sensation.

The *Stretching* happens in the same manner; for then the Patient feeling an Uneasiness all over her Body, caus'd by the thickness and slow circulation of the Blood, does by stretching her self violently out, contract all the muscles of the body, and thereby attenuate and divide the Blood, and so force that which was slow and drooping before to accelerate its motion, and circulate more swiftly; by which means the Uneasiness is remov'd.

The same Coagulation or thickness of the Blood, causing obstructions

*Hard Tu-
mors or
Swellings
in several
Parts.*

ons in the membranes or muscles of the Jaws, Shoulders, Arms, Hands, Legs, or Thighs, &c. hinders the Blood which is continually push'd on by the Arteries, from continuing its circulation; wherefore it swells, distends, and elevates that part into a Tumor, which yields not when it is press'd with one's Finger, because the obstruction hinders the Blood from being forc'd forward, and the opposite contraction of the Heart and Arteries will not permit it to return backwards; and if it should yield a little, the Blood would distend it again that moment the Finger is taken off.

*Spit much
and thin.*

When the Patient (as it sometimes happens in this Distemper) *spits thin and in vast quantities* for several weeks together; 'tis occasion'd either by the thickness of the Blood which squeezes forth its ferrous watery particles, or by an extraordinary division of its Sulphurs, which lets forth the Serosities and gives them liberty to flow separate from the mass of the Blood. Now the reason why at this time they
turn

turn to *Spittle*, rather than to *Urine* or any other *Recrement* or *Excrement*, is because it so happens from the previous fermentation of the *Blood* that the *Salts* with which they are charg'd, have more analogy to the *Spittle* or *Recrement* of the *Salivary Glands* than to any other.

Sometimes the Patient is seiz'd with a violent Pain on the outward part of her Head, continually fix'd in one place, which may be cover'd with the end of one's thumb: *Sydenham* calls this *Clavus Hystericus*, and imagines it lies between the *Pericranium* and the Skull; tho' I know of nothing between them capable of receiving any Impression or Sensation. But to conceive how this is caus'd, you must know that the Skull has three *Sutures* or *Seams* by which the Bones that compose the superior part of it are indented one into another like two Saws join'd together; thro' these *Seams* there pass *Veins*, *Arteries*, and a multitude of *Nerves* and *Fibres*; which coming from the *Dura Mater*,

Pain on
the top of
the Head,

ter, enter into the composition of the *Pericranium*. This being so, it is manifest that when at any time, either by the extraordinary rarefaction, or coagulation of the Blood, an Obstruction is caus'd in any one or more of these small Veins or Arteries, which pass thro' the *Seams*, the Blood that is continually forc'd from the Heart into these Arteries, finding no free passage, will swell and distend them beyond their natural stretch, and consequently press the Nerves against the Skull, which being solid and receiving but little of the motion, it is carry'd entire by the Spirits up to the Brain, and there makes a rude Impression, which causes a painful Sensation. It is accompany'd with a *Shooting*; because when the Pulse beats, then the distention of the Arteries is greater, and consequently imparts a more violent motion to the Spirits, contain'd in the Nerves. This Pain is felt most frequently in the top of the Forehead, because in that place the *Seam* call'd *Sagittalis* falls upon the *Sutura Coronalis*, and in their

conjunction there passes a greater quantity of Veins, Arteries, and Nerves, than where the *Seam* is single. The same reason is to be given for its being often felt in the back part of the Head, where the *Sutura Sagittalis*, falls in with the *Sutura Lambdoides*. Not but that this Pain happens sometimes in different parts of any one of these *Seams*, which the Physician may easily find out by examining where the Pain is felt. Sometimes this is accompany'd with *Vomiting*; either because the motion imparted to the Spirits was such as to make their *Angles of Incidence and Reflection* answer to the Nerves of the *Diaphragm* and *Muscles of the lower Belly*; whereby they are contracted both at the same time, and thereby cause a *Vomiting*: or because it accidentally happens, that some of the sharp humours which seldom fail to molest the Stomach in this Distemper, make a greater Irritation than ordinary at the same time, and so cause them to *Vomit*.

*Pains in
the Kid-
neys, Blad-
der, &c.*

The *Pains* which sometimes are felt in the *Kidneys, Ureter, or Bladder*, are caus'd by a Distention, proceeding from the Thickness or Rarefaction of the Blood, or of its Recrements in these parts; or else because the Blood squeezes forth ferous Particles upon them loaded with sharp corrosive Salts, which prick and corrode the membranes, and thereby produce these uneasy Sensations, as I have explain'd more at large in a *Treatise of the Gravel* which will soon be ready for the Press, and therefore purposely omit to dilate upon them here.

Tooth-ach

The *Tooth-ach* will happen when a Defluxion of these sharp, corrosive Humours, falls upon their Roots, and irritates their Nerves.

*Disturb'd
Sleep.*

Their *Sleep* is generally *short and disturb'd*, by reason of the Pains and uneasy Sensations felt all over their Bodies; or of the Irritation caus'd by the Heat or Feverish disposition, when they are in the hot Fit. Another cause of disturbance in their Sleep, is the terrible Dreams they are frequently troubl'd with, occasion'd

sion'd by heterogeneous particles which mingling with the Spirits ferment them in the *Emporium* of the Brain, and thereby renew the Images of past Objects, and parti- *Dreams.* cularly of those whose Impressions were latest and most deeply imprinted in the Brain: for we find by experience, that a Man generally Dreams on what had made a deep Impression in his Mind the day before. And since those who are far gone in this Distemper, do generally think on what is melancholy, dreadful, and perplexing, therefore it is that they are molested with terrible and frightful Dreams.

Lastly, we find that those who *Melan-* have long groan'd under this distem- *cholines.* per, and are quite conquer'd by it, are oppress'd with a deep *Melancho-* ly, and *Anguish of Mind*, always reflecting on what can perplex and fright them most; whence they fall into an incurable *despair of recovery*, *Despair of* and are very angry with those who *Recovery.* tell them there is any probability of it. This happens, because after long groaning under the Disease, and

and finding little Relief from various Remedies they have taken, but that the Distemper still encreases upon them; they reflect deeply upon their present condition; think on, and exaggerate to themselves what they undergo and what they apprehend will be the worst effect of the Distemper; and reflecting thus daily and almost without intremission upon the unhappiness of their condition, they at last imprint in their Brain so deep a Sentiment or Idea of their unfortunate circumstances, that every little motion which exagitates the Spirits, renews those thoughts. Moreover, by the continual attention to their misfortunes, the Spirits are detain'd in the Brain, to think fixedly upon them, and consequently are distributed but in a small quantity into the other parts of the Body, whereupon they become slack, the Blood loses much of the swiftness of its circular motion, and by consequence its fermentation is abated; whence it follows, that the particles which compose the Blood will approach each other,

other, and it grow thick and incapable of separating the Recrements of the Body (principally the Spirits) in a sufficient quantity ; as we constantly find it happens to melancholy People. Besides, a want of Spirits in the ferment of the Stomach hinders a good Concoction and Digestion of the Aliments ; all which concur to the depression of the Volatil parts of the Blood, and to the formation of a gross, terrene, thick Constitution ; from whence you may easily deduce all the Symptoms of a melancholy Temper.

And thus I think I have given mechanical, and I hope satisfactory reasons for all the Symptoms and Accidents of this Distemper. It remains now that I proceed to the *Diagnosticks*, *Prognosticks*, and *Cure* thereof.

CHAP. IV.

The Diagnosticks of Vapours.

TH E Diagnosticks or Marks and Signs by this Distemper is known from any other, are the Symptoms and Accidents which I number'd up in the first Chapter; not that it is necessary they should concur all at a time, but when any two, three, or more of them happen to a Patient by Intervals, and do not appear to be the Symptoms of any other Distemper, they are justly term'd *Vapours*: As for example; if a Person is troubl'd with a *Difficulty in Breathing*, a *Sensation of Strangling in her Throat*, has a *Swimming in her Head*, a *Heaviness on her Breast*, an *Uneasiness after Meals*, &c. and that these Indispositions come by Intervals, her Disease is *Vapours*. This

is easy enough to be known ; but what is most difficult in this Distemper, and to which the Physician ought chiefly to apply himself, is to find out the *Constitution of the Patient, the Nature of the Crudities and Indigestions which are the Cause of this Distemper*, and whether their *mixture* with the Blood does *thicken and coagulate* its mass, render it gross compact and difficult to ferment, and thereby apt to form Obstructions, or *excites a more violent Ebullition* and fermentation in it ; for from thence he must take his *Indication for the Cure*, which ought to be of a quite different nature according to the *difference* he finds in the *Causes* of the Distemper, and *Constitutions* of the Patients : and therefore it is that the generality of Physicians have so little success in curing of *Vapours*, because they prescribe the same remedies for all *Hysterick Fits*, whereas the Symptoms caus'd by Crudities of a different Nature, and happening to different Temperaments, and in different States
of

of the Blood require not only different, but quite opposite Remedies.

As for example, a difficulty of Breathing caus'd by a *Thickness* or *Stagnation* of the Blood in the Lungs, demands aperitive attenuating remedies, which may divide the coagulated Blood, and render its circulation free and easy; but when this Difficulty of breathing is caus'd by a too violent *Ebullition*, and Rarefaction of the Blood, then such Remedies must be prescrib'd as will thicken the Blood, and allay its too violent Fermentation.

You may gather that the Blood is of a gross thick Nature, difficult to ferment and apt to cause obstructions when at the beginning of the Fit the Pulse is low and weak, so as to be almost imperceptible; when the Patient perceives a great Cold run up her Back, and all over her Body, and belches up fower or sharp Fumes. It is true, that even in a Constitution of Blood easy to be put into a violent Ferment, sometimes such fower Crudities are engender'd, as do cause the belching
up

up of Fumes of the like savour, a Lowness of the Pulse, a Sensation of cold up the Back, and a Chilness over all the Body; but to find out and distinguish which of these two states of Blood it is, you must attentively examine the Pulse and Temper of the Patient, for in the latter Case the Pulse is far more frequent, and the Patient of a bilious or sanguin Constitution; in the former, there is a much greater interval between every Pulsation, and the Constitution is either pituitous or melancholy.

So that a Physician ought diligently to inform himself, whether at the beginning of every Fit there was a Lowness of the Pulse, a great Cold felt up the Back, and all over the Body; and whether the Patient came to her self without any augmentation of Heat, or no. If so, then he may with reason judge that the Texture of the Blood is very gross and thick: but if during these Symptoms, he finds that the Pulse was more frequent than in the former Constitution, and that after

M

them

them there succeeded a violent Heat, with a continuation of many of the same Accidents, or an addition of some new ones, he may infer that tho' the Indigestions are of a fix'd acid, or sower nature, yet the Constitution of the Blood is more open than in the former state. Lastly, if the smell of *Civet*, *Musk*, or *Amber*, makes them fall into Fits, he may immediately conclude that the Blood is very open, and the Salts thereof very easy to be put into a ferment.

Moreover this Distemper being strangely various, and counterfeiting several other Diseases, chiefly *Syncope*s, *Apoplexies*, *Epilepsies*, and *Convulsions* ; 'tis requisite I should assign the distinctive marks by which you may know it from any one of these Distempers.

*Difference
between a
Syncope
and Va-
pours.*

You may distinguish the Trance, which happens in Hysterick Fits, from a *Syncope* ; first, because the *Syncope* lasts but a little while, whereas this *Trance* lasts sometimes several Hours or Days. Secondly, because a *Syncope* seizes on a sudden, whereas here there are always some proceed-

proceeding Symptoms to be observ'd, upon a nice examination. Thirdly, the Pulse is almost, if not quite imperceptible, in the *Syncope*; and in *Hysterick Trances*, tho' it is weak and low, yet it is far more perceptible. Fourthly, in a *Syncope*, a cold Sweat always comes over the whole Body, which does not happen in these *Trances*. The Face is always pale in the *Syncope*, but sometimes very red in these Fits. In Vapours there are generally Convulsions; and in a *Syncope* always a Feebleness or Inability of all the Parts to perform any motion, regular or irregular.

Tho' it be very difficult to distinguish some Symptoms of this Disease from an *Apoplectick Fit*, (since sometimes the Patient seems to lie equally senseless and motionless in both) yet by nice and diligent observation, you will always find in these *Hysterick Fits*, some small *Convulsions* in the Hands, Feet, under Jaw, or Lips, or a fix'd Staring of the Eyes, which seldom happen in *Apoplexies*: tho' it be true that sometimes *Convulsions*

*Difference
between an
Apoplexy
and Va-
pours.*

do accompany *Apoplexies* too. Therefore the surest way is to examine whether the Patient be subject to *Hysterick Fits* or no; if she be, you may judge it to be *Vapours* and no *Apoplexy*. Another question to be ask'd, is, if she were born of Parents subject to *Hystericks*; for *Vapours* as well as other Diseases, are transmitted to us from our Fathers and Mothers.

Difference
between
Epilepsies
and Va-
pours.

I take *Epilepsies* and this Distemper to be the same Disease, and if there be any difference to be made between them, it only consists in this, that an *Epilepsy* is *Vapours* arriv'd to a more violent degree; that the Convulsions are more general and more apparent over all the Body, and they foam at the Mouth much more than in *Hysterick Fits*.

And since Persons in this Distemper lie in *Trances* for whole days, motionless, and senseless like unto dead Bodies; (nay some have had the misfortune, as very credible Authors assert, to have been bury'd alive in these Fits) it will not be amiss to acquaint the Reader with some

some methods whereby to know whether the Patient be alive or not. First, Let a very little fine carded Wooll, a Feather, or burnt Paper be held to their Mouths ; if these stir, it is a sign they breathe. Secondly, *How to know whether Patients that seem dead, be really so, or in a Trance.* put a Glass brim-full of Water upon their Breast, which will spill if the Ribs make the least motion. Thirdly, take a Looking-Glass, wipe it clean, and put it to their Mouths, which if it sullies, 'tis a sign they breathe ; but what is most secure in this Case, and what I advise to be done to every one who is subject to Vapours, is, to keep them for three or four Days 'till they are sensibly perceiv'd to corrupt.

CHAP. V.

The Prognosticks of Vapours.

ALtho' it sometimes happens that the Accidents of this Distemper are so violent, as to kill the Patient, yet generally speaking this Disease is not Mortal. However the extraordinary difficulty we find in Curing it, make it justly be term'd *Flagellum & opprobrium Medicorum.*

Why Vapours are so hard to be Cur'd.

This Difficulty of succeeding in the Cure is occasion'd, first because the Physician is generally never sent for in this Distemper, 'till the Disease is inveterate and habituated on the Body, and the Blood has contracted several Vices which are now grown as it were natural to it, and consequently extream difficult to be corrected. Moreover as the Patients have very deprav'd Appetites, they

for the most part indulge themselves during the Interval in eating whatever they fancy, tho' things of ever so bad digestion, which entertain and augment the ill disposition of their Blood: and sometimes the course of its fermentation, and the nature of its Salts are so very uncommon, that it is hard to find Remedies effectual to the reducing of them to their natural disposition. Again these Persons are for the most part possess'd with some Passion or deep Concern, which cannot easily be effac'd out of their Minds, and which 'tis very hard to prevail with them to own, or if they do, to discover the true cause; this a Physician ought to examine well into, and endeavour by all means possible to find out; for as long as the Mind is deeply intent upon any one thing, the Spirits are detain'd in the Brain, and for want of them the fermentation of the Blood is lessen'd, its Mass and Recrements do thicken and coagulate more and more, whereby the remedies are hinder'd from producing their design'd and usual effects,

fects; and the obstructions instead of being remov'd, rather encrease and take a deeper root, and the Cure makes but a very slow, if any, progress.

As for the common Symptoms of this Disease, *viz.* Grumbling of the Belly and Guts, Pains in the Back, Chilness, Suffocations, Belching, &c. they are not much to be apprehended, since we see them daily happen without the Patient's incurring any danger of Life; but still by how much the more violent and numerous these Symptoms are, the greater the danger is; especially if there be a *Syncope* or *Sleepiness*, and the Pulse be almost imperceptible, and the Difficulty of breathing very great: for in these Accidents, if they be violent, and last for a considerable time, the circulation of the Blood may be entirely interrupted, and the Spirits so detain'd in the Brain, or drown'd in the serous parts of the Blood, as utterly to abolish all the Animal and Vital Functions.

When

When Vapours are grown so violent as to become an *Epilepsy*, there is more danger than in common Hysterick Fits; because they fall with greater violence, and are in danger of breaking their Head, an Arm, or some other part. But chiefly because the Distemper has then taken a very deep root, and is become violent and intense to the highest degree.

Convulsions and *Palsy* are very unwelcome Accidents; because it sometimes happens that the part which was in Convulsion, does not return to its natural Situation when the Accident is over, and sometimes the Convulsions are so violent, that the Patient is in danger of breaking an Arm, or some other Part of her Body. The Palsy is a bad Symptom, because the part affected often remains Paralytick afterwards. Moreover the cause of a Palsy being the Obstruction or Relaxation of the Nerves, there is a manifest danger of an Apoplexy ensuing.

Note, first, that this Distemper is far more difficult to cure in old People,

Convulsions and Palsy, bad Symptoms.

ple, than in young Men and Women.

Secondly, that when they foam much at the Mouth, and the Paroxysm uses to continue for a very long time, there is more danger than otherwise.

Thirdly, that *Melancholy* in Hysterical People is easily cur'd in the beginning, but when it has taken deep root, and the Patients avoid and shun Company, then it is hard to be cur'd; nay it is to be fear'd they will endeavour to make themselves away: and if this *Melancholy* has so alter'd them, that they will not speak to, or answer others, it is much to be fear'd they will fall into a melancholy Madness.

Fourthly, that young Women who are afflicted with this Disease, are generally cur'd of it (without taking any remedies) as soon as they begin to breed.

Fifthly, that Vapours are dangerous if they seize upon Women when they are big with Child, or for some time after their Labour; because the violence of the Fits may
make

make those who are with Child miscarry; and after Child-birth most Women are generally so weak that they have not strength to resist a strong Fit or Paroxysm, but perish under it.

Sixthly, that if a Patient sneezes whilst she is in Hysterick Fits, 'tis a good Sign; *Mulieri quæ Uterinis molestat, aut difficulter parit superveniens Stermutatio bonum.* Hippocrat. Aphor. 28, Sect. 1. because it shews that the Diaphragm has Liberty to contract it self; and therefore the Difficulty of Breathing is not very great, and will soon be over.

Seventhly, that those Hysterick Women, who are afflicted with a great number of the Symptoms and Accidents of this Distemper; or in whom the cause of Vapours is a Suppression of their Menfes of long date and continuance, are in a bad condition, and their Cure will be long in effecting, and very difficult.

C H A P. VI.

The Cure of Vapours.

FROM what has been said in the preceding Chapters, it is evident that the Indications for the *Cure* of this Disease, are to remove the Crudities and Indigestions which lie in the Guts and Stomach; to correct the Vices which its Ferment hath contracted, and cleanse the Blood of those vicious Salts which pervert its natural dispositions; as also to take away Obstructions, and appease the turbulent Motions of the Spirits. For which end, the Physician, before he prescribes any Remedies, ought seriously to examine whether the Constitution of his Patient, and the Nature of the Disease be such as have render'd the Blood thick, gross, and difficult to ferment; or open and easy to be exagitated or put into an Ebullition.

Again

Again there are certain Remedies which appease and allay the Symptoms for the present ; and others, which, tho' they give no immediate Ease, strike at the Root of the Distemper, and are proportion'd to the entire extirpating of it. Wherefore I shall lay before you in the following Chapter the respective Remedies which are proper in these different Constitutions, both in the Paroxysm, and during its Intervals.

Supposing then a Physician is sent for to a Patient who is actually in a Fit of *Vapours*, caus'd [as he gathers from the Symptoms] by a thick, gross compact texture of the Blood ; and that he finds her in a *Trance* or struggling in *Convulsions* ; the first thing he ought to do is to inform himself from her acquaintance, whether strong stinking Scents as *Assa Fœtida*, &c. are offensive or beneficial to her ; for tho' almost always the Patients in this constitution are reliev'd by stinking Scents, and offended with sweet ones, yet it sometimes happens that nauseous Smells are equally prejudicial to them, in which

Outward
Remedies
in the Pa-
roxisms
from the
coagulati-
on of the
Blood.

which case a Physician must pre-
scribe other Remedies, of which by
and by. Generally speaking the
properest remedies in these Fits are
to throw cold Water on the Patient's
Face; to burn Partridge, Peacocks,
and where they are not to be had,
any other feathers under her Nose;
as also Leather, particularly the in-
ward soles of old Shoes; Horn. The
hoofs of Horses or Cows; the hair of
one's head; or any other hair; or the
Warts which grow upon Horses Legs;
any of which being burnt and
smell'd to in the Fits, often allay
the present Symptoms: especially
the Warts that grow on horses legs,
which being dry'd in an Oven, beat
into powder, and kept to be burnt
under the Nose on these occasions, is
mightily recommended by several
Authors. Besides these *Affa Foetida*,
Galbanum, *Petroleum*, *Spirit of Hats-*
horn, *Spirit of Urine*, *Spirit of Soot*,
Spirit of salt Armoniack, salt Armo-
niack it self; in fine, any such like
strong ill-scented things are proper
to be smell'd to in the Fits, and do
often give present Ease, because their
fumes

fumes being carry'd into the Lungs together with the Air we inspire, do by their active volatile particles ferment, divide and attenuate the blood, whose coagulation and stagnation in several parts of the body produc'd these Accidents : For the particles arising from these bodies do cause such a brisk fermentation in the blood, and are so very congenious to the animal Spirits, that they excite and invigorate their motion when torpid and languid, and supply them when wanting. *Willis* I know assigns a very different reason for their operation, and *Lib. de morbis convulsivis, Cap. 10.* has these Words ; *Ideo foetida & graveolentia naribus admota conveniunt quia scilicet eorum effluvia spiritus nimis efferos & exilire paratos reprimunt, ac in ordines cogunt, quin & Copulam heterogeneam iis excutiunt, & non raro profligunt.* It take particular notice of these words here, because I find the generality of Physicians giving the same reasons after him, why they prescribe, and why benefit is reap'd by these spirituous and

How stinking and volatile Scents operate to remove the Fits of Vapours.

and volatil Remedies taken either inwardly or outwardly; and yet with submission to better judgments I think 'tis next to a contradiction to imagine that those volatil particles which exhale from such bodies as *Spirit of salt Armoniack, Spirit of Urine, &c.* can have a virtue in them to repress the violent motion of the Animal Spirits, and as it were to imprison and pen them up. Every Physician will agree 'tis matter of fact they always augment and heighten the fermentation of the Blood, *a fortiori*, then must they have the same operation on the Spirits, which are the most minute active fermenting particles thereof. And in my opinion these remedies are therefore, and only therefore, beneficial in Fits, because they ferment with and disperse those Spirits which crowding before in particular muscles, produc'd violent contractions in them; and because by liquifying the blood, they attenuate the sulphurous particles of the *Copula explosiva*, which by reason of their preternatural toughness and cohesion retain'd and incar-

incarcerated the spirits within the pores of the muscles, which not being able to ferment and divide those tough coherent Sulphurs, caus'd a swelling and rarefaction in them, like unto the fermentation of Dough, whereby violent contractions or convulsions were produc'd, as is explain'd more at large pag. 104, 105, 106. Now the accession of these volatile particles augments the force of the Spirits, and helps them to divide those tough glutinous Sulphurs of the *Copula Explosiva*, whereupon the Spirits find liberty to evaporate, and the convulsions cease. And this *Willis* himself seems to hint at but a few lines before, where he says the scope and aim of a Physician ought to be that of extricating the Spirits from the *Copula heterogenea*, whereby their extraordinary motions and explosions may cease, *ut Spiritus Copulae heterogeneae amplexibus immunes facti inordinationes suas, explosionesque remittant*; and he confirms it by these last words of the former citation, *quibus et Copulam explosivam iis excutiunt*,

et non raro penitus profligunt. It is possible I may not thoroughly understand the Author's meaning here, but if the words are to be taken in their literal sense, 'tis to me something hard to conceive, how the same subtil volatil particles which ferment and attenuate the *Copula heterogenea* [for by what other means can they throw it off from the animal Spirits, and free them from its embraces] should repress the motion of the Spirits, and as he calls it, incarcerate and shut them up from action. Those who can conceive this clearly, or who think authority equal to reason, may continue to assign the same cause he does of the operation of these Remedies, but desire, that I who have establish'd it for a maxim, *nullius in verba jurare magistri*, may be allow'd to follow my own reason, and daily experience, which convince me these remedies produce their effects by attenuating the blood, and exciting a brisk lively fermentation in the spirits. For a confirmation whereof you need but reflect that

Euphor-

Euphorbium, *Tobacco*, *White Hellebore* in powder, or the *Smoak of Tobacco* blown up the *Nose* do often, by making the *Patient* sneeze, recover them out of the *Fits*; and the effects of these *Remedies* can be no other, than those of accelerating the *Circulation of the Blood*, and the attenuation and division of its mass by the violent contractions of the muscles. To this end sometimes, when the *Fit* is violent we order *Cupping-glasses* to be apply'd, the *Patient to be pull'd by the Hair*; violent *Ligatures* to be made on the *Fingers, Toes, Legs, Arms, Thighs*; *Contortions of their Fingers*; or the *Soles of their Feet to be tickl'd* till they return out of their *Fits*; which last remedy *Doleus* affirms did seldom ever fail him. *Vomits* also and *Emetick Clysters* produce very good effects in this *Distemper*; all which remedies help towards the division volatilisation and brisker circulation of the slow stagnating blood, and the exciting of a lively motion in the spirits. Of these remedies some one or more may properly be

made use of, where ill-scented favours augment the Distemper, as it sometimes happens.

If the Physician finds the Patient in a Fit like unto an *Apoplexy*, besides the external Remedies already mention'd, it will be sometimes necessary to use more violent ones, as *Scarifications, Blisters, Burning the Extremities of the Fingers and Toes*; from which parts, as being full of nerves and tendons, violent motions of the Spirits are caus'd up to the Brain, from whence they are determin'd in greater quantity into various parts of the body, and thereby the fermentation of the blood which was low and languid, becomes brisk and lively. But these remedies ought never to be made use of but by the advice of a Physician. Now when it happens that the coagulation of the Blood is so great, that these remedies can produce no effect and there is an eminent danger of the Patient's dying in the Fit, one may then try a last Remedy, which is to heat a Fire-shovel or Warming-pan red hot, and order it to be held

to the Head at a convenient distance : this seldom fails of wakening the sick Person, and tho' it cures her not, yet it gains her some moments of time which are very precious in this conjuncture for the settling of her concerns both as to this, and the next World.

If the Patient be taken with extraordinary violent Fits of *Convulsions*, besides the above-mention'd Remedies to divide and attenuate the thick gross blood, *Laudanum* also is very proper, to quell the inordinate motion of the Spirits. And moreover a Gag ought to be put between her teeth, least she should bite her tongue ; and she must be plac'd where there is no danger of falling, because by the violence of it she might hurt herself, or break an Arm or some other part ; Accidents which having happen'd sometimes, care ought to be taken to prevent them.

These Remedies a Physician may make use of according to his Judgment in Fits that are violent ; for when the symptoms are moderate,

he need not prescribe any thing during the Paroxysm, unless he pleases to order the smelling to stinking Scents, as *Assa foetida*, *Spirit of Sal Armoniack*, *burnt Feathers*, &c. But to those who are frequently troubl'd with Fits, 'twill be very proper to prescribe a *Nodulus*, of this or the like composition; which may be conveniently put into a little box and carry'd about them to smell to, when ever they find the Fit approaching.

Rx Ass. foetid. Galban. Petrol. Castor. Camphor. a ʒss. Ol Guajac. et Ol. Succin. a gutt x. misc. sindone rara includantur, et fiat nodulus naribus admovendus.

So much for outward Applications. As for inward Remedies, as soon as the Patient can swallow, give her one of the following Juleps according to direction.

Rx Aquar. flor. Aurant. Cerasor. Nigr. et Puleg. a ʒij. aq. Brion. composit ʒj. Tinctur. Castor. gut. xv. Syrup.
de

de Erisimo ℥j. misce fiat Julap. ita-
tim sumend.

℞ Aquar. Menth. Cardu. et Bar-
dan. a ℥ij. Spirit. Sal. Armoniac. gut.
xx. Ol. Succin. gut. x. Sacchar. pen-
diat. q. s. fiat. Julap. sumend. duobus
vel tribus haustibus.

℞ Aquar. Card. Scabios. et Pæon.
Composit. a ℥ij. Spirit. Sal. Armoniac.
gut. xxx. [vel Sal. Volatil. Viperar.
gr. xx.] Castor. gr. xij. Syrup. de E-
risimo ℥j. misce fiat Julap. sumend.
duobus vel tribus haustibus in Parox-
ysmo.

℞ Aquar. Puleg. Matricar. Cera-
sor. nigror. et Artemis. a ℥ij. Aquar.
Brion. composit. et Pæon. composit. a
℥j. Tinctur. Castor. ℥ss. Ol. Succin.
gut. xxv. hujus capiat in Paroxysmo
℥ij. vel ℥iij. repetitis vicibus.

℞ Tinctur. Castor. ℞j. vel ℥ss. su-
matur in haustulo vini, in juscule,
aut alio vehiculo appropriato.

℞ Tinctur. Ass. foetid. vel Tinctur.
Galban. ℞j. detur in cochlear. ij. vel
iij. aq. Matricar. aut alio vehiculo
appropriato.

These Remedies give present Relief in the Fits, because being compos'd of *Oils, Tinctures, Salts, or Spirits*, which are of a very volatile and active nature, immediately upon entering into the Blood, by the brisk fermentation they excite in it, they dissolve and liquify those humours that were coagulated ; attenuate and divide the tough coherent Sulphurs which incarcerated and penn'd up the Spirits in the pores of several muscles ; and by this fermentation disperse them, and set them at liberty to evaporate, or to mix and circulate freely with the blood, as in the natural disposition of the Body.

And here I think fit to make a short digression concerning the use of *Fuleps*. I know some Practitioners who have of late entirely rejected, and cry down *Fuleps*, as things which in their opinion serve only to encrease the Apothecaries Bills, and are of no real advantage to the Patient. For say they, all your common distill'd Waters, as Burrage-water, Bugloss-water, Milk-water, &c. have no considerable
virtue

virtue in them, and might as well be supply'd by so much Fountain or River Water ; and better by a mixture of generous Wine and Water. I grant the virtue of most distill'd Waters is not great ; no more is their price : neither do we use them in common Juleps but as *Vehicles* to the *Salts, Spirits, Powders, Syrups, &c.* which we mix with them ; and any one may at his pleasure prescribe Fountain-water, or Wine and Water in lieu of them ; only this I think, that as all distill'd Waters are more free from any sediment or terrene particles, they are the more proper vehicles of the two ; and that most Wines are so adulterated in *England*, that some little risk is run by prescribing ever so small a quantity of them to Patients that lie in a desperate condition. But I cannot yet see why Juleps should be entirely rejected ; there are certainly many *Salts, Powders, Spirits, &c.* not only proper, but absolutely necessary to the cure of several Distempers ; and why not as well prescrib'd in the usual form of

of

of *Fuleps*, as in any other? especially in acute Diseases, where if the Remedy has not a quick operation, it often comes too late. And 'tis undeniable that *Salts*, *Powders*, *Spirits*, &c. taken in a liquid vehicle, will sooner enter into the blood, than if made up into *Bolus's*, *Pills*, &c. which must necessarily take a longer time to be dissolv'd in the Stomach. *Cordial Fuleps* are what are most exclaim'd against, yet there is something to be said in their behalf too. For tho' possibly they conduce but little to the cure of any Distemper, yet as soon as taken they produce such a grateful sensation in the Stomach and Mouth, and give such an agreeable pleasant motion to the Spirits, that the Patient from a languid sinking condition, presently finds herself much reliev'd, more brisk and hearty than before. But as this *Fulep* soon passes, [and therefore might better be supply'd by some *Bolus* or *Electuary* of the same nature which would stay longer in the Stomach] that lively vigor quickly vanishes, and
leaves

leaves the Patient in as sinking spiritless a condition as before ; notwithstanding which I am not for totally banishing even these *Cordial Juleps* from the practice of Physick ; for why, where we see they are not prejudicial, may not a Patient who is willing to be at the expence, now and then receive a little comfort and refreshment in a long dejected State, tho' it be of no great benefit to him ? 'Tis as if one should refuse the comfort of a glass of Water to a Criminal expiring on the Wheel, because it cannot save his Life. But to bring the matter home to this Distemper, I say *Juleps* are more useful here than elsewhere, because being compos'd of *Waters, Oils, Spirits, Salts, or Powders*, of a penetrating and volatil nature, and their liquid vehicle carrying them immediately into the Blood, they soon excite a more vigorous motion, and active fermentation in it, and in the Spirits, whereby the obstructed nerves [if any were so] have their passages open'd ; and the Spirits from an irregular motion they

they had before, are made to flow regularly into all parts, to mix with, and dissolve the coagulated blood, and thereby the Circulation becomes free and easy, and the Patient soon recovers out of her fit. Or these Juleps being made up (as 'tis proper in the third constitution where the Salts of the Blood are much exalted) of what we know by reason and experience will abate and calm the violent motion of the Blood and Spirits, the Symptoms will thereby be allay'd in the *Paroxysm*, and by a frequent use of them often prevented.

Now if after what I have said any persons are so prepossess'd, that the Physicians are not willing to prescribe *Juleps*, nor the Patients to take them; Remedies of the self-same nature may be given in the forms of *Pills*, *Powders*, or *Electuaries*; but this I forewarn them of, that they will find it much more difficult to make the Patient take them, by reason of the Convulsions in the Throat, and difficulty of swallowing, which generally attends these

these Fits. However I here give some *Formula's* of them, which those who have a mind to them may make use of at their pleasure.

℞ *Semin. Agn. Cast.* ℥j. *Rutæ. Ass. foetid. Camphor.* a ℥ij. *Castor.* ℥ss. *Ol. Ambr. gut.* xxx. *Syr. de Erisimo* q. s. fiat *massa pillularum* cujus capiat a ℥ss. ad ℥j. 2da vel 3ia quaq; hora in paroxysmo.

℞ *Galban. Ass. foetid. Myrr.* a ℥j. *Castor. Camphor. Sal. Succin.* a ℥ss. *Ol. Succin. gut.* iv. *Balsam. Peruvian* q. s. misc. fiat *massa pillularum* cujus capiat ℥j. pro dosi.

℞ *Fæcul. Bryon.* ℥j. *Margar. præparat.* ℥ss. *Coral. rubr. præparat.* et *Castor.* a ℥j. *Verrucar. equinar.* in furno exsiccant. et pulverisat. ℥ss. *Ol. Rutæ. Still. et Ol. Succin.* a gut. vj. misc. fiat pulvis dividend. in 3es partes æquales quarum capiat unam singulis horis, vel bichoriis.

Doleus de Morb. Mulierum, pag. 631. commends this as an extraordinary Remedy, which seldom fail'd him in recovering the Patient out of

of her Fits. These *Pills* or *Powders* may any of them be made up into an *Electuary*, by mixing a sufficient quantity of Syrup with them; wherefore I omit giving any *Formula's* for *Electuaries*.

When you cannot get the Patient to swallow, and the outward Remedies and Applications have no effect, then if the Fit be violent and continues long, it will be proper to give an *Hysterick* or *Emetick Clyster*, after this or the like form.

℞ *Decoct. commun. Clysterizant.*
℔j. *Ol. Rutæ. et Ol. succin. a* ℥j. *Mell.*
Mercurial. ℥ij. misc. fiat enema in
ipso paroxysmo injiciend.

I order the common Decoction for Clysters in this *Formula* because it is always ready at hand. But if you have time to get the ingredients the following will be more effectual.

℞ *Rad. Fœnicul. Brion. et Aristio-*
loch. rotund. a ℥j. *coq. in* ℔iij. *Aq.*
font. ad 3ia *partis consumptionem*
deinde adde herb. Rutæ. Matricar. et
Puleg.

Puleg. a m. j. coq. per semihor. in Colatur. lbj. dissolv. Ass. fœtid. et Camphor. a ʒss. Mell. Mercurial. ʒij. misc. fiat Enema injiciend. in ipso paroxysmo.

℞ Decoct. Clysterizant. commun. ʒxij. Camphor. et Ass. fœtid. a ʒj. Vin. Emetic. ʒiv. misc. fiat enema injiciend. in ipso paroxysmo. pollet in magnis affectibus soporosis.

The Ingredients of these *Clysters* being much of the same nature as what the *Fuleps* were compos'd of, their operation is the same; and the intent of them is not so much to provoke Stools, as to ferment, divide, and attenuate the thick coagulated blood by their spiritous and volatil particles. For 'tis matter of fact that what ever is given by the way of *Clysters*, may and does pass into the Blood; but as the *Valvule* at the end of the *Colon* hinders the *Clyster* from being carry'd farther on into the other Guts; and the *Colon* it self having but a few *Lacteal Veins*, can consequently let but a small quantity of it be carry'd into the

the Blood, therefore it is that we make these Clysters at least three or four times as strong as Remedies of the same nature, when they are to be swallow'd into the Stomach.

Hitherto I have treated of the Remedies which are proper during the *Paroxysms* occasion'd by a preternatural thickness and coagulation of the Blood; and now shall enter upon what is necessary in the Hot Fit: which either arrives without any previous Accidents, or succeeds the Cold Fit, and is often accompany'd with Symptoms no less violent and dangerous.

If then the Patient falls into a *Swoon*, or Fit like unto an *Apoplexy*, during the Hot Fit, let her blood immediately, to prevent bursting of any blood-vessels; and by the diminution of the quantity to abate its effervency, and make it circulate more free and easy thro' the Lungs. Sometimes the Symptoms are so very violent in the hot Fit, that 'tis necessary to let her blood in the Jugular Vein, or in both Arms at once; and that for no other reason
than

Hysterick Fits.

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than to take away a greater quantity of Blood in a less time. And as soon as she is able to swallow, give this *Fulep*.

R. Aqu. Papaver. Erratic. et aq. Laet. Alexiter. a ℥iv. Syrup. Limon. ℥j. Spirit. Vitriol. q. s. ad gratam aciditatem; misc. fiat Fulep. statim deglutiend.

This being compos'd of acid Syrups and Spirits, is proper to abate and allay the violent fermentation and ebullition of the Blood; and if you would make it more cooling, you may add to it, *Sal. Prunel. ℥ss. Laudan. Opiat. Londinens. gr. j. vel ij. or Laudan. Liquid. gut. xxv. vel gut. xl.* or where the Case is pressing, and no Apothecary near, give her a large glass of Water, into which squeeze a Limon 'till the Water is very sharp; or in want of a Lemon, sower the Water with Verjuice; and where neither are at hand, give her a larger quantity of clear Water, or of Whey.

Q

When

Of Vapours; or,

When the Patient during the hot fit falls into a *Raving*, you must take away a greater quantity of blood, give her *Laudanum* in a larger dose, and the following *Fulep* according to directions, as long as she continues in this disorder.

R. Aquar. Borragin. et Buglos. a ℥vj. Coral. Rubr. Ocul. Cancror. præparator. et Cortic. Peruvian. pulverisat. a ℥j. Syrup. de Erisim. ℥iss. misc. fiat Fulep. hujus capiat ℥iij. vel ℥iv. pro Dosi; bis vel ter in paroxysmo. Singulis dosibus infundantur Laudan. liquid gut. xxv.

The quantity of *Laudanum* in this *Fulep* will serve to abate and allay the inordinate motion of the Spirits. The Jesuits-bark, Coral and Crabs-eyes, are proper to correct and absorb the heterogeneous particles, which being philtred thro' the cortical glands of the Brain together with the Spirits, caus'd that irregular fermentation and disorder in them by which the *Raving* was occasion'd,

caſion'd, as is explain'd more at large pag. 103.

In Fits where the heat is not ſo very intenſe, nor the Blood in an extraordinary Ebullition, it may not be proper to give ſo very cooling Juleps as thoſe with acid Spirits and *Laudanum*; but one after this manner may be preſcrib'd.

R Aq. Baccar. Sambuc. et aq. Ceraſor. Nigror. a ℥vj. aq. Brion. compoſit. ℥j. in iſtis extingue [ad totalem conſumptionem] Camphor. accenſ. Div. add ſyrup. Baccar. Sambuc. et ſyrup. Ceraſor. Nigror. a ℥iſs. miſc. fiat Julep. doſis ſit ℥ij. vel ℥iij. repetend. quoties videbitur neceſſarium.

Fuller in his *Formula* extols this as a moſt, excellent *Hysterick*, and I have often found it ſo in my own practice, when preſcrib'd in Fits ariſing from no violent, but yet a more than natural heat; as alſo in thoſe Fits where there is a ſmall but no great thickneſs and coagulation of the Blood. For as 'tis neither ſo cooling as the laſt mention'd, nor ſo

hot as the other Juleps, but is a medium between both ; it is proper in those cases where the Blood is in a midling disposition between a violent ebullition, and a defect of fermentation. But I never could observe any good effects of it, either in violent hot Fits, or in *Paroxysms*, that manifestly proceeded from a great thickness and coagulation of the Blood ; and the reason seems to be clear, because it is not compounded of Ingredients cooling enough to allay a violent fermentation and ebullition, nor of such whose activity and penetration is sufficient to ferment and dissolve a thick coherent texture of the blood : but yet by the *Camphir*, (which I am persuaded has more of heat than cold in its nature) and the *compound Briony Water*, 'tis capable of dissolving any small coagulation in the Blood ; and by the rest of its Ingredients which are cooling and balsamick, proper to allay any heat and ebullition which is not violent.

And here I cannot but take notice that almost all Authors, when they
have

have recommended some one or other remedy as a most extraordinary *Hysterick* by which they have perform'd great and frequent Cures, do still subjoin *sed tamen omnibus non aequè convenit*, it is not equally proper for all persons, without giving any reason why it is not so, and if they do assign any, 'tis *quia Idiosyncrasia insigniter variant*; because the Constitutions and Temperaments are very different one from another. But methinks it imports little to tell us, the Temperaments are different, unless they inform us in what those differences consist; how to distinguish them; and in which these Remedies are proper, in which not. For it is a certain and undeniable truth, that there is no such thing as an *universal Hysterick*, or Remedy which is proper for all *Hysterick Fits* without exception; tho' I am sensible the generality of Practitioners make no distinction, but prescribe the same Remedies to all Persons that are troubl'd with *Vapours*; and if they alter them after some time, 'tis only be-

O 3 cause

cause having found no benefit by what they had order'd before, they are willing to try something else. 'Tis indeed a very hard fate upon the Patient when she is forc'd to run thro' a course of the Lord knows how many nauseous Remedies 'till the Practitioner, after many tryals, happens by meer chance to hit upon the right; which sometimes very late, often never comes to pass. And all this while the Distemper gets ground, and takes deeper root, to the great misfortune of the sick person. To avoid which inconveniences the different Temperaments and Constitutions of the Patients, as also the nature of the Crudities which occasion the Distemper, are diligently to be examin'd into before any Remedies be prescrib'd; and when the Physician finds from the Symptoms and Accidents, that the Vices of the Blood and Humours consist in their preternatural thicknes and viscosity, those Remedies will be proper which are compos'd of such spirituous active Ingredients as can ferment, attenuate, and volatilize

latilize them; those improper, which are cooling and abate their motion. And as this is the Temperament of above three parts in four of those who are troubl'd with *Vapours*, therefore it is that volatil Remedies as *Spirit of Harts-horn*, *Spirit of Sal Armoniack*, &c. are almost always beneficial. But when the Fits arise from a violent heat and ebullition of the Blood, cooling medicines must be prescrib'd, and 'tis no wonder if hot spirituous Remedies do not equally produce good effects in this case, as in a thick coherent texture of the Blood. There are also other Remedies which being compos'd of Ingredients that are neither very active and fermenting, nor yet cooling in any high degree, 'tis plain cannot have virtue enough in them either to liquify the Blood, when very thick and glutinous, nor to allay its fermentation when violent and immoderate, and yet are found very beneficial in *Hysterick Fits*, [of which Nature is the last prescrib'd Julep] and the cases where they are beneficial are when eith

Of Vapours ; or,

the blood is in some small degree, only too thick and glutinous ; or where its fermentation is but a little exalted above the natural disposition. The reasons why they are proper in these cases you have in the precedent paragraph ; and how to find out and distinguish the different temperaments has been already deliver'd pag. 29, 30, 31. and pag. 160, 161, 162. *Willis* tho' he does not establish these different Temperaments in Vapours, is the only Author that seems to hint at them, when *Tractatu de Passione Hysterica* he says *in quibusdam Hystericis chilibeata juvant, in aliis Acidula et Serum lactis, in nonnullis Thermarum usus insigniter prodesse solent.*

In those Fits where a *Suffocation* is the only accident, there is nothing to be done during the *Paroxysm*, unless to make her smell to stinking Scents, as *Assa foetida*, *Gambanum*, &c. but as soon as she is able to swallow, an absorbent Julep with *Coral*, *Crabs-eyes*, and *Jesuits-bark*, will be very proper to correct and allay those Fumes which rising from
the

the Stomach up into the Throat caus'd this Accident, as is explain'd at large pag. 73.

Hitherto I have treated of what is to be done during the *Paroxysms*, or whilst the Patients are actually in the *Fits*. But whereas these Remedies serve only to abate the Symptoms and to give present ease: it remains that I now proceed to the principal part of the Cure, and assign those Remedies whereby the Cause of the Distemper may be entirely eradicated, and the Blood restor'd to its natural disposition: And tho' I have establish'd three different Constitutions in *Vapours*, yet I shall assign but two methods of Cure, because in the second Constitution exactly the same Method is to be follow'd as in the first, only the Remedies must be weaker.

And to begin with the more general Constitution of Patients subject to *Vapours*; viz. that wherein the Blood is of a thick glutinous texture, in some degree coagulated, and apt to cause obstructions; the *Indications* here are, to prescribe such remedies

remedies as can obforbe the fix'd Acids, correct the vicious ferment of the Stomach, remove obstructions, and divide attenuate and raise such a volatil ferment in the languid and vapid blood, as to make a due and regular separation of all its Recrements, but chiefly of the Animal Spirits. Which Indications cannot be fulfill'd but by the concurrence and long continuance of several remedies : for he who will pretend to cure this distemper long habituated upon the body, by one or two violent remedies, or in a short time ; imposes upon his patients, and might as well pretend to build *Rome*, or change the genius of a whole Nation in one day. For vitious qualities which have by little and little taken deep root, and infected the whole blood, cannot be corrected but by almost insensible degrees.

First then let the Patient be blood-ed, for tho' to the generality Bleeding may not seem necessary because in this constitution wherein the blood is thick and in some degree of coagulation, there is no rarefaction

ction or violent ebullition of it, nor Repletion of the blood-vessels to be fear'd, as in Fevers ; yet the obstructions of the Bowels and of several parts of the body hinders the free circulation of the blood, which bleeding renders more brisk, as well as augments its fermentation for the present. Moreover aperitive and attenuating remedies being to be taken afterwards, which stir up the salts of the blood and put them into a greater ferment ; thereby a too violent distention or bursting of some blood-vessel might be occasion'd which bleeding prevents: but chiefly because it gives other remedies a more free and easy entrance into the Blood, and because we find by experience they produce their Effects sooner and better after it.

The second day let her take any one of these Vomits.

R Vin. emetic. ʒvj. vel ʒj.

R Sal. Vitriol. a ʒss. ad ʒj.

R Tartar. emetic. gr. iij. vel gr. iv.

*R Rad. Hypuecuan. pulverisat. ʒss.
vel ʒij.*

The

The Indication for *Vomits* in this distemper is to cleanse the Stomach and Guts of the vitious slime and *Sabarra* which lies in their folds and wrinkles; moreover by the violent contractions they cause throughout all the body, to help towards the division and attenuation of the thick stagnating blood, which is the thing chiefly aim'd at in the Cure of this Disease. There are some circumstances which conterindicate vomiting, tho' otherwise very beneficial in this distemper. As when the Patient is very weak and at the same time very hard to vomit, is narrow chested, is subject to spit blood, or has formerly had any vessel burst, has a Rupture upon her, is afflicted with the Stone, or troubl'd with some other Accidents of the like nature, which will hinder a judicious Physician from permitting the Patient to take a Vomit.

The third day purge thus:

R *Senn. mundat* ʒij. *Rhabarb. opt.*
ʒiſs. Sal. Tartar. ʒiſs. coq. in s. q. aq.
font. in colatur. ʒviiij. dissolv. Cass.
recenter

recenter extract ʒj. Jalap pulver. gr. x. vel gr. xij. fiat potio sumenda mane cum cautela et Regimine.

If the Patients had rather be purg'd with Pills, Powders, Bolus's, or Electuaries, you may content them with some one or other of the following Formula's.

℞ Rhabarb. opt. pulverisat. ʒss. Aloes Succotrin. pulverisat. gr. x. Resin. Jalap. gr. vj. Cremor. Tartar. ʒj. cum s. q. Syr. appropriat. fiat massa pillularum.

℞ Rhabarb. pulver. ʒj. Aloes succotrin. et Jalap. pulverisat. a gr. x. Sal. Absynth. ʒj. Cremor. Tartar. ʒj. cum s. q. Syr. e Spina Cervi fiat Bolus.

℞ Diagrid. sulphurisat. gr. x. Antimon. diaphoretic. gr. vij. Cremor. Tartar. ʒj. misc. fiat pulvis sumendus in pulpa pomi cocti; in juscule, vel quovis alio vehiculo appropriato.

℞ Pulp. Cass. recenter extract. ʒj. Rhabarb. pulverisat. ʒss. Cremor. Tartar. ʒj. Jalap. pulverisat. gr. xv. cum s. q. Syr. de Rhamno Cathartico fiat Electuarium molle.

To

To poor people where respect is to be had to their indigency, I generally prescribe :

℞ *Extract. Rudii* ʒss. *vel* ℥ij.

And tho' many Authors prescribe Purges mixt with Hysterick Remedies for *Vapours*, I must own I can see no reason for it, but am of opinion that whatever *Cathartick* purges well, performs the intent, which is not to effect a Cure of *Vapours* by purging, but only to cleanse the Stomach and Guts, and to carry off from the Blood some parts of its vitious ferment by Stools : however those who have a mind to add *Hysterick Medicines* to the Purges, may make use of these or the like *Formula's*.

℞ *Pillul. foetid. major.* ℥j. *Resin. Jalap.* gr. iij. *Tartar. vitriolat. et Castor. a* ℥ss. *cum s. q. Syr. de Erisimo* *fiant Pillul.*

℞ *Calomelan.* ℥j. *Castor.* gr. xv. *Resin. Jalap.* gr. vj. *misc. fiat pulvis sumendus*

sumendus in pulpa pomi cocti, in jusculo, vel alio vehiculo appropriato.

I cannot approve Sydenham's method of purging three or four days together in the beginning of the Cure ; one Purge is then necessary to cleanse entirely the Stomach and Guts of that vitiated Slime which lies in them, as also to carry off some small part of those Salts which perverted the natural dispositions of the Blood, but a Reiteration of them is prejudicial ; for unless the Blood (which is generally very thick in this Distemper) be first divided and attenuated by altering Remedies, the most violent Purges, as it has ever been observ'd even by the Ancients, have no effect upon them ; but on the contrary, by bringing away a great quantity of the ferous lymphatick parts of the Blood, they give it a greater Consistence, and thereby encrease the Distemper.

Two or three days after these general Evacuations, I prescribe attenuating Remedies, to disunite and divide the strict Coherence of the
ful-

fulphureous parts of the Blood ; and I begin with aperitive Broths with Steel in them, which I order to be taken for ten, twelve, or fifteen days together, stronger or weaker ; with, or without Rhubarb ; according to the Violence of the Disease, and Constitution of the Patient ; and if I find no particular reason for the contrary, I purge in the middle, and at the end of those Broths. For tho' Dr. Sydenham positively affirms, that if in a Course of Steel he should give but one Purge, he should totally undo all he had done before ; I must beg his pardon if, convinc'd by experience, I am of a contrary opinion. And I have observ'd for several years, in the University of *Montpelier*, that Dr. *Chirac* and *Barberac*, the most celebrated Practitioners of that Country, (as it is also the Practice of the eminentest Physicians in *London*, to purge in chalibeat Courses) did not only purge their Patients twice or thrice during a Steel Course, but also mingled Rhubarb with every dose of Steel ; and yet I believe there is
not

not a City in the World of its extent, where half so many People enter into Steel Courses, and where they are so generally cur'd.

The Broths are made as follows.

R. Radic. Henul. campan. Lapat. acut. et Rusc. a ʒss. Rad. Helleb. Nigr. ʒss. Ferr. rubiginos. in nodul. suspens. ʒjss. coq. in s. q. aq. font. cum dimidio Pulli junioris, vel Carn. ovin. macr. ʒiv. ad tertiæ partis consumptionem, deinde adde folior. Borragin. Fumar. et Capill. Vener. a m. j. vase diligenter lutato, coq. lento igne per semihor. colatur. capiat ʒxij. vel ʒxiv. mane jejuno stomacho continuanda per xij. vel xv. dies.

These Broths being made with Steel, and aperitive Roots and Leaves, 'tis plain the design of giving them is that of opening and removing obstructions.

The four first days I ordinarily put into every Broth a dram and a half of *Rust of Iron*, as here prescrib'd; in the four next two drams; and afterwards two scruples or a

P

dram

Of Vapours; or,

dram of *Crocus Martis*, prepar'd with *salt Armoniack*, or of *Mynsichts Tincture of Iron* twelve drops, which are stronger and more aperitive than the common Rust of Iron. For Persons who are naturally very costive, I put into every Mess of Broth half a dram of *Rhubarb*.

These sort of Broths, tho' something loathsome to the Taste, do generally produce better effects than the same Remedies in any other form; because as they are more of the Nature of the Aliments we daily take, so they mingle more entirely with the Blood, and produce their effects more naturally.

Now when by the means of attenuating Remedies, I have loosen'd, as I may say, and open'd the thick compact Texture of the Blood, I prescribe Alkaline Medicines, as being proper to absorbe the fix'd Acids which caus'd the disorder in the Blood, and are now a little exalted by the precedent Remedies. Such are *Pearls*, *Mother of Pearl*, *Oyster-shells*, *Coral*, *Crabs-eyes*, *Jesuits-bark*, &c. To these you must always join
Steel,

Hysterick Fits.

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Steel, as being the chief and most effectual Remedy in this Distemper, and absolutely necessary to the removing of the obstructions.

To which intent I prescribe the following Electuary.

℞ Conserv. Absynth. Roman. et conserv. Trifol. paludos. a ℥j. Confect. Alkerm. ℥ss. Cortic. peruvian. Corall. rubr. et Ocul. cancror. præparator. a ℥ij. Ferr. rubiginos. cum sal Armoniac. præporat. ℥iij. Extract. Helleb. nigr. Div. cum s. q. Syrup. e Corticibus Citri fiat Electuar. cujus capiat ad magnitud. nuc. moscat bis in die, mane jejuno stomacho, et vespere ante cubitum. Superbibendo cochlear iv. vel v. sequentis Fulap.

℞ Aquar. Mentb. Puleg. et Artemis. a ℥jss. Aquar. Brion. composit. et Pæon. composit. a ℥j. aqu. Cinnamon. hordeat. ℥ij. spirit. Lavendul. composit. et Tinctur. Castor. a ℥ij. syr. e corticibus Citri. ℥ji. misc. fiat Fulap. cujus capiat Cochlear. iv. vel v. cum Electuar.

And here I would have you take notice, that there is no one Simple

Root of black Hel-
leborespe-
cifick in
Vapours. more soveraign in the Cure of Hy-
 sterick and Hypocondriacal Distem-
 pers, than the Root of *black Helle-*
bore, if rightly made use of. Its
Extract is what I generally pre-
 scribe.

This Electuary and Julep must
 be continu'd for ten, fifteen, twen-
 ty days, according as the Physician
 shall judge fit, and for the most part
 it will be requisite to purge in the
 middle, and after having ended it,
 tho' sometimes it will suffice to
 purge at the end only.

And tho' it always happens at the
 beginning, and generally throughout
 the whole Course of Steel Remedies,
 that they cause great disorders, both
 in the Bodies and Minds of *Hysterick*
Women, yet they must not be left
 off, but diligently continu'd, as the
 only Remedy that can effect their
 perfect Cure.

Besides what I have already pre-
 scrib'd, it will be necessary they
 have always by them, an *Anti-hyste-*
rick Mixture or *Julep*, of which
 they may take four or five Spoonfuls
 whensoever they find themselves
 squeamish,

Hysterick Fits.

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squeamish, faintish, drooping, or otherwise out of order. You may compose it thus.

℞ *Aq. Cerasor. nigr.* ℥vj. *Aq. Pu-
leg. et aq. Brion. composita* ℥iij. *Tin-
ctur. Castor.* ℥iij. *Coccinel.* ℥j. *misc.
fat Julap.*

When the Disorder is very great, you may mix thirty or forty drops of *Sal volatile oleosum*, and compound *Spirit of Lavender*, with four or five spoonfuls of this Julep.

Some from the very beginning apply to the Navel a Plaister, made of one ounce of *Galbanum*, and of *Carranna* and *Tacamahaca*, of each one dram, but in my opinion such outward applications can be of little or no benefit. No more than your *Pessus Uterinus*, which I never prescribe in the Vapours.

During the whole course of these Remedies, I would advise her to drink nothing but true natural *French Wine* with Water, into a glass of which let her put every now and then twenty, twenty five,

Of Vapours; or,

or thirty drops of a mixture of three drams of *Sal volatile oleosum*, and one dram of *compound Spirit of Lavender*.

Clysters also compos'd of aperitive Roots and Herbs, and chalibeat Preparations, of which you have the Formula's pag. 190. do produce extraordinary good Effects in this Distemper.

After these Remedies are ended, and she has repos'd her self for some few days, send her to *Tunbridge*, or some other Waters of the same nature; which being impregnated with Particles of Iron, extracted from the Iron-stone, through which they pass, do produce the same Effects (and that more naturally) which our chalibeat Preparations do.

Afterwards let her go to the *Bath*, which gives great ease in this Distemper, because the acrimonious Salts of these sulphureous Waters, liquify and dissolve the Blood in such a manner, as to excite a brisk, lively Fermentation in it, whereby a larger quantity of Spirits is supply'd

ply'd to the Brain, and thence into all the parts of the Body : moreover the sulphureous particles with which these Waters chiefly abound, are of a very balsamick nature, and consequently proper to allay the irregular and disorderly motions of the Spirits. Another reason why there is so much benefit reap'd by the *Bath*, is, that when the Patient goes thither, she by the advice of her Physician, sets aside all Concerns and Cares, and gives her self wholly over to mirth and pastime, whereby the Blood is invigorated and render'd more lively, and the Concoction of the Aliments, and all other Functions of the Body are perform'd in a more laudable manner.

During all these Remedies, she will do well to take every other, or every third day, just before Dinner, a Knife's point-full of powder of *Rhubarb*, or as much *Elixir Proprietatis*, in a spoonful of Broth, which will help much the Digestion, and hinder the engendering of Crudities.

All these same Remedies ought to be reiterated in the *Autumn* and *Spring*, if she be not perfectly cur'd before ; and in the Interval of those Seasons, let her take every morning the bigness of a small Nutmeg of the following *Electuary*.

℞ Cortic. peruvian. pulverisat. ℥ss.
Corall. rubr. et ocul. Cancror. præparat. a ℥iij. Ferr. rubiginos. pulverisat. ℥ijss. Sal. Absynth. ℥ij. cum s. q. syr. Absynth. fiat *Electuar.* cujus capiat ad magnitud. parvæ nucis moscat. mane jejuno stomacho continuando per menses duas vel tres.

This is an excellent Remedy, and I know a very eminent Practitioner, who by the continuance of it alone, has cur'd numbers of *Hysterick Women*.

After all these Remedies have recover'd the Patient of her *Hysterick Symptoms*, the Physician may, if he finds any *Acrimony* or Sharpness remaining in the Blood, give her *Crawfish-broths* for ten or twelve days, than which there is no greater
Sweetner

Sweetner of the Blood ; they are made thus.

R Cancror. fluviatil. nro xij. per medium dorsi secantur juxta nigram lineam quæ per dorsi longitudinem continuatur ; rejectisq; sordibus contundantur in mortar. marmor. deinde coq. lento igne duarum horarum spatio in vase vitreato, et diligenter lutato. Cola et fortiter exprime, fiat jusculum quod capiat æger mane in lecto, reiteretur per x vel xv dies.

After these remedies generally speaking it will be proper to put the Patient into a *Milk-diet*, and when that is ended, to order domestick *Baths* for a pretty long continuance.

During all this course the Patient must live as temperate as possible, eat no *Cheese*, *Ragou's*, *Pyes*, *spic'd*, *high-season'd*, nor salt *Meats*, nor *Fruit*, but if they have a particular longing for any one thing, which is not absolutely contrary to their Distemper, by all means let them have it, for it generally happens

pens that they long for such things as will best agree with the Ferment of their Stomach ; and I hold it for one of the best Rules in Physick, always to content the Patients, where it can be done without doing them any visible Prejudice : they must eat little at nights, and endeavour, as much as possible, to keep their minds free from all cares and concerns, to be merry, and pass their time in divertisements : as for Ladies who live in a large City, I would advise them to take the Air in their Coaches once or twice a day, for an hour or two at a time, and if they can bear it, to take it on Horse-back or a foot ; it is unconceivable how much riding, and walking much about, in a clear fresh Air, enlivens the Blood of those who are us'd to a Town-life ; let them, above all things, avoid all violent Passions.

*Their
Drink.*

As for their *Drink*, small Beer is positively naught, Ale and strong Beer I do not approve of neither, unless brew'd with *Wormwood*, *Dock* or *Gentian* ; the best drink in this case

case is natural Wine mix'd with Water, in which they may now and then put some drops of *Sal volatile oleosum* mix'd with *Spirit of Lavender* as above. And for those who are not accusom'd to Wine, the drinking of it alone in such Women, has often cur'd them of this Distemper, and of the Green-sickness.

Note, that when no hot Fit succeeds the cold, the Blood is more thicken'd and coagulated, than where a hot Fit succeeds; and consequently the Aperitives ought to be stronger, and continu'd for a longer time.

As for the other Constitution, in which the Blood is very open, and apt upon light occasions to be violently exagitated, the Cure must be different in it, from what has hitherto been prescrib'd, for here such Remedies are to be made use of as can allay the extraordinary Ebullition of the Blood, whereas in the other, we order'd such as were proper to excite a more brisk and lively Fermentation in it.

The Method of the Cure in the open Constitution of the Blood.

Supposing

Supposing then a Physician is sent for to a Patient, whom he finds in a Fit like to an *Apoplexy*, which he gathers by the Symptoms and Accidents, to have proceeded from too great an Effervency of the Blood; immediately he must order her *Bleeding*, *Scarifications* or *Cupping*, and moreover, make her drink a great quantity of cold Water, Limonade in Ice, or some of the cooling *Fuleps* above-mention'd.

If she be in a Phrenzy, or raving Fits, blood her in the Jugular Vein, or in the foot, and give her a great deal of cold Water, or Limonade, and *Laudanum* in cooling Emulsions Morning and Night: and a *Clyster* of *Oxyerat.* given in the Fit often allays it almost to a miracle.

If she lies in *Convulsions*, order the same Remedies, but blood her less.

In all these cases give Emulsions made of cold Seeds, twice a day, into that which she takes in the Morning, put three drams of Poppy-water; in that for Night, dissolve a grain of *Laudanum*.

℞ *Amygdal. dulc. excorticatar. par.*
iv. semin 4or frigidor. major. munda-
tor. ʒij. semin papaver. alb. ʒss. con-
tund. in mortar. marmor. sensim af-
fundendo aq. bord. ʒx. in colatur.
ʒviiij. dissolv. cristall. mineral ʒj. et,
misc. syr. Limon. ʒj. et si necessarium
videbitur adde Laudan. liquid. gut.
xxv. aut gut. xxx. vel Laudan. opiat
Londinensis gr. j. capiat hora somni.

This Emulsion being made up of cold Seeds, &c. is very proper to allay the violent effervency of the blood, which together with the help of *Laudanum* added to it seldom fails of composing the Patient to rest.

If the chief Accident be a *Suffocation*, as soon as she can swallow give her a Julep of a mixture of *Testaceous powders*, *Jesuits-bark*, and *Aqua Lactis Alexiter*.

But if it be a *Swooning*, which seldom happens in this Constitution, throw Water in her Face, put Vinegar up her Nose, make her drink a great quantity of clear Water or Limonade, as soon as she can be made

made to swallow ; and when the Accidents are over, if the *Pulse* continues *strong* and *high*, give her some of the refreshing cooling Juleps above-mention'd.

As for the Remedies which are to be given in the Interval of the Paroxysm, for the entire Cure of the Disease, it is evident they ought to be such as can give a consistence to the Blood, and appease its violent Fermentation : but since in this Distemper, there are always some Obstructions of the Bowels, (the Retention of whose Recrements in the Blood, causes this preternatural fermentation) we must first give aperitive Remedies to remove these Obstructions, and afterwards proceed to such as can temperate the Sharpness of the Blood, sweeten it, and reduce it to a natural, gentle and quiet motion.

First, let the Patient be bled two or three times, according to the greater or lesser Effervency of the Blood ; for here it is requisite to empty the Blood-vessels more than in the other Constitutions ; both because

cause the Ebullition of the Blood it self is far greater ; as also because the aperitive Remedies which must be given, finding an open Texture of Blood excite a greater Fermentation and Rarefaction in it, whereby the Risk of bursting the Blood-vessels is greater.

After bleeding, let her take a gentle Vomit to cleanse the Stomach and Guts of the Slime and *Saburra* which lies in them. The day following a gentle Purge, without *Cassia* or *Manna*, because they generally make Hysterick Women to fall into Fits, instead of giving them ease.

Take, for Example, an ounce of *cream of Tartar*, which dissolve in two large glasses of Whey or any other appropriated Liquid.

Or,

R Tamarindor. pingu. ʒij. Rhabar. ʒj. coq. in s. q. aq. font. in colatur. Ibjs. infund. folior. Senn. ʒij. cremor Tartar ʒjss. coletur et fiat potio dividenda in tres partes equales, quarum capiat unam hor. 5ta matutina, alteram

*ram hor. 7tima, et tertiam hor. 9na
interjecto iusculo.*

This Purge being given in a great quantity of Liquid, and at three different times heats the Body less than most other Purges (except *cream of Tartar*) and therefore may be very properly prescrib'd here where the Physician must take all care to heat the Patient as little as possible.

The next day after the Purge, I order the Patient to begin a course of gentle *aperitive Broths* made thus.

R Radic. Gramin. Asparag. et Cichor. sylvestr. a ʒss. Rubigin. Ferr. (induct. cum succo pomor. acidulor.) ʒj. carn. ovin. macr. ʒiv. coq. in s. q. aq. font. ad tertiæ partis consumptionem, deinde adde folior. cichor. sylvestr. Lactuc. et Capillor. Vener. a m. j. vase diligenter lutato coq. lento igne per semihor. colatur. capiat ʒxij. vel ʒxiv. mane jejuno stomacho per xij. vel xv. dies; purgando in medio et fine.

These

These Broths being ended, the next thing I prescribe, is an *Electuary* made thus.

℞ *Conserv. cochlear. hortens. et conserv. Flavedin. Limon. a ʒj. pulver. Ferr. Rubiginos. (induct. cum succo pomorum acidulor.) ʒjss. cortic. peruvian. ʒiij. ocul. cancror. et corall. rubr. preparat a ʒij. cum s. q. Syr. capill. vener. fiat Electuar. cujus capiat ad nucis moscat. magnitudinem mane jejuno stomacho, et vespere ante cubitum. Superbibendo haustulum sequentis Fulap.*

℞ *Aquar. cerasor. nigror. puleg. et Artemis. a ʒiij. Aq. Brion. composit et aq. Pæon. composit a ʒj. Tinctur. castor. ʒj. syr. e corticibus citri ʒiij. misc. fiat Fulap.*

The Ingredients of this *Electuary* and *Fulep* being moderate Aperitives will help to dissolve what part of the Blood continu'd coagulated, and open what obstructions remain'd, without inflaming the Blood, which is carefully to be avoided in this Constitution.

Q

These

These Remedies being ended, purge the Patient once, and then send her to *Tunbridge*, whose Waters impregnated with particles from the Iron-stone, will at once contribute to the entire removing of all obstructions, and cool the Blood, if drank with method and care.

The *Bath* generally speaking must be too hot for People of this Constitution; but of that the Physician must judge. When she returns home let her take *Crawfish-Broths* for a fortnight, afterwards enter into a Milk-diet, and use domestick Baths for a month or six Weeks, in order to sweeten her Blood and allay its inordinate ebullition and effervency.

Next *Spring* and *Autumn*, if she be not perfectly recover'd before, let her take the same Remedies over again: and in the Interval of the Seasons, order her every other or every third morning the bigness of a Nutmeg of this *Electuary*.

R Cortic. peruvian. corall. rubr. et
 ocul. cancror. præparat. a ʒss. pulver.
 Ferr.

Hysterick Fits.

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Ferr. rubigin. (cum succo pomor. acidulor. induct.) Zijfs. *succin. flav. pulverisat.* ʒj. *cum s. q. syr. capill. vener. fiat Electuar.*

Some eminent Physicians have as-
sur'd me they have found great Ef-
fects from this Remedy ; and that
for those who are troubl'd with no
other Symptoms but *Indigestions*,
Winds, and some little *Pains* and
Uneasiness which proceed from
thence, a continuation of this *Ele-
ctuary* alone, with a careful *regular
Diet*, and using a moderate quanti-
ty of true natural *Wine* instead of
Malt-drinks, seldom or never fail'd
of setting them to rights. Upon the
great Character they gave of it, I
have often prescrib'd it to several
Patients, and the observations I
made were that it had extraordina-
ry good effects upon those whose
Blood I gather'd from the Symptoms
was something more thick and glu-
tinous than in the natural disposi-
tion, but yet not coagulated in
any high degree. But for those
who were of an open constitution

Of Vapours ; or,

of Blood easily put into an ebullition, I found it heated them too much, and therefore when I prescribe it to such persons I always leave out the *Steel*, and the *Amber* also. The other Ingredients of it which are, *Jesuits-bark*, *Coral*, and *Crabs-eyes*, are proper to sweeten the Blood and to allay its ebullition.

Their way of living as to Diet, ought to consist chiefly of cooling refreshing Nourishments, and of such as may give the Blood a greater Consistence ; such are *Water-gruel*, *Barly* and *Rice-broths*, *Rice-milk* ; *boil'd* and *roasted Veal*, and *Mutton*, *Veal*, or *Chicken-broths*, not made so strong as usually ; she must eat no *salt* or *spic'd Meats*, *Pyes*, nor *Ragou's*, because they will enflame the Blood : she may be allow'd the eating of some Fruit, to wit, *Rennet-apples*, *Kentish-cherries*, and such others which have a *sharp Taste* and abound with *Acids*, whereby the Blood is cooled, and its Fermentation something abated.

Her Drink should be natural *French Wine*, but in less quantity, and

and with more Water, than in the other Constitutions, because the Blood is more apt to be put into a violent fermentation. She must avoid all Concerns, Anxieties, and Passions, but above all things, divert herself as much as possible, with what is most pleasing and suitable to her Genius, as seeing of Plays, frequenting merry company, taking the Air in the Parks, where besides the benefit of the fresh Air she receives, the variety of different company, and objects, which she sees, concur to pleasure her Mind, and remove all anxious thoughts, and thereby contribute much towards the Cure. For upon diligent search and enquiry, you will almost always find, that those who are troubled with Vapours, have some deep Passion or Concern upon them, which renders them pensive and thoughtful: wherefore the Physician ought to consider attentively the circumstances of his Patient, and to inform himself from her acquaintance, what may be the cause of her Concern, which having found out, he

must, with the aid of her Friends and Relations, facilitate to her the means, if possible, of obtaining what she desires. I know an eminent Practitioner who assur'd me he has found better Effects from this Method alone, than from most other Remedies that can be prescrib'd in this Disease.

Two very considerable Cures I my self saw him do in this nature; one was of an ancient Gentlewoman, who us'd to lie for two Months together in violent Fits, seldom being able to get the least Repose; all the Remedies she had taken for two Years and a half, were ineffectual; but the Doctor had no sooner found out what it was that troubl'd her, and put her into a way of obtaining what she so passionately desir'd, but all her violent Symptoms were abated to a Miracle, and in two or three Months, with the taking of a few almost insignificant Remedies, she perfectly recover'd.

Another I saw him cure in the like manner, who us'd to lie for whole Months together in such violent

lent

lent Convulsions and Ravings, that she had hardly so small an Abatement, as to let her take what Food was necessary for the Sustenance of Life.

Sometimes the Suppression of the *Lochia* in Women after Child-birth, causes *Hysterick Fits*; and sometimes they are caus'd by the *immoderate Flux* of them. The *Retention* also, or the *immoderate Flux* of the *monthly Courses* in Women often cause *Vapours*. And 'tis remarkable that Women subject to *Hysterick Fits* are generally troubl'd with the *Paroxysms* a little before their monthly Courses use to come down, especially if they do not come freely, in all which Cases they are to be cur'd by the respective Remedies which are proper for these different Distempers.

Note that in Women molested with the *Whites*, if they happen to be stopp'd by unseasonable Astringents, very often violent *Fits* of *Vapours* will ensue; in which Case the Physician must prescribe Ape-

ritive Remedies to make them flow again.

Sometimes the Patients are seiz'd with a *Cholick* and a violent *Looseness*, which must be appeas'd by *Laudanum* and other appropriated Remedies for those Distempers.

Sydenham says, that *Venice-Treacle* alone, if continu'd for a good space of time, is perchance the most effectual Remedy in this Disease : He also adds, that *Jesuits-bark* alone, continu'd to be taken Morning and Night for some time, has restor'd many desperately ill, especially those who suffer'd violent Convulsions. I own I have never made use of *Venice-Treacle*, however, the nature of it being what seems very well appropriated to the Cure of this Distemper, I have so much deference to *Sydenham's* Experience and Sincerity, as to believe it deserves that extraordinary Character he gives of it. But as for the *Jesuits-bark* I cannot sufficiently extol its Excellency in those Cases where this Distemper manifestly arises from a Constitution of the blood,

blood, open, and very easy to be put into an Ebullition. It was an Accident that first discover'd to me the Virtues of it in this Distemper; for tho' *Sydenham* gave it an extraordinary Character, I scarce believe I should ever have try'd it, but that a young Lady troubl'd with Vapours to a high degree, who was committed to my care about two years ago, falling into so violent a Fever, accompany'd with Raving and Convulsions, that she was in eminent danger, I thought the speediest and most effectual Remedy in so pressing a Case, would be the *Bark in Clysters*, which I order'd to be repeated very often, and it not only carry'd off the Fever in three or four days, but being continu'd for five or six days longer to prevent the return of it, entirely cur'd her of the *Vapours*, and of most violent Convulsions, with which she was very much molested in all her Fits. The speedy Cure of the Fever was not so surprizing to me, because I had seen many as great Cures done by the *Bark in Clysters*: but so entire a
Cure

Cure of the Vapours where I so little expected it, surpriz'd me much ; and as I could attribute it to nothing but the *Bark*, I began to reflect on the Encomiums *Sydenham* gave of it, and concluded it was that alone which had effected the Cure ; but for my better satisfaction resolv'd to try it whenever I met with Patients troubl'd with Vapours, whose Constitution of Blood was open, and easy to be put into an Ebullition ; and this I can affirm, that it seldom miss'd curing nine out of ten. Perchance taking it morning and night as *Sydenham* advises in *Powder*, *Electuary*, or *Pills*, may effect the Cure ; but in my opinion taking it in *Clysters* is much to be preferr'd to any other method, because first you take a far larger quantity of it in less time, and secondly you avoid an inconveniency which most people find, who take any great quantity of the *Bark*, which is an *Oppression* and *Distention of the Stomach* ; an Accident which Patients in Vapours are generally subject to from the Distemper it self, and therefore care ought

ought to be taken not to give such Medicines as may encrease it. Note that the *Bark* is not proper where the Obstructions are great and the Blood coagulated as in the first and second Constitutions; at least I never have thought fit to prescribe it in those cases.

I had design'd to have added to this Treatise a Collection of those Remedies which are particularly recommended by several Authors in this Distemper, but that I found that *Dolæus* p. 634. and *Riuerius* p. 382, 383, 384. had already done it to my Hand; to whom I refer the Reader.

But whereas there are many Remedies which *Custom* and *Ignorance* have impos'd upon the World for excellent in *Vapours*, when in reality they neither are, nor can be in the least beneficial in this Distemper; I have thought fit to number up as many of them as occur'd to my memory, that Patients may not be abus'd and defer proper Medicines in Expectation of a Cure from insignificant Trifles.

Such

Such are

Girdles made of a Man's, or a Stag's skin commended by Bartholinus.

Pieces of an Elk's hoof hung about the Neck, or in the Ear; or wore in a Ring so as to touch the Skin.

The Ureter and Testicles of a Fox dry'd, and hung about the Neck so as to lie upon the Navel.

A piece of a Wolf's Liver, or of his flesh hung in the same manner.

Roots of Dog-fennel hung about the Neck.

Bags fill'd with Anis-seeds, Carrot-seeds, Leaves of Rue, &c. apply'd hot to the Navel.

Garlick slic'd and put to the Navel.

Hot Loafs soak'd in Oil of Rue and Spirit of Turpentine apply'd to the Navel.

Leaves of Tea boil'd and apply'd hot to the Navel and Belly.

Linnen cloths dipp'd in the Urine or Dung of an Ox and apply'd warm to the same Parts.

Grains of Musk put with Cotton into the cavity of the Navel.

Anointing

Anointing of the Belly, Navel, and Pit of the Stomach with the Oils of Nard, of Castor, of Galbanum, of Spike, of Saffron, of Tin, &c.

The same or any other Oils dropt into the Ears.

Scains of Thread boil'd and apply'd hot Pudendis mulierum.

Fumigations of various compositions receiv'd into those parts thro' a Funnel.

Pessaries, Musk, Aromatics, and sweet Scents apply'd to those parts.

Napkins girt strait round the Belly with a design to reduce the Womb to its natural Situation, and hinder Vapours flying upwards.

Cupping-glasses apply'd to the Navel in order to draw down the Womb.

In fine all Remedies given under a pretence of bringing down the *Womb* and reducing it to its natural Situation; as also Medicines for strengthening the *Womb* are jests. All which and many more as foolish Remedies have got footing in the practice of Physick from the ignorance of the Antients who attributed the cause of Vapours to the *Womb*, and fancy'd

cy'd it mov'd up and down, and could rise even into the *Throat*, which Errors have already been refuted, p. 19.

Plaisters of Galbanum, &c. apply'd to the *Navel*: and the *After-birth of a first-born* prepar'd, are also in my opinion very insignificant Remedies.

The *Burning of Brimstone under the Nose* in Fits is a Remedy not advisable because it creates a difficulty in breathing.

FINIS.

A

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