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P. 22c.

Medicina Musica:
OR, A
Mechanical Essay
ON THE
EFFECTS
OF
Singing, Musick, and Dancing,
ON
HUMAN BODIES.

Revis'd and Corrected.

To which is annex'd,

a. 3698.

A NEW ESSAY on the
NATURE and CURE of the *Spleen*
and *Vapours*.

By *RICHARD BROWNE*,
APOTHECARY in *Oakham*, in the
County of *Rutland*.

L O N D O N,

Printed for JOHN COOKE, Bookseller in *Uppingham*; and Sold by J. and J. KNAPTON,
at the *Crown* in *St. Paul's Churchyard*.

M. DCC XXIX.



TO THE
RIGHT HONOURABLE
BAPTIST
Earl of *Gainsborough*,
Viscount *Campden*, Ba-
ron *Noel* of *Ridling-*
ton, and Baron *Hicks*
of *Ilmington*, &c.

MY LORD,

I Think myself ex-
tremely happy
in having the Honour

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of being first in an Address to your Lordship, at a time when Duty requires my Congratulation upon your Lordship's Arrival at that Age, which admits you to all the Privileges of your high Birth and Peerage, and places you in Publick Life.

Your Lordship is well known to have

em

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employ'd the time of
your Minority in a
commendable Applica-
tion to all the Parts of
polite and useful Learn-
ing, and to have high-
ly improv'd those En-
dowments with which
Nature herself had
happily enrich'd you :
And as these pave the
way to your future
Grandeur, by enabling
you to shine in the
Court and Senate of

England; so that Goodness of Nature, and excellent Disposition of Mind, which you inherit from your noble Ancestors, will give an Additional Lustre to your other Accomplishments, and finish the true Patriot.

With regard to the small Treatise I here humbly offer to your Lordship, I have the
Vanity

[vii]

Vanity to hope it may afford some Amusement to a Leisure Hour, as the Subjects of it are of a curious Nature, and such as fall in with your Lordship's distinguish'd Genius for Musick. If it has the good fortune to meet with your Lordship's favourable Acceptance and Approbation, and contribute to the Preservation of that Life, in

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which your Country
has so great an Interest,
it will abundantly gra-
tify the honest Ambi-
tion of,

My LORD,

Your Lordship's most Obedient,

And most Devoted Servant,

RICHARD BROWNE.



T H E
P R E F A C E.

WHEN I first publish'd
the following Essay,
I industriously endeavour'd to conceal my Name; not only upon account of the humble Opinion I had of the Work itself, but also lest my Age and Station in Life, (it being wrote in the time of my Apprenticeship) might be a Bar to its Acceptance

ceptance with such Readers, as are apt to despise and undervalue every thing that wants the Advantage of some considerable Name to recommend it.

But as the Secret, notwithstanding my Desire to the contrary, has been divulg'd, and I have been desir'd by some particular Friends (whose Judgment and Sincerity I might rely upon) to reprint and acknowledge myself the Author; with their Approbation and Encouragement, I ventur'd upon this second Impression; and under their Authority

Authority hope to skreen myself from the Censures that may be pass'd upon me for it.

I have added to this Edition a Discourse on the Spleen, and Vapours; not only as it is a Disease hitherto not clearly accounted for, but also as I have so particularly recommended Singing, Musick and Dancing, in the Cure of it. I am very sensible that a surprizing Diversity of Symptoms renders the Knowledge of this Distemper vastly difficult to be attain'd to; but nevertheless, as I have

have suppos'd that Singing, &c. contribute to the Cure, only as they help to invigorate the Spirits; I thought it necessary, for the fuller Proof of what I have there advanc'd, to endeavour to shew, that the Essence of what we strictly call the Spleen and Vapours does not, as is commonly imagin'd, consist in an Orgasm, Ataxy, or tumultuous Hurry of the Spirits; but on the contrary, in their defective Secretion.

What Reception these Essays may meet with in the World I know

know not, nor am I very solicitous about it; however, be that as it will, I shall not trespass upon my Reader's Patience, by making an Apology for the Performance; but only, with regard to Men of Learning and Experience, presume to hope that I have not treated these Subjects in such a manner, as to merit their Censure or Contempt.

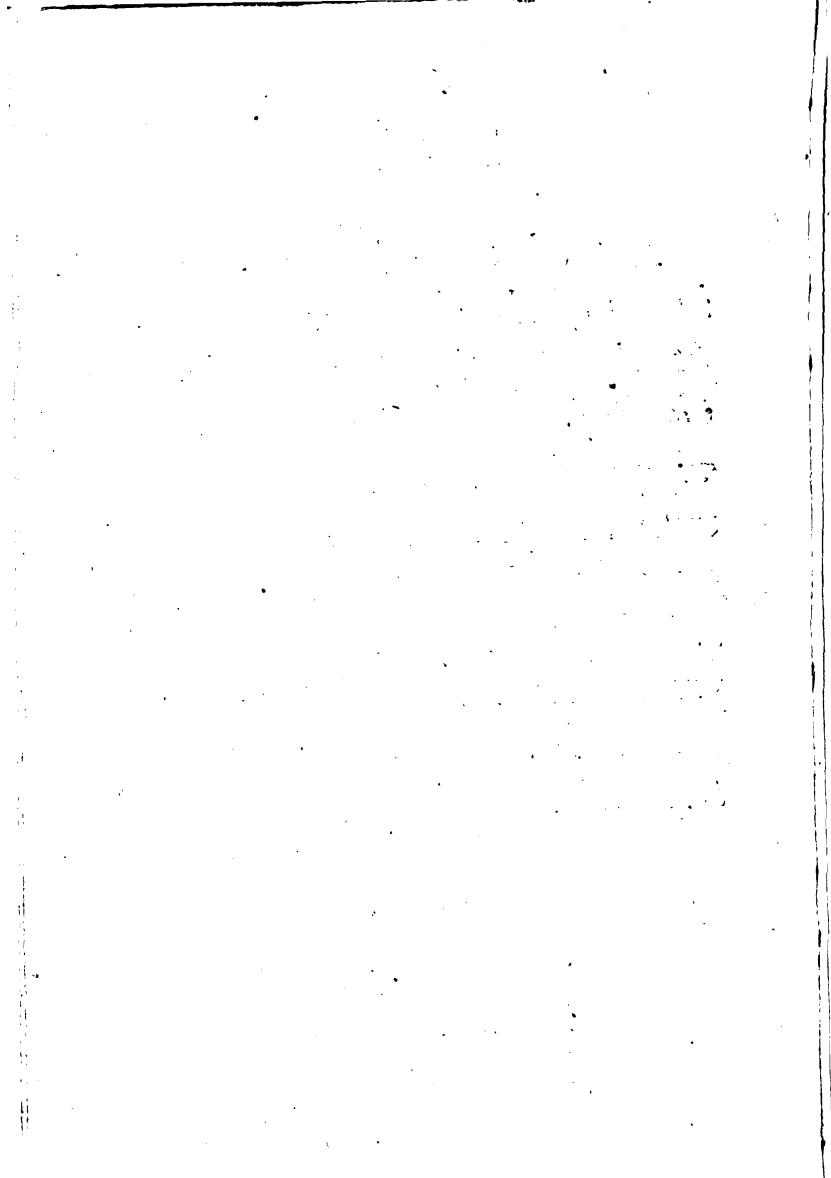
With respect to the Fair Sex, I build my greatest Hopes on their Favour; seeing this Treatise is principally intended for
their

their Good, whose tender and delicate Constitutions render them most liable to the Disease I have enquired into; and in the Cure of which the Divertisements here treated of are of such admirable Service: And on this account I pretend strongly to merit the Recommendation, and even Applauses of their Singing, Dancing, and Musick-Masters, since the following Pages may tend not a little to the Promotion of their Interest.

But

*But whatever be my Fate
in any of these respects, I can
sit down satisfied with the
Goodness of my Intention, ha-
ving undertaken this Treatise
with no other View than the
general Use and Service of
Mankind. I shall therefore
proceed, and treat of these Sub-
jects each in its Order; and
begin with Singing.*







A MECHANICAL
E S S A Y
On the EFFECTS of
Singing, Musick, &c.

CHAP. I.
Of SINGING.



THAT Singing is an Enemy to melancholy Thoughts, and a pleasing Promoter of Mirth and Joy, is what we find by daily Experience;

perience; and this Pleasure arises in proportion to the Fineness and Sprightliness of the Composition, the Tunableness of the Voice, and Modulation of the Ear for Harmony: When all these Perfections concur, 'tis impossible in nature, but that by Singing the Soul should be delightfully ravish'd, and fill'd with gay and enlivening Ideas. All the difficulty is to conceive how any one can be pleas'd with his own Singing, when through a natural Deficiency of the Organs, he is not in a Capacity of modulating his Voice into a Tune, with any tolerable Degree of Exactness; one might reasonably imagine that the Sound would be offensive to him, were there not Instances enough to prove the contrary: It is certain, that if the Voice in any such Person could possibly be

be chang'd into a Musical one, the Pleasure would be vastly more exquisite; but as it is, the Chearfulness and Alacrity of the Mind do sufficiently discover a Complacency in the Action.

Now, for the Solution of this Truth, Paradoxical as it is, let us suppose a Man's Ear to be so fitly modulated, as that by this Instrument of Conveyance the Mind is enabled to form a nice and clear Idea of a Tune; let us also suppose this Composition to be so exact and harmonious, as highly to please the intellectual Faculty: If then at any time he permits his Thoughts to dwell only upon this delightful System of Sounds, and at the same time determines the Motion of the Organs that are ap-

propriated for their Modification ; as they are here suppos'd to be incapable of forming any agreeable Musick, we cannot in reason imagine that any Pleasure can hence arise from immediate Sensation, but only from Reflection upon the pleasing Ideas of the Tune before form'd and treasur'd up in the Mind.

And thus by singing we may cheer and elevate the Soul, though the Voice be harsh and inharmonious; whereas if our Ears are not rightly modulated for the Perception of Harmony, be the Voice never so tunable, no Pleasure can possibly from thence arise; since by this Defect we can form no Idea of Musick, but are as utter Strangers to it,
as

as the deaf Man is to the notion of Sounds.

This Pleasure in Singing admits very much of Improvement; for by frequenting the School of Musick, we not only tune the Organ of Hearing, and refine its distinguishing Faculty, so as to give the Soul a more nice Perception of Harmony; but by the Application of Theory, (as in other Arts and Sciences,) we become more capable of judging of the Truth and Exactness of the Composition: By this means we are enabled to treasure up in our Minds more clear and true Ideas of every mystical Beauty and Embellishment in the Tune; and by raising the Discernment of the Ear into Delicacy, every fine tremulous Oscilla-

tion, which to vulgar Ears would be imperceptible, and thereby much of the Harmony be abated, is distinctly felt and enjoy'd: This Pleasure also may be improv'd in some measure by habituating ourselves to sing; for by Exercise the Organs will gain a greater Strength and Agility in their Action, and thereby be adapted more nicely to modulate the Voice into a Tune.

Having thus shewn how Singing communicates a Pleasure to the Soul, I am now to inquire into its Operation upon the Body; but to render this more clear and intelligible, I shall take leave to lay down the following Propositions.

PROPOSITION I.

*There is a Sympathy betwixt the
Soul and Animal Spirits.*

Demonstr.] This may be prov'd by Observation; for do we not daily see how the Passions of the Mind affect the Body? How Fear produces a Defect of Spirits? and Anger a violent and irregular Motion of them? while on the contrary Hope, Mirth, and Joy run betwixt the two contrary Extremes, and inspire such pleasing, and ravishing Sensations throughout the Body, as promote a plentiful, but not extravagant Secretion of Spirits, and consequently enable the Animal Machine to perform its various Functions to a greater degree of Perfection.

And as the Mind affects the Body, so does the Body the Mind; for when a Man is free from Diseases, he possesses a joyful Serenity of Mind, but when he labours under any severe Distemper he is sometimes impatient and furious, sometimes dejected and melancholy, according to the different Nature of the Disease. In a word, a Defect of Spirits is attended with Pusillanimity; too great a Quantity is the Cause of Impatience, - Rage, Frenzy and Madness; so that through the irregular Secretions, the Patient is by turns fearful or courageous; patient or mad; angry or pleas'd, according to the various and confus'd Impressions thereby made upon his Mind.

PROPOSITION II.

The Motion of the Heart, and consequently the Circulation of the Blood, depend upon an Influx of Spirits; and the greater the Influx is, the stronger in proportion will the Pulse be, & e contra.

Demonstr.] This is evident enough; for if the Nerves of the eighth Pair be tied or cut asunder in the Neck, the Motion of the Heart grows languid, and the Animal in a short time expires.

PROPOSITION III.

Digestion is perform'd chiefly by the Friction of the Stomach, as that is by the Influx of the Spirits in
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to its Muscular Fibres ; the reciprocal Pressure of the Diaphragm, and Abdominal Muscles, do also assist in the same Operation.

The Proof of this is not difficult ; but as it would be too tedious for the design'd Brevity of this Treatise, I must refer the Reader to Dr. *Pitcairn's Opuscula.*

PROPOSITION IV.

The Blood passing through the Lungs is comminuted by the Pressure of the Air.

Demonstr.] In Inspiration the Vesicles of the Lungs are inflated, and the Blood has a free Passage through the Pulmonary Artery ; in Expiration the Air included in the Vesicles

is

is expell'd towards the Passage of the Trachea; but as the Air is an Elastic Body, it cannot be expell'd without pressing upon all the adjoining Parts, and by this Compression the Blood is not only broken and comminuted, and rendered more fluid for Circulation, but is also driven forcibly to the left Auricle of the Heart.

PROPOSITION V.

When the Mercury falls in the Barometer, the Circulation of the Blood is, ceteris paribus, slower; & è contra.

Demonstr.] That the Motion of the Blood is intended or remitted according as the Mercury rises or falls, any one's Observation may prove; and

and this can only depend upon the different Gravity of the Air, whereby the Blood becomes more or less fluid and fit for Motion.

Schol.] The Pressure of the Air may possibly be so great, as to hinder the Circulation of the Blood, as it is when compress'd by an Engine for that purpose; but as that is not natural, and as the free and open Atmosphere in this our temperate Clime, has never been known to be offensive by its greater Gravity, but that the heavier it is, the healthfuller the Weather is observed to be, the Proposition will hold good.

PROPOSITION VI.

In Singing, the Pressure of the Air upon the Lungs is greater than in common Expiration.

Demonstr.]

Demonstr.] In Singing we plainly discover that the Air is expell'd from the whole Capacity of the Lungs, with greater force than in common Expiration; but the Air being an elastick Body, as I before said, cannot be expell'd without pressing upon the Parts adjoining, and as the Force of Expulsion is greater or less, so likewise is the Pressure of the Air. And this may be still encreas'd by straitening the Passage of the Glottis, (as it is when we form an acute Sound) for by this means the Air cannot escape so freely, and thereby its reaction upon the Lungs must be greater. That the Pressure of the Air by this Action is greater than in common Expiration, we may thus also prove; since by Singing we find an encrease of the Pulse,

Pulse, and since by *Proposition V.* the Pulse, *cæteris paribus*, rises in proportion to the Gravity of the Air.

By the Help of these Propositions I shall endeavour to demonstrate by what Mechanism human Bodies enjoy the pleasing Effects of Singing; and at the same time shew in what Cases it may be prejudicial.

We may observe that Singing, Mirth, and Joy are Concomitants: thus when our Minds are fill'd with cheerful and enlivening Ideas, we naturally discover our Gayety of Temper by Singing with the Voice of Gladness. On the contrary, when we are sad, and by sympathy our Spirits are drooping, nothing can be heard but Sounds modulated into a
dull

dull melancholy Tone. To remedy this Disease of the Mind, Singing seems to be particularly adapted, for by this Action we may possibly strike the Ear so agreeably as to give a Pleasure to the Soul, and at the same time we assemble the Ideas of the Tune, and reflect upon its Beauty and Harmony: By this means those dark gloomy Ideas, to which our Thoughts had been too long attentive, will be chac'd away, and a joyful Serenity of Mind ensue: The Spirits also, that were before drooping, by Sympathy per *Prop. I.* will be actuated and enlivened, and the Solids brac'd up to their proper Standard; and in short, the Body that before was like a lifeless Log, or a Piece of inanimated Clay, will now be render'd brisk and active, and

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Sensation and Motion acquire their utmost Perfection.

Thus we may see what a vast Influence Singing has over the Mind of Man, and with Pleasure reflect on its joyful Consequences, and at the same time be amaz'd that it should be a Diversion or Exercise so little practis'd, since the Advantages that may be reap'd from it are so very numerous. Whether the Disuse of it proceeds from the Ignorance of its Effects or not, I can't determine; but this I'm certain of, that it's difficult to persuade any one to sing that is of a melancholy Disposition, because in such a Case the Mind is chain'd down to a particular way of thinking, and does not affect a Succession of Ideas, especially of such as

are gay and enlivening. Others with less reason being conscious of their not having a musical Voice, wholly forbear such an useful Diversion, because they know that their Singing will be unacceptable to others; as if their own Health was not to be preferr'd to the Pleasure of another. But, not farther to expose such bashful Folly, let us pass on to shew what Alterations Singing may produce in the Animal Machine; and first, how it acts on Persons in Health, and how it may tend to that valuable Blessing.

If Singing, as I have before abundantly prov'd, has such an Influence over the Mind of Man, as to raise it to a degree of Mirth and Joyfulness;

ness; and if (as by *Dem. Prop. I.*) there is then a plentiful and regular Secretion of Spirits, and if (as by *Prop. II.*) the Motion of the Heart, and consequently the Circulation of the Blood depends upon the Influx of Spirits, Singing then must certainly be the Cause of a full and strong Contraction of the Heart; whereby we may suppose that the Blood will be thrown out with a force sufficient to conquer all the Resistances it may meet with in its Passage through the Body, and be so comminuted and divided as not easily to run into Cohesions, and be obstructed in the Capillaries: The Motion and Fluidity of the Blood are still farther encreas'd by Singing, for by *Prop. VI.* the Pressure of the Air is then greater than in common Expiration; and by *Prop.*

Prop. IV. the Blood is comminuted in the Lungs by the Pressure of the Air, and by *Prop. V.* the greater the Pressure of the Air is, the stronger and quicker will its Circulation be; and therefore Singing can't but wonderfully conduce to the Preservation of our Healths, as it thus promotes a free Circulation.

To a plentiful Secretion of Spirits also do the Fibres of the Body owe their Springiness and Elasticity; and the Necessity of their being so, may be learn'd from the ill Consequences of their contrary State, for by their Relaxation the Blood in general will be depriv'd of the Attrition and Elastick Impulse of the Solids, and by that means be impeded in its Circle, and run into Cohesions,

and thus various Diseases may be form'd.

The Learned *Boerhaave* has plainly shewn that the Solids of our Body are daily nourish'd and repaired by the Animal Spirits; therefore as Singing tends to promote their Secretion, and invigorate their Motion, it may in some measure be said to be serviceable in the Performance of so important an Operation as that of Nutrition. Furthermore, since (by *Prop. III.*) Digestion is perform'd chiefly by the Friction of the Stomach, and since that is owing to the Influx of the Spirits, Singing must mightily conduce to the Dissolution of the Aliments, and Prevention of Crudities and Indigestions, the ill Consequences of which are too well known

known to want Demonstration: The Diaphragm also and abdominal Muscles, by this Exercise compressing the Stomach with more force than ordinary, give more Assistance to the Stomach in comminuting the Food into Chyle, and rendring it fit for its Translation into the Blood.

Singing, when not rightly us'd, is often prejudicial to the Lungs, and brings on fatal Diseases; I shall therefore, in order to guard against its bad Effects, endeavour to shew the different Degrees of the Pressure of the Air occasioned by our differently raising and modulating the Voice, and by this means any Man may judge how to adapt the Pressure of the Air to the Strength and Elasticity of his Lungs.

The Voice then is depress'd or rais'd according to the different Force with which we expel the Air from the Bronchia; and the greater that Force is, the louder is the Voice. The Gravity and Acuteness of the Sound depend upon a swift or slow Repercussion of the undulating Air, according as the Capacity of the Glottis is contracted or enlarg'd; for as the Cartilaginous Sides, which form the Chink, can open or shut it by innumerable ways, as the Muscles plac'd here act variously, so different sorts of Sounds are emitted; and thus by straitening the Passage of the Glottis, we encrease the Celerity of expelling the Air, and form an acute Sound: on the contrary, upon a greater opening of the Chink and slower

Expulsion and Undulation of the Air does the Gravity of the Voice depend.

Now from *Dem. Prop. VI.* it plainly appears that the Pressure of the Air encreases in proportion to the Force with which the Air is expell'd from the Lungs, and the straitness of the Passage of the Glottis, & *è contra*; and therefore as the Degrees of Pressure may be thus vary'd, we ought to sing high or low, gravely or acutely, &c. according to the suppos'd Strength and Stability of our Lungs.

It would certainly be very improper for any Person whose Lungs are weak, to sing loudly or acutely, for by that he would run the hazard of a Disruption of the Bronchia, the

Consequence of which might be fatal: whereas if any such Person was to sing in a moderate way, he would not only strengthen and confirm the Tone of the Fibres by such agreeable Exercise, but would also by the Application of Motion prevent Cohesions and Obstructions in the Capillary Vessels.

We plainly find, that by frequently using any particular Motion of any Part of our Body, that that Part by moderate Exercise gains Strength and Agility in its Action; with the same Reason then we may suppose the Lungs to be in the same manner affected. And thus we see that the bad Effects of Singing proceed only from its irregular Use; so that we have reason to believe that, if it be but rationally apply'd,

apply'd, no other Exercise whatever can more contribute to the Preservation of our Health.

I shall now proceed to shew in what Diseases this Diversion may be advantageous, and in what prejudicial.

In all Disorders in general where the Motion of the Solids and Fluids are rais'd above their natural Standard, Singing is not indicated, because it promotes the Secretion of Spirits, which are already too exuberant; braces the Fibres, which are already too tense; and increases the Velocity of the Blood's Motion, which already circulates with too rapid a Stream. But more particularly will it be injurious in Pleurisy, Peripneumonys, and other inflammatory

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tory Disorders of the Lungs because
 of the immediate Action upon that
 Organ : But nevertheless in a Periodical
 Asthma, if we exercise our Lungs
 by Singing in the Intervals, 'tis pro-
 bable, from the Reasons aforementioned,
 that it may prevent a Return, or at
 least very much alleviate the
 Paroxysm.

I shall now consider the Use of
 Singing in those Diseases, where the
 Solids and the Fluids are depress'd
 beneath their natural Standard : And
 under this Division a Pthisis more e-
 minently appears to be a Disease in
 which this Exercise will be highly
 improper ; for the Texture of the
 Bronchia being lax, and the Lungs
 ulcerated, if the Pressure of the Air
 be increas'd beyond what is natu-
 ral,

ral, 'tis probable that the sad Catastrophe of Blood-spitting may be the Consequence. In most other Pulmonary Disorders will it also be inconvenient: But in an Asthma, where we suppose the Bronchia to be obstructed with thick mucilaginous Juices, arising from Indigestions, Cachexies, or a viscid Texture of the Blood, there Singing will be of service, as it may help to attenuate the Cohesions, and render them fit for Expulsion, and by comminuting and propelling the Fluids, and causing a freer Circulation in that Part, such a fresh constant Supply of Viscidities will be prevented.

When the Tone of the Stomach is relax'd, and we thereby find a remission of the Appetite and Digestion,

gestion, Singing will very much contribute to the Cure, as it causes a plentiful Influx of Spirits, and by them restores the Spring and elastick Force of the muscular Fibres, and encreases the Action of the Diaphragm and Abdominal Muscles.

In Nervous Disorders, such as the Hypochondriack, Hysterick, and Melancholick Affections, Singing will be much conducive to the Cure: For as in these Diseases the Mind is fill'd with gloomy dejecting Ideas, and the Body labours under a Deficiency of Spirits, and as by Singing we may possibly strike the Ear so pleasingly as to affect the Mind, and divert our anxious Thoughts, by the Succession of the brisk and lively Ideas of the Tune; we may certainly by this means

means cheer and elevate the Soul, and by Sympathy invigorate the Motion of the Spirits.

In all other Chronical Diseases, such as a Cachexy, Jaundice, &c. Singing, though it cannot much be depended upon, may nevertheless in some measure contribute to the Cure, as it promotes Digestion, and a free Circulation, as I have before proved.

I shall now only add, that I am far from recommending Singing as the grand and only Preservative against Diseases; for that would be too plain an Absurdity, seeing five of the Non-naturals may produce Disorders towards the prevention of which, Singing cannot very much conduce: I have only endeavour'd to demonstrate

strate how it may forward Digestion, the Circulation of the Blood, and Secretion of the Spirits, and by that means enable the Body to support it self in the Execution of its various Functions. Nor would I be thought to assert, that it is alone a sufficient Remedy for those Diseases I have so much commended it in; on the contrary, I think it entirely necessary to have recourse to Medicines, proper in such Cases, the good Effects of which, Singing may promote, as it is an Exercise so agreeable and entertaining.

Let it be here also understood, that though the common and ordinary Effects of Singing, are, as I have before shewn; yet nevertheless the Singing of some certain melancholy
 2 languishing

languishing Tunes, as an Exception to the general Rule, does, instead of elevating the Spirits, rather tend to their Depression; and therefore in order to enjoy the pleasing and profitable Effects that I have proposed in Singing, we are to make choice of such Tunes, as having Life and Vigour in their Composition, are adapted to cheer and elevate the Soul, and invigorate the Motion of the Spirits.



C H A P. II.

Of M U S I C K.

MUSICK we find has so transcendent a Power over us, as to raise or depress the Passions of the

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the Mind, rouse or calm the Motion of the Spirits, according as the Sounds differently modulated, differently touch the Auditory Nerves: But in order to shew this more clearly, it will be necessary first to consider the Nature of Sounds, and their Manner of Conveyance.

Sounds then may be suppos'd to arise from small Vibrations, or tremulous Motions of the Air, and to be propagated in Undulations; and these being collected by the external Ear, are from thence carry'd through the auditory Passage to the Drum, on which beating, the four little Bones that are in the Barrel are thereby mov'd, and they move the internal Air; which, according to its Degree of Motion, makes an Impression up-
on

on the Auditory Nerves in the Labyrinth and Cochlea ; so that according to the various Refractions of the external Air, the internal Air makes various Impressions upon the Auditory Nerve, the immediate Organ of Hearing ; and these different Impressions represent to the Mind different sorts of Sound.

Now, Musick is only a Composition of Sounds, founded upon a Concordance of Tones ; and the more exact and true the Proportion of Notes is, the more harmonious is the Tune, more grateful to the Ear, and more pleasing to the Mind. And as Musick thus depends upon a nice Combination of Sounds, so, in order to give the Mind a clear Perception, does it require a more

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exquisite

exquisite Configuration of the Ear, than is necessary for the Conveyance of simple Sounds. For there are those who hear as clearly and distinctly as others, but are nevertheless, thro' the want of a fine displaying of the Auditory Nerves, insensible of the Charms of Musick; and can form in their Mind no Idea of Harmony, but are as utter Strangers to it, as he that is born blind is to the Notion of Colours.

By what Variation of Notes and Time in playing, Tunes may be indefinitely vary'd, I leave to the Consideration of those who make it their Business to search into the Depths of this celestial Science: It will be enough for me, if from this Variation

I can discover, whence it is that by Musick we are differently affected.

The Pleasure that we feel from the hearing of a well-play'd Consort does, I suppose, immediately arise from the agreeable Percussion of the vibrating Air upon the Auditory Nerves; and as the musical Instrument is differently touch'd, so different Sorts of Sounds are emitted, which according to the Degrees of the Oscillatory Motion of the Air produce differently pleasing Sensations in the Mind, and thereby variously influence the Motion of the Spirits.

Now it is evident, that if the Strings of a Fiddle be struck swiftly and boldly, the Vibrations of the Air must of necessity be swift, short, and bold,

whereby the Nerves will be briskly agitated, and give a brisk and lively Pleasure to the Mind, which by Sympathy will invigorate the Motion of the Spirits, and communicate a correspondent Sensation through the whole Machine.

On the contrary, by the soft flow languishing Strokes of a Fiddle, the Nerves will be so finely and delicately touch'd, and the Sensation be so exquisitely pleasing and ravishing, as to cause the Spirits to flow back in gentle Undulations.

And that this Hypothesis of the ebbing and flowing of the Spirits, according as the tremulous Vibrations of the Air are brisker and quicker, or softer and slower, is no vain empty Speculation,

tion, but grounded upon Reason, will evidently appear from Experience.

For in a Tarantism, where the Patients lie as in an Apoplexy, it is observed that however differently their Ears are modulated for this or that Instrument, this or that Tune, they all agree in this, to have the Notes run over with the greatest Swift-ness imaginable, by which the Air being briskly and smartly vibrated, the Spirits flow with such Vigour and Activity into the Muscles, as strongly to incite them to dance.

On the other hand, so far is soft slow Musick from actuating and invigorating the Body, as that on the contrary it is found, that if, after they are excited to dance by brisk

Musick, a soft Adagio be play'd, their Spirits cease to flow with their former Vigour; whereby the Action of Dancing is immediately suspended, and the Body would languish and fall down, was it not to be timely reliev'd by the sprightly Strokes of the Allegro.

For the Proof also of these different Effects, I'll appeal to any one who has an Ear for Musick, and who has given himself the Pleasure of hearing the fine Adagio and Allegro Parts in the *Italian* Operas, whether by the ravishing Softness and Melody of the first he has not found his Spirits by Excess of Pleasure to flow back in gentle Undulations; and whether by the brisk and lively Vibrations of the last, he has not felt
fresh

fresh Life and Vigour flow from the persuasive Sound of such a sprightly harmonious Comfort.

And that this different Operation of Musick does depend upon the different Degrees of the Percussion of the vibrating Air upon the Nerves, we may suppose by reasoning from Analogy: For we find that by titillation a gentle easy Languishing is diffus'd through the whole Machine; we find also that by volatile Effluvia, the Olfactory Nerves may be so agreeably stimulated, as not only to incite the Motion of the Spirits thither, but also to invigorate the whole nervous System; and therefore why may we not suppose the Auditory Nerves to be affected in the same manner by the Force and Energy of

Musical Sounds? Especially as the Ear, for many Reasons, seems to be so curiously form'd, purely for the Enjoyment of Harmony.

And thus it is evident, that an Allegro by short, quick, and brisk Impressions upon the Auditory Nerves communicates to the Mind a lively pleasing Sensation, fills the Soul with gay and chearful Ideas, and surprisingly invigorates the Motion of the Spirits.

On the contrary the soft languishing Trills, and melodious Strains of an Adagio touch the Nerves so finely, and inspire such ravishing Sensations, as that the Soul by a sweet Excess of Harmony is ready to dissolve in Pleasures.

I shall now consider how Sounds differently modulated may tend to the Prevention of Diseases.

That Excesses of our Passions, by disordering the Spirits, may bring on Diseases, is what no body can deny; and thus we find that Anger, Rage, Impatience, &c. are attended by a violent and irregular Motion of the Spirits; on the contrary, a Defect of Spirits is the Consequence of Fear, Melancholy, Despair, &c. each of which Excesses may produce Diseases peculiar to the Affection of the Spirits.

For the Prevention therefore of the first, a soft Adagio will be most convenient, as by its languishing
 Strains

Strains it seems to be more particularly adapted to soften us into Temper; on the contrary, when the Soul is dejected, nothing can be more conducive to its Elevation than a brisk Allegro.

If we search into History, we may be plentifully furnished with Instances of the wonderful Power of Musick in raising and depressing the Passions; but most of 'em, in my Opinion, seem to be too far stretch'd to be depended upon: however I shall just take notice of two or three.

That the Fierceness of *Achilles's* Nature was allay'd by playing upon the Harp, and that *Timotheus* by Musick could appease the Fury of *Alexander*, and reduce him to Temper

per and Reason, is what may be believ'd; but that Musick should raise him to Anger, or that by the same means King *Eric* should be so enraged as to strike all his Friends that were about him, is entirely groundless, as the Charms of Musick are too pleasing ever to excite such exorbitant Passions. A brisk Allegro will make a Man all Life and Vigour, and raise him to the highest degree of Mirth and Gayety; but it never can transport him with Rage or Fury.

But to return, let it here be considered, that tho', to sooth the Passions, it is necessary to have recourse to an Adagio, yet nevertheless, if play'd alone to Persons entirely free from Disorders, it may, for Reasons
aforesaid,

aforefaid, fo enervate the Body, as in fome measure to tend to the Production of Difeaſes.

But if the Softneſs of this be often reliev'd by the Chearfulneſs and Vivacity of the Allegro, we may not only by ſuch delightful Transitions prevent any bad Effects, but by enlivening the languiſhing Sweetneſs of the one with the Sprightlineſs of the other, fo pleaſingly affect the Mind, as to cauſe a plentiful and regular Secretion of Spirits. And thus by an agreeable Contrast of Muſick we may not only contribute to the Prefervation of our Healths, but at the ſame time indulge ourſelves in the Enjoyment of one of the greateſt Pleaſures on Earth.

It will now be necessary just to take notice of such Kinds of Musick as are a sort of Composition of the Extremes of bold, swift, soft, and slow: And of these in general it may justly be suppos'd, that they all, more or less, by communicating a lively Pleasure to the Mind, tend to promote the Secretion of Spirits, and by that means, as was shewn in Singing, may assist Digestion, the Circulation of the Blood, &c.

I now come to consider the Power of Musick in the Cure of Diseases; and here also History furnishes us with Instances of many wonderful Cures; but they are all so extravagant and inconsistent with the Operation of Musick, except what is said of Melancholy and Madness, that I shall
not

not trouble the Reader with a Relation.

It is certain that Musick may very much contribute to the Cure of many Diseases; but I shall only recommend it in such as more immediately depend upon the Spirits: For as by the Energy of Musick the Spirits may be either rouz'd or calm'd according to the different Modulation of the Sounds, its Use in nervous Diseases does, I think, evidently enough appear, especially in those which discover a Dependance on the Mind; such as the Spleen, Vapours, Melancholy and Madnes.

The Spleen or Vapours, whether the remote or original Cause be in the Mind or Body, is a Disease in
which

which both are sufferers; the Spirits are vastly deficient, and the Soul is clouded and overcast with gloomy and dejecting Ideas. In this Disorder therefore a soft Adagio wou'd be very improper, as by its melodious Strains it only tends to sooth our Melancholy, and bring a languishing upon the Spirits, that are already drooping: On the contrary, the Airy sprightly Strokes of an Allegro make such smart and quick Impressions upon the Auditory Nerves, and thereby communicate such brisk and pleasing Sensations to the Mind, as to excite a lively Turn of Mirth and Joy, and diffuse a correspondent Vivacity thro' the whole nervous System.

And by this Method we may suppose it was that *David* relieved *Saul* in

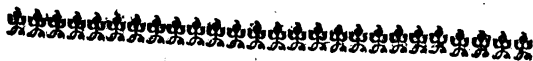
in a Fit of the Spleen ; with which Distemper, in a high degree, it is far more probable he was troubled, than with an evil Spirit ; and this will evidently appear from a joint Consideration of the Circumstances he labour'd under, the Manner of Cure, and the Ignorance of the Ancients in accounting for Nervous Diseases.

In the melancholick Affection the Soul and Spirits are still more dejected, and therefore for the same Reason it requires the briskest Allegro imaginable : On the contrary, in Madness, a soft languishing Adagio is only to be admitted, as by its melodious Strains it is most adapted to sooth a Mad-Man's Phrenzy, and charm him into Attention.

A brisk Allegro may undoubtedly be of prodigious Service in the Cure of Apoplexies, Lethargies, &c. since in those Diseases the Spirits are but too plainly deficient, and since this kind of Musick is so eminently powerful in rousing and invigorating their Motion. And that by this means we may contribute to the Cure of those Diseases, is not only probable from the above Reason, but also from the Analogy they bear to the Circumstances of Persons bitten by a Tarantula, that Prodigy of Nature, and which Musick so effectually cures. Some indeed will say that there is by Nature implanted in the Tarantula an occult Antipathy against our animal Spirits, and that by Nature Musick was appointed a Speci-

sick in expelling the Virulency of the Poison. But how much do such Suppositions expose their Ignorance? As if the Poison did not mechanically act on the Body; or as if the Musick, by producing the mechanical Alterations, did not promote the Expulsion of the Poison. However it is certain, that those who are bit by this eight-ey'd Spider of *Apulia*, (a full Account of which is given us by Dr. *Mead* and *Baglivi*) fall to the ground as in a Fit of an Apoplexy, and continue in that Posture, till, by the sprightly Strokes of an Allegro Consort, the Spirits are actuated and enliven'd; by which the Patients again recover their Sensation and Motion, the elastick Force of the Fibres is encreas'd, and the Heart more frequently and strongly contracted for
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the Comminution and Attrition of the Fluids; and that the præternatural Cohesions which were generated in the Blood, may be more compleatly dissolv'd, they are by a plentiful Influx of Spirits into the Muscles incited to dance, which always finishes the Cure: But of this in the next Chapter.



C H A P. III.

Of D A N C I N G.

M*edicina Gymnastica* has in all Ages justly been of great Esteem in the Cure of Chronical Diseases, and still continues its Reputation, as its Usefulness is confirm'd by daily Experience.

My Design is here to shew, that Dancing, take one Case with another, tho' an Exercise scarce ever applied to the Cure of Diseases, is nevertheless not inferior to any whatever, provided it be us'd with Discretion. And in order to this, as Riding is generally suppos'd in such Cases to be the most beneficial of all Exercises whatever; I shall consider that, and the Action of Dancing comparatively, that thence the good Effects of the latter may the more evidently appear.

Now if we do but compare the Exercises of Riding and Dancing, we shall find that the Differences of their Effects consist only in five different Degrees of Motion and Heat, that are
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consequent on their respective Actions; and therefore in all Cases we are to adapt the Exercise to the Strength and Constitution of the Patient: And since in Riding there is not so great an Expence of Spirits in the Motion of the Muscles, as in Dancing; and since by a less Degree of Motion the Blood is not so much heated and rarefied, we must allow it the Preference in whatever Diseases the increas'd Celerity of the Blood's Motion is found to be injurious, or whenever the Patient is brought so low, as that his Strength will not admit a more violent Exercise.

But to particularize in what Diseases each are preferable, let us begin with Riding; to which the Preference must needs be granted in

Consumptions, and Heſtick Fevers, ſince it gently ſuccuſſates the Bowels, and exerciſes the Muſcles of the Abdomen, as well as Dancing, if not more, and by that means helps Di-geſtion and Chylification; whereby a freſh Supply of Crudities and Indi-geſtions in the Blood may be prevented, which otherwiſe would be oppreſſive to the Lungs, and create a Diſturbance in the Animal OEconomy. And then it is free from that great Motion and Heat, which Dancing produces, and which would encrease the Heſtick, and make the Diſeaſe almoſt intolerable; as alſo from that vaſt Expence of Spirits, which muſt of neceſſity attend the Action of Dancing. But as Riding is preferable in the aforeſaid Diſorders, ſo Dancing excels in the Cure
of

of the Spleen and Vapours, and melancholick Affection; in Agues, and in a Suppression of the Catamenia.

In the two first of these Diseases, the Spirits are very much deficient, and the Blood is found to be of a viscid Texture; Dancing therefore in such a Case, must be far beyond Riding, not only because by a more frequent Attrition of the Muscles it more powerfully attenuates the Blood, and thereby tends to promote the Secretion of Spirits; but also as by the prevailing Charms of Musick, &c. that attend it, (without which Dancing would be insipid) the Mind is fill'd with gay enlivening Ideas, the Spirits flow with Vigour and Activity through the whole Machine, and the depress'd Motions of the Solids and

Fluids are thereby rais'd to a Degree of Perfection.

Dancing, 'tis probable, may very much conduce to the Cure of Agues, as it is so effectual in comminuting the Cohesions of the Blood, to the Obstruction of which in the Capillary Vessels this Disease is owing, as the incomparable *Bellini* has fully demonstrated. If any one will be so pleas'd as to dance for Trial, I wou'd advise him, (as it seems to be the most rational way of proceeding) to begin about two Hours before the Paroxysm is expected, which perhaps may prevent it, or at least the cold Fit will be sooner over, and the Lensor be more freely dissipated through the Pores of the Skin.

In a Suppression of the Catamenia, when it is caus'd by a Viscidity and Lentor of the Blood, Dancing, for Reasons aforementioned, can't but be of very great advantage: And this more frequently is the Cause than an Inanition or the Resistance of the Uterine Vessels; but in these also it will be serviceable. For as to the first, it must needs be granted, that Exercise is good, in assisting Digestion, and rendring the Aliments more fit for their Mixture with the Blood, which probably will increase its Quantity and Fluidity. Then as to the second, if Dancing (as certainly it does) so attenuates and rarefies the Blood, as to make it possess more Space, the Uterine Vessels will in Proportion be more distended, and their Disruption be the sooner accomplished.

plished. Besides, since the Heart at such times is more strongly and frequently contracted, quicker and stronger will the Momentum of the Blood be against the Sides of the Vessels, and so be more enabled to conquer their Resistances. It is true, these Remarks are only grounded upon Speculation, and not upon Experience; but since they are so agreeable to Reason, and confirm'd as it were by a Demonstration, there's no body, I presume, will be so hardy as to deny the Truth of 'em. And here too, I wou'd have the Reader be inform'd, that I don't pretend to say, that Dancing is the sole Remedy in these Diseases; on the contrary, I only propose it as a good and proper Exercise, which, like all others in Chronical Diseases, may conduce to the
Cure,

Cure, but not of their own Power alone effect it. A sufficient Proof of the aforesaid Effects, is the latter Part of the Cure of Persons bitten by a Tarantula; who being incited to dance by the sprightly ravishing Sound of Musick, they by such Motion produce in themselves such a Heat, and Rarefaction of the Blood, by which, and by the strong Attrition of the Muscles and Fibres then actuated, the præternatural Cohesions are dissolv'd, and the Blood so finely comminuted and divided, as to acquire a Degree of Fluidity sufficient for a free Circulation, and Secretion of Spirits; by which, and by the Musick's rousing, and invigorating the Spirits, the Heart, another Auxiliary, is more strongly and frequently contracted by *Prop. II.* and the Blood
by

by such powerful and reiterated Impulses still more intimately attenuated, and the Lensor produc'd by the Malignity of the Poison render'd more fit to be carried off by the Cutaneous Pores.

There are indeed some certain Chronical Diseases where neither of these Exercises are to be used; but in all such Disorders, as will allow of Action, Dancing, I believe, will be found to be equivalent, if not preferable to Riding, provided the Patient's Strength will but admit of it; since it attenuates the Humours more, and causes a freer Circulation, by which Augmentation of its Fluidity consequent on the greater Motion and Heat, and more frequent Attrition of the Muscles than exercis'd, the
Animal

Animal Machine will secrete its different Humours in a greater Degree of Perfection ; and therefore as Cachexies, Jaundice, and such like, are owing to Viscidities and undue Secretions, Dancing must certainly be better than Riding, in that it attenuates the Humours more, and forwards their respective Excretions.

Lastly, As to promoting Digestion and Chylification, Dancing seems to be full as useful as Riding ; for tho' we should grant that the Succussion of the Bowels is rather greater in Riding than in Dancing, and that the Diaphragm and Abdominal Muscles are somewhat more strongly and frequently compress'd upon the Stomach ; yet I can by no means be inclin'd to give it the Preference : For

if we do but consider that Dancing does not only forward and assist Digestion by the Application of Motion, but that at the same time its good Effects are promoted by the Power and Energy of Musick, we may reasonably imagine that the Differences are brought to an Equilibrium at least, if it may not be granted (which upon comparing their Operations, I think, may justly enough be done) that Dancing does preponderate.

Having thus cursorily treated of the Effects of Dancing, it will be very necessary to make some Observations on the preposterous Use of such an agreeable and entertaining Diversion, which, by robbing us of its good Effects, is generally found to be the Cause of a Disease, rather than

than a Prevention. For the way is now, to begin to dance, about the time when they should go to rest, and give over, when they should rise; and by this means they do not only deprive themselves of a Night's Rest, by which they should have been recruited with a fresh Stock of Spirits for the succeeding Day; but at the same time, by the almost continual Motion of most of the Muscles of the Body extravagantly spend the remaining Stock: So that the next Day, through the want of a sufficient Quantity of Spirits, the Body is dull and unactive, the Motion of the Heart and Circulation of the Blood languish; they feel a sinking at the upper part of the Stomach, (where the Plexus of Nerves is display'd) and a Remission of the Appetite and Digestion.

Add

Add to this, that by too long a Continuance of such an Exercise, the Blood is so heated as to throw off an excessive Quantity of Liquids in Perspiration, by which Encrease of Evacuation the Spirits are exhausted, and a Diminution of muscular Motion ensues, as Experience shews us: For in Winter, when the Perspiration is less, the contractile Force of the Fibres is much greater than in Summer, when the Perspiration is more, and our Strength is then greater, *cæteris paribus*, than in Summer. And this seems to be the only Reason why our Appetite and Digestion are then also better, since by *Prop. III.* Digestion is perform'd chiefly by such Motion: From whence this Corollary may be drawn, *viz.* that it is better to dance in Winter than in Summer. And

And thus from the Premises we may learn what a Disorder the irregular Use of Dancing produces in a human Body; whereas if we were to dance in a due and regular time, we might easily be made sensible of its good Effects. The most convenient time for this Exercise then, I suppose to be at such a Distance from Dinner, as that thereby we mayn't precipitate Digestion, and that it ought to be intended or remitted according to the different Nature of the Disease, Strength, and Constitution of the Patient. I believe indeed, that to dance an Hour or more at a convenient time after every Meal, according as we find ourselves in a Capacity, wou'd be the most beneficial Method in most Cases; but then it is so very inconsistent with the com-

mon Schemes and Opportunities of Dancing; that I choose rather to comply with the Humour of the Age, as nearly as I can with Reason, than prescribe such a Course of Action, as in all Probability will never be put in Practice.

In such Disorders, wherein it is judg'd necessary to encrease the Blood's Velocity, and promote Sweating, this Exercise is to be continued for a considerable Space of time without any Intermision; and immediately after that, it will be requisite to go to Bed. In others again, as in the Spleen and Melancholy, a long Continuance of this Exercise would be highly improper, for Reasons aforementioned; in such Cases the Action ought to be so short, and the Intermissions

missions so long, as that the Patient be neither tir'd nor much inclin'd to sweat, and that thereby the profuse Dissipation of the sinking Fund of Spirits be prevented: And thus by an agreeable Succession of Motion and Rest, we may not only guard against the bad Effects of Dancing, but at the same time contribute to the Cure by moderately attenuating the Blood, and promoting the Secretion of Spirits.

As for Dancing, to Persons in Health, I shall just take leave to observe, that we by no means ought to make a Toil of our Diversion, by making it one continued Scene of Action, lest we exhaust the Spirits and enervate the Body, but to sweeten and relieve the active Pleasure by

frequent Intervals of Refreshment; by which not only the bad Effects which must of necessity be the Consequence of a long uninterrupted Succession of Motion will be entirely prevented, but the Body by such agreeable Exercise will gain Strength and Vigour in its Actions, and be more enabled to preserve and keep up its OEconomy.

Let it here also be observed, that, in order to enjoy the profitable, as well as pleasing Effects of Dancing, we neither ought to begin this Exercise too soon after Dinner, nor to extend it so far as in any measure to deprive us of our wonted Rest. And by this Method none of those Disorders that are consequent on irregular Dancing will attend us; but
on

On the contrary we shall find that after a Night's Repose the Spirits will briskly actuate and invigorate the Body, the Blood will flow on in a full uninterrupted Course, and in short the whole Animal Machine will be render'd more fit for the Execution of its various Functions.



C H A P. IV.

Of the Spleen and Vapours, or Hypochondriack and Hysterick Affections.

IT was the Opinion of the Ancients, that the Spleen was the Seat of this Disorder in Men, as the *Uterus* in Women, and that consequently this Disease in the two

Sexes was really and essentially different.

But this ridiculous ungrounded Notion has long since been confuted; and tho' Modern Writers are pleas'd to continue the Use of these improper distinguishing Names, it is not that they suppose any essential Difference, but probably in compliance only to ancient Custom.

However, I think it undeniably evident, if we strictly observe and examine into the Rise and Progress of the Symptoms, that there is no Difference in the essential Properties of the Disease, but only in the different Degrees of Intenseness; and therefore these different Denominations are only imaginary Distinctions,
and

and really imply but one and the same Disorder.

It is true, we may observe the Fair Sex more frequently labouring under this Disease than the Men, and more violently afflicted with Convulsive Disorders and Confusion of the Spirits: But this does not so much prove a Diversity in the Nature of the Disease, as in the Constitution of the Body, whereby they are inclin'd to different Degrees of Complaints. And in what Particular this Difference consists, may be easily known; for since a weak and lax State of the Solids is essential to this Disorder, as is evident from the Symptoms; and since in the Fair Sex, a peculiar Weakness, Tenderness, and Delicacy is observable in the Frame and Texture of their Fibres; it may

with just Reason be suppos'd, that hence it is that they are more liable to this Disease, and more severely suffer under a sad Complication of Symptoms.

But though I grant that in this Disease the Solids are relax'd, or let down beneath their natural Standard; yet at the same time I only suppose that to be a Consequence of a prior Disorder in the Spirits. For tho' from the Original Formation of the Body, there be a manifest Difference in the Stability of the Fibres, yet after they are once form'd, 'tis probable that all the Alterations, or Changes of Tone they afterwards undergo, do principally depend upon this Liquid of the Nerves: Nay, even this original Difference may be accounted

counted for the same way ; since according to *Malpighius's* Observation, the Brain and Spinal Marrow are the Basis of the whole Structure in the Embryo, from whence all the other Parts are deriv'd.

It would be here necessary, in order to prove what I'm about, to give some Account of Nutrition ; but for that I must beg the Reader to consult the learned *Boerhaave's* Institutions ; in which, notwithstanding some few trifling Objections that have been rais'd, he has render'd it very probable that Nutrition entirely depends upon the nervous Fluid : However from that notable Instance of any Part losing its nourishment, when by any means the nervous Juice is intercepted, besides many other Reasons,

sons,

sons, it is evidently certain, that without the Influence of the Spirits, Nutrition wou'd entirely cease: and indeed no other Fluid in the Body can be suppos'd to be so well adapted to this use; as Nutrition seems to be the most refin'd Action of Nature, and consequently to require the most perfect Animal Fluid.

But this is not the only Dependance that the Solids have upon the Spirits, for they not only nourish and strengthen them by appositiong some Part of their Fluid to be chang'd into a Solid, but also by insinuating into the Interstices or Vacuities of the Fibres, they thereby enable them to exert a contractile Force, which according to the various Influx of the Spirits may be either intended or re-

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mitted. Of this, our own Observation may be a sufficient Proof; for in acute Cases where the Blood and Spirits are found to flow with an impetuous Motion, nothing is more easy to observe than a Hardness and Tenuity of the Fibres: on the contrary, in a Syncope, where the Inanition of Spirits is but too evident, we as easily discover an universal Flaccidity and Relaxation; and thus, like an Hydrometer, our Solids are brac'd and screw'd up by a plentiful Influx of Spirits, and let down or relax'd by a Deficiency.

It is now the most prevailing Method to solve Diseases from a tense and lax Fibre; and accordingly it is suppos'd, that the one is the Cause of Chronical Diseases, as the other of acute, when
indeed

indeed they are properly speaking the Effects only. For were not the Solids of our Body originally Fluids? and are they not daily repair'd and nourish'd by the Apposition of fresh fluid nutritious Particles? And therefore, barring all Accidents that may any ways indispose the Solids from receiving this Supply, a Default in the Fluids must of necessity antecede that of the Solids. Moreover, I have before shewn the Power of the Spirits in elevating and depressing the Motions of the Fibres, according to their Degree of Influx; and therefore as their Tone is thus doubly dependant on the nervous Juice, there is no way left, whereby in the Order of Nature they can suffer a Change, but by means of the Spirits.

What Part of our Machine then is first set a going, is evident ; for in organiz'd Bodies we plainly discover that the Motion of the Muscles is only a Consequence of the Motion of the Spirits, and that they, as not having the Power of Self-Motion, must be first actuated by an immaterial Principle within us. If then the Soul thus immediately acts upon the Spirits in perfect Bodies, the same, according to the Uniformity with which Nature always acts, ought to be granted in its first Rudiments ; and tho' the *Punctum Saliens* be the first discoverable Motion in the Embryo, it is impossible in Nature, that that Motion could be perform'd without the Influence of a prior Motion of the Spirits, or some other Fluid like it : Therefore the Animal Spirits, or
 Nervous

Nervous Fluid are the first Parts of Matter that are actuated by the Soul, and by which all the other Parts of the Machine are put in motion.

The Soul then acts immediately upon the Spirits, but upon the Solids only mediately by the Spirits; the Solids in their turn immediately give Motion to the Blood, and upon this Motion in organiz'd Bodies does the Secretion of Spirits depend: and thus by a reciprocal Action of one Part of Matter upon another, the Animal Machine is enabled to continue its Motion. And so nicely has the wise Creator of all things adjusted Matter and Motion, and implanted so exquisite a Harmony between them, that whatsoever affects the one, must of necessity in some measure influence and affect the other. But

But I fear I have now digress'd; however I hope that what I shall now lay down will, from what has been premis'd, more evidently appear.

The Essence then of this Disease I suppose to consist in a defective Secretion of Spirits, and that as the Inanition in the Nerves is more or less, so accordingly is the Disease more or less intense; and tho' Persons whose Solids are originally weak, be vastly more liable to this Disorder, than those who enjoy a stronger Texture of Fibres; 'tis no otherwise, than that as their contractile Force is less, so they are more easily relax'd or let down by any deficiency in the Spirits that may happen.

In order to prove what I've laid down, I shall now with the utmost Brevity and Perspicuity give as rational an Account as I am able of all the most remarkable Symptoms that happen, without confining myself to the strict Observance of Method, in describing their Rise and Progress.

The Stomach then, as it is a principal Sufferer, deserves our first Regard; and so great have the Complaints in this Organ been, as to make some believe it to be the Seat of these Disorders: but as there are Instances enough of the Stomach's not being at all affected, while the other Symptoms have rag'd with unbounded Fury; so we may suppose that those crude Indigestions and windy Vapours

Vapours collected there are not the Cause of the Disease; but the Effect; else no one cou'd be afflicted with the Spleen and Vapours without this Disorder in the Stomach, which is contrary to Experience.

But when the Stomach is affected, as it generally is, the Complaint begins for the most part some Hours after Meals; for then the Food being imperfectly turn'd to Chyle, the Crudities and undigested Leavings turn sour, putrefy, and ferment, whereby these windy Effluvia are thrown off; which by struggling for Vent, like Vapours imprison'd in a Cavern, do by violently distending, and at the same time vellicating the Stomach, occasion there most acute Pains. And whence do these Crudities proceed,

but from the digestive Faculty impair'd? And does not that Faculty principally consist in the Friction of the Stomach? else why is that part of the Food that touches the Stomach more Chylous than the rest? Is it not owing to its being more expos'd to its Friction? Or why, when the Spirits are low, do we perceive a Remission of the Appetite and Digestion? Is it not owing to a Diminution of the contractile Force of the Stomach through the Defect of Spirits? But the Truth of this the learned Dr. *Pitcairn*, *Hecquet*, and others, have so plainly prov'd, that there is no Necessity for advancing any thing more on that Head. It follows then, that these Disorders arise from a Relaxation of the Tone of the Stomach, as that from a Deficiency
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in the Spirits. And this Relaxation is hence also more evident ; for had the Fibres a due Degree of Tensity, the contain'd Vapours could not so violently distend them, but on the contrary, their elastick Force being abated, and their Resistance thereby not being equal to the Force with which the Vapours are expanded, the Stomach necessarily suffers under this grievous Distension, till by a Rarefaction of the Vapours, or some Effort of the Stomach to restore its Tone, they are expell'd in loud Eructations.

These imprison'd Vapours, when they descend into the Intestines, occasion nearly the same Uproar and Confusion ; but the Complaints, and murmuring Noise are vastly more various, as the Wind has a longer Channel to

pass through, more intricate in its Windings, and more unequal in its Capacities: However, till Nature can relieve herself by driving the offensive Vapours *quà data porta est*, she equally suffers under the Violence of the same excruciating Pain.

The next Symptom to be consider'd is that seeming Ascent of a Globe from the Abdomen into the Throat, which sometimes puts the Patient in fear of being suffocated. It is an Axiom, that Convulsive Motions are either the Effects of Repletion, or Inanition; and therefore, if according to the modern way we suppose this Phænomenon to arise from a Constriction of the Oesophagus and Pharynx; as a Defect of Spirits is so very evident during this

Complaint, so we may reasonably suppose that the Cause of this Convulsion is an Inanition. But how this suffocating Grasp or Constriction of the Throat; which can only happen by the Action of the annular Order of Fibres, and of the Muscles that contract the Capacity of the Pharynx; how, I say, this can give us the Perception of a Globe ascending, I can by no means conceive: on the contrary, according to the Order of the Fibres, it should rather seem descending. Again, if we suppose the Gullet to be thus contracted, it would be vastly difficult either to eat or drink; but on the contrary, Solids as well as Fluids readily find Admittance, and so far from creating any Uneasiness, as that by giving Vent to the included Vapours

the Symptom is very much alleviated. That the Muscles of the Pharynx may thus be convuls'd, and that also, as frequently happens, a Convulsion of the Larynx may by denying a free Passage for the Air, occasion a Symptomatical Quinsy, is what I don't deny: All that I suppose is, that whenever we perceive the Ascent of a Globe, or something rising in the Throat, we may there justly suspect the Ascent of those windy Effluvia from the Stomach. And in supposing this, I don't see any Absurdity; for we plainly find that the Stomach may be violently distended by the Expansion of Vapours, exhaling from Crudities and Indigestions; where then is the Difficulty in supposing the Oesophagus to be affected in the same manner, since

since they are of a Substance so very much alike, as to seem to be but a Continuation or Expansion of each other? The Windiness of the Stomach at such times seems to be an Argument for this Opinion, as also the great Relief that is found by Eructations. Now the Vapours expell'd that way are not only rarefy'd to a certain degree, but are also acted upon by a Motion of the Stomach, by which Quantity of Motion impress'd, they are enabled to force a Passage through the Pharynx: But the Vapours that thus dilate the Oesophagus are neither rarefy'd to that degree, nor are expell'd by the Contraction of the Stomach; but gently gliding into the Throat through the upper Orifice of the Stomach, (which we must suppose to be very much

relax'd, to suffer them thus to escape) they there expand, and cause so great a Distension, as not only to put the Patient in fear of being choak'd, but sometimes also of being strangled by the Pressure of the OEsophagus upon the Larynx; till by a seasonable Eructation, or by the Action of Deglutition, the imprison'd Vapours have room to escape.

The Difficulty of Breathing, that attends this Disease, may be either suppos'd to be a Consequence of the former, (*viz.*) that the Stomach by being distended presses upon the Diaphragm, as that upon the Lungs; or else, that through a Deficiency of Spirits, the Pectoral Muscles are disabled from dilating the Cavity of the Thorax sufficient enough to give
room

room for the Blood to circulate freely through the Lungs.

The next Symptom that occurs, is a Trembling of the Heart; but for this it may be suppos'd, that the Spirits flow in so small a Quantity, as to be able only to produce a faint tonick Motion, answering to that Shaking we find in People afflicted with the Palsy.

A Palpitation of the Heart is what frequently happens, but this, as an Exception to the general Rule, seems to be a Symptom only to be solv'd by a Repletion; since here the Heart is evidently contracted with greater Force than ordinary, and since that Contraction (per *Prop.* II.) rises in proportion to the Quantity of the Spirits.

Spirits. But nevertheless I cannot but think, that in this Disease it ought to be attributed to an Effort of Nature, rather than to a real Encrease of Spirits, because we find by Experiments that the Heart will strongly palpitate, tho' the Course of the Spirits be intercepted; and because in this Disorder, the Spirits are in such a languishing State, as that we can hardly imagine them to flow thither in a tumultuous Hurry.

The most common Causes here of this Complaint, are either Passions of the Mind, such as sudden Frights, &c. or a Lentor of the Blood, especially when by any means its motion is encreas'd, where by the Heart is so loaded with Viscidities and Cohesions, (which are not only difficult

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cult to be expell'd, but are also apt to recoil) as that, to carry on the Circulation, it is under an actual Necessity of exerting its full Power in freeing Itself from the oppressive Weight. And this we prove from the Experiment of Dr. *Lower*, upon a Mastiff, (*pag. 84. de motu cordis.*) We may also observe, in those Diseases where the Blood is found to be of a viscid Texture, as in a Chlorosis, Cachexy, and Rheumatism, that there a Palpitation is a very common Complaint.

However, not to insist too much upon the Force of these Arguments, let us suppose the Palpitation of the Heart to be a Consequence only of an inordinate Influx of Spirits into its muscular Fibres: But even then,
this

this single Instance of an irregular Flight of Spirits into the Heart, (to which, as in a high Road, they constantly tend without the Determination of the Will, and which has no Antagonist Muscle to counter-balance it) can never be thought a sufficient Reason for defining a tumultuous Hurry of the Spirits, as the Cause of this Disease, when during the Severity of this Symptom, a Deficiency of the Spirits is but too evident. And that thus an unequal Secretion of a small Quantity of Spirits may put on the appearance of a Repletion in some Portions of the Nerves, when the most general Cause is an Inanition, is not difficult to conceive; since Secretions of the Spirits are so frequently irregular, as is evident from convulsive Motions: for be the Cause
 what

what it will, the Quantity of Spirits deriv'd into the two Antagonists must be unequal, to destroy the *Æquilibrium*, or else it's impossible that a Convulsion shou'd happen.

The *Incubus*, or Night-Mare, does frequently attack Persons labouring under this Disease, who are not only naturally inclin'd to it, but also render themselves more liable to the Invasion, by lying low with their Head, and sleeping in a supine Posture, by which, as Dr. *Lower* has shewn, (*pag.* 108.) the *Medulla Oblongata* is compress'd, and the Course of the Spirits by that means intercepted; whence the Difficulty of Breathing, Trembling of the Heart, and Inability to move the Body, and Oppression of the *Præcordia* by a seeming incumbent

cumbent Weight of a sort of Hobgoblin, which they are not able to shake off; and in this Posture they lie for some time, till after many strivings and heavings they awake, and the imaginary Spectre vanishes.

But instead of this more frequently happens, what may properly enough be term'd a Species of it, as it chiefly happens to those who habituate themselves to this Posture in sleeping, and as here also the Course of the Spirits is intercepted; and in this Affection, soon after they are compos'd to rest, they are troubled with horrid Dreams, by which they awake in a most dreadful Fright, they feel a Trembling and Oppression of the Heart, a Dejection of Spirits, and
are

are under the Apprehensions of immediate Death.

From a Deficiency in the Spirits also the vertiginous Swimmings, dancing of Motes before the Eyes, Dimness and transient Suspension of Sight, Smelling, Hearing, and Tasting vitiated, may be easily accounted for; but to treat of each distinctly, would be too tedious.

And this Defect is even evident in their Countenance, their Dulness, Drowsiness, Melancholy, and Despair, their Affection to Solitude and Retirement, and Aversion to Mirth, Gayety, and Good Humour, their Sighs and Groans, their Doubts, Jealousies and Fears, and Apprehensions of imaginary Dangers, which
with

with all their other strange, odd, inconsistent, desponding Notions are sufficient Indications of this Disorder in the Spirits.

But the Faintings and Swoonings put it out of all doubt; for who is it, unless his Reason is blinded, or is prejudic'd in Opinion, that can see a Person languish and fall down, and deny that the Cause is owing to a Defect of Spirits, by which the Muscles are not in a Capacity of sustaining the Body? or who can attribute the Defect of the Pulse to any thing but the same Deficiency? For is not the Pulse or Diastole of the Artery owing to the Systole or Contraction of the Heart? And does not that depend upon the Influx of the Spirits? What then in this Case can be

be more evident, more agreeable to Reason and Experience than an Inanition of Spirits ?

The cold Sweats attending do also demonstrate the same thing; for whence could such Drops proceed, but from a Relaxation of the Fibres? And whence that Relaxation, but from a Deficiency of Spirits? Whatsoever passës away in Perspiration is merely by Impulse, but here the Blood is suppos'd to have little or no Motion, so that the Impulse in a measure ceases, and therefore the Cause of this can only be the unnatural Wideness of the Cutaneous Pores.

The same Defect is to be suppos'd in the Salival Glands, whenever this

Disease is attended with a Symptomatical Salivation.

The same Relaxation is to be observ'd also, if we descend so low as to examine into their Urine, which is found to flow in a profuse Quantity, pale and insipid, resembling that of a Diabetes, which can only depend upon the Relaxation of the Glands, as that upon the Defect of a sufficient Supply of Spirits.

As an Objection to these Arguments for an Inanition, I know it may be alledg'd, that sometimes in the first Attack of the Fit, the Limbs are distracted with furious Agitations and convulsive Motions. To this I answer, that Convulsions may be solv'd either from Repletion or Inanition,

tion, and therefore as the generality of the Symptoms have been accounted for from the latter Cause, with the same Uniformity of Reason we may here also suppose that the real Cause of these Distractile Motions is an Inanition: - And tho' from the Force or Quantity of Motion exerted an inordinate Influx and Motion of the Spirits be suspected, yet if we may be allow'd to reason by Analogy, the contrary will appear very probable: For in an Epileptick Fit, where the Body plainly falls through a Defect of Spirits, what violent Spasms, and convulsive Distortions of the Limbs may be observ'd? But in this Disease the Spirits were never suppos'd to flow in an inordinate Quantity, but on the contrary, to be almost totally intercepted.

Again, in Animals whose Heads have suddenly been separated from their Bodies, by which the Influx of Spirits is entirely prevented, the same Strugglings for Life, the same Convulsions and Agitations may be observ'd: The Deficiency then is too plain, and the Force or Quantity of Motion exerted can only be attributed to an Effort of Nature or the joint Concurrence of the Rarefaction of the remaining Spirits, and of the elastick Force and Spring of the Fibres.

And thus in this Disease we may suppose that Nature finding a sudden Defect of Spirits impending, and that consequently the Motion of the Machine will immediately cease, she exerts her utmost Power in preserving
its

its Movement. And the Spirits of those that are so affected being perhaps of a more subtile and volatile Nature than ordinary, and more adapted to act vigorously upon the Solids, take the Alarm, and in endeavouring to reduce the Disorder, produce these irregular distractile Motions ; but being unable to take away the Inanition, they immediately fall into a Syncope. But this does not so frequently happen, and for the most part they languish into a Swoon with all the Easiness imaginable.

To give an exact Account of the different ways of the Approach of the Fit, wou'd be too difficult a Task, since even in the same Person they appear in so many different Shapes. Some only faint away, and some are af-

fected with a Syncope at the first Attack, and others fall to the Earth with great Violence and furious Agitations of the Limbs; some laugh and cry alternately, grasp their Hands, roll their Eyes, fix their Teeth, &c. I shall therefore not pretend to offer any thing conclusive on that Head, but pass on to the next Objection.

Which is, that Hysterick Persons do frequently after swooning discover some degree of Phrensy in doing some odd out-of-the-way Action, which their Fancy urges them to: But for this we may suppose that the Spirits which have so lately been confus'd and dissipated can't at present be brought into their former regular Order, whence from their Hurry and Confusion these inconsistent

fixt Notions are form'd in the Mind, which prompt them to those Extravagancies; and then it will not be at all difficult to conceive how a due moderate Quantity of Spirits immediately succeeding an Inanition, may easily put on the Form of a Repletion.

The next seeming Objection is that obstinate Wakefulness, which sometimes happens instead of Drowsiness. But in this Case it can only be attributed to a Deficiency of Spirits, and in supposing this, I can see no Absurdity; for Sleep does not so much consist in their Defect, as in their regular and gentle Reflex and easy Sensation of the Nerves; but this Defect may probably be an uneasy Sensation, and the Secretion

of that small Stock of Spirits may be so irregular and confus'd, as to affect the Mind with the same Disorder, and keep the Imagination attentive to whatever Ideas are thus represented to its View; and this Deficiency is also prov'd from the great Relief that has been found by the Use of such Medicines whose known Virtues consist in rousing and enlivening the Spirits. Some again, when they can't deny a Defect of Spirits, will pretend to say, that that was only a Consequence of the preceding Orgasm; and this Notion is grounded upon the furious Agitations of the Limbs. But how this may be owing to a Deficiency, I have before shewn. However it's far from being essential to this Disease; because we find that those violent distractile

fractile Motions don't always make the first Attack, but more frequently a gentle easy Languishing. Again, Medicines that rouze and invigorate the Spirits, are successfully given both in and out of the Fit, which if the Fury of the Spirits was the Cause, they wou'd inevitably dispose the Body to a continual Succession of Fits; but the contrary is found.

There are two particular Disorders which from a seeming Congruity are commonly call'd Hysterical, but are really owing to a different Cause, and therefore ought to be suppos'd a distinct Affection. The first is, when by inordinate Sallies of the Spirits, the whole Nervous System is drawn into Disorder, in which they
even

betray a Species of Madness, and which sometimes degenerates into a perfect *Mania*. This Furor, as I may so call it, may be owing to a bilious Constitution, a Life too indulgent, the Course of Nature perverted, &c. as also to Passions of the Mind, such as a fix'd and violent Amour, Anger, Revenge, &c. And therefore to allay this Disorder, a Method quite contrary to that in the Spleen and Vapours is to be taken, such as plentiful Bleeding, a low and cooling Diet, and whatsoever being the Reverse of Cordial can contribute to appease this furious Orgasm of the Spirits: but this is a Case very rare.

The other is the Hysterick Cholick, a Name first brought upon the Stage by Dr. *Sydenham*, tho' according to
his

his Description of it, it ought rather to be term'd as a Species of the *Biliose*, but now so generally apply'd to the Fair Sex, that we shall scarce ever hear mention made of the other.

I have before shewn the sad Consequences of the Spleen and Vapours in the Stomach and Intestines, and therefore that Symptom with more Propriety may be call'd the Hysterick Cholick in the one Sex, as Hypochondriack in the other; the Pathognomonick Signs of which have been there describ'd, and may also be distinguish'd by the Urine, which is limpid. But this suppos'd Cholick appears in a quite different Shape, and seems to be chiefly owing to the Bile or Choler. For whether the Bile is pour'd forth in an inordinate measure

sure into the Stomach and Intestines by Commotions of the Mind, or by the Peristaltick Motion of the Intestines elevated above the Standard of Nature, or by whatever other Accident; 'tis evident from the *Biliose* Vomitings, that the Bile is the principal Cause of all these Complaints; which by its Acrimony vellicating and stimulating the Nervous Fibres, occasions those Spasmodick Contractions: and this Acrimony is still more plainly to be perceiv'd by the Convulsive Twitches it occasions during the Action of Vomiting. Again, when, through the great Violence of the Disease, the Contraction of the Intestines is grown so excessive as in a measure to close up the *Ductus Cholidochus*, whereby the Bile cannot be secreted as before, it is observ'd that

that

that the Cholick ceases, and gives place to the Jaundice. This is what *Sydenham* himself allows, which I think sufficient enough to prove that the main Cause of all this Disorder, and the different Degrees of it, consist either in the Quantity or Quality of the Bile press'd out from its Excretory Duct.

After all, it is much to be question'd; whether many Fits which are commonly call'd Hysterical, are not rather a Species of the Epilepsy, or *St. Vitus's* Dance; but I shall not now enter into an Argument on that Head, but only in general define that Hypochondriack and Hysterick Fits, strictly and properly so call'd, are only a Consequence of the Spleen and Vapours, and consist in a high Degree

Degree of that Disease; and either happen in the ordinary Course of Nature, or are brought on by Fear or any sudden Surprize, such as the howling of a Dog, clapping of a Door, bad News, &c.

It remains now only to consider what is requisite in order to compleat a Cure. To begin with Bleeding; it is but seldom indicated, and then only when the Patient is of a *Bilious* Constitution, or there are manifest Signs of a *Plethora*, or some particular Convulsion requires it; otherwise this Evacuation wou'd only diminish the Quantity of Spirits, and the contractile Force of the Solids, already too much relax'd, wou'd thereby be more weaken'd and impair'd; and therefore it requires the nicest

nicest Skill imaginable to know where and when to admit so important an Operation.

The Effects of Vomiting are not so precarious, it being of service in most Cases, whether the Stomach be affected or not; for by this artificial way of Contraction not only the Tone of the Stomach is restor'd, but it also prepares the way for the better Operation of other Medicines; and by the violent Concussions it makes, resolves Obstructions in the Parts adjacent; and so shakes the whole Fabrick, as of necessity, by the Application of a greater Momentum, to accelerate the Motion of the Fluids, and dissolve its Cohesions. Sometimes, indeed, when the Stomach is perfectly easy, it may be omitted,

omitted, and sometimes it really ought to be so, when any particular Indisposition, or Structure of the Body contra-indicates; of which it is the peculiar Office of the Physician to judge, and in such a Case to endeavour to procure the Benefit by another way.

Purging Medicines, though generally thought necessary in this Disease, are nevertheless sometimes of bad Consequence, and by no means to be allow'd. And where Purging too is thought necessary, we ought to take care to adapt 'em to the particular Constitution of the Patient. In cold Phlegmatick Constitutions, such Catharticks are only to be administred, that are of a warm, subtil, attenuating Nature, inclin'd to
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act with Vigour upon the Solids and Fluids, and elevate their depress'd Motions : On the contrary, in Biliose Constitutions, gentle cooling Purges are the most proper and convenient Medicines ; and thus always the Temperament of the Body is first to be inquir'd into, and then the curative Indication naturally follows: However, in all Cases as the Motions are here depress'd beneath the Standard of Nature, we ought to be very cautious in the Use of Evacuation ; lest we impoverish the Blood, and weaken the contractile Force of the Fibres, and by that means aggravate the Disorder.

Thus much being said concerning the Use of Evacuation, the

Use of alterative Medicines is next to be consider'd, and first in order such as are only Palliatives, and not directly levell'd at the Cause.

Opium for this End is reckon'd the most sovereign Medicine in the whole Republick of Physick; by what means it operates, the ingenious Dr. *Mead* has given us a very fair Account; wherein he shews that its Narcotick and other palliating Virtues consist chiefly in being directly opposite to the Nature of a *Stimulus*, (*i. e.*) in titillating or giving a pleasing and ravishing Sensation to the Nervous Fibres, and thereby causing the Spirits to flow back in gentle Undulations. Therefore in acute Pains, convulsive Coughs, and
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in an obstinate Wakefulness that so frequently attend this Disease, Recourse cannot be had to a more speedy Remedy; but this is far from contributing to the Cure of the Disease, by reason it relaxes the Fibres still more: And tho' great Relief be found, and we may seem by Sleep to be refresh'd and recruited with a fresh Stock of Spirits; still we ought to be very sparing in its Use, lest by too much endeavouring to alleviate the present Pain, we lay a Foundation for the future.

Some Authors have been very extravagant in the Praise of this Drug; and indeed, if this Disease was owing, as they suppos'd, to a tumultuous Hurry of the Spirits, nothing cou'd

be more adapted to allay their Fury, or more directly obviate the Symptoms ; but the contrary has been prov'd, and therefore Opium, duly consider'd, is not in this Disease a Medicine of that vast Use and Service, as is commonly suppos'd, but on the contrary, by a frequent Indulgence in the Use of it, its Effects have been very pernicious. Testaceous Medicines are always found to be of singular service in relieving the Disorders of the Stomach, occasion'd by the acid Juices there collected, and furnishing Matter for those windy offensive Vapours, which not only vellicate and distend the Stomach, but there also occasion most acute Cardialgys, Hiccoughs, and Reachings to vomit. These Absorbents there-
fore,

fore, by their contrary Properties, sweetening the acid austere Indigestions, do not only alleviate the present Complaint, but also in some measure prevent the future.

I come now to the Consideration of such Medicines as are directly level'd at the Cure, *viz.* such as have a Power of attenuating the Blood, imparting Vivacity to the Animal Spirits, and in bracing and screwing up the relax'd Fibres. The two first Intentions are more particularly answer'd by Preparations of Steel, which according to Dr. *Friend, de remediorum viribus*, (p. 373.) not only attenuates the Blood, as is evident from Experiments, and its Effects in the Body, but also seems to bear a near Relation

tion to, and to be easily converted into Spirits, as is manifest from the Encrease of the Pulse. The last Intention, *viz.* That of restoring the Tone of the Solids, is best answer'd by the Use of *Cortex Peruvianus*, which in many Instances does plainly enough discover a most transcending Power in bracing and contracting the Fibres; not but that Steel strengthens the Solids, as well as the *Cortex* attenuates the Blood; but only as in producing these Effects they reciprocally out-shine one another, so by way of eminence we may attribute to each its peculiar Property aforementioned. However, in my Opinion, we need not much doubt of Success, if the good Effects of the foregoing be but wisely promoted by the Addition, and nice
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Conjunction of Aromaticks and Nervous Medicines.

I might here fill up two or three Pages with Prescriptions, but this, I think, would be impertinent, it being much better to leave that Part to the Judgment of the Physician; who may with the more Nicety and Exactness adjust the Forms and Dozes of Medicines to the particular Constitution of the Patient.

In order to compleat a Cure, it is necessary that the Patient as soon as he is a little recover'd, go through a Course of Chalybeat Waters, which are not to be drunk at random, as a thing indifferent, but must be regulated according to the Difference of the Constitution.

I should now, according to Method, treat distinctly of the Non-naturals; but at present I shall only take notice of the two last, *viz.* Motion and Rest; and Passions of the Mind.

The Consideration of Exercise naturally falls under the first of these, but for the Regulation of this no certain Standard can be establish'd. It cannot but be allow'd to be of great Benefit in restoring the contractile Force of the Solids, and attenuating Cohesions of the Fluids; but nevertheless if that Motion be too long continued, it only expends too great a Quantity of Spirits; and weakens and impairs the Spring of the Fibres; and therefore ought to be intended or remitted according
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to the Strength and Constitution of the Patient. But of all Exercises whatever, Dancing to a well-play'd Consort seems to be the most beneficial, for it does not only elevate the depress'd Motions of the Solids and Fluids, barely by the Application of Motion; but at the same time is assisted by the mighty Power and Energy of Musick: For as the Harmony of Sounds, by means of the Organ of Hearing, communicates a sovereign Pleasure to the Intellectual Principle, and fills the Mind with gay enlivening Ideas, so by Sympathy it transmits its delightful Influences to the Body, adds new Life and Vigour to the whole Machine, and raises Sensation and Motion to their utmost Degree of Perfection.

The most prevailing Passions of the Mind in this Disease are such as are the common Attendants of a Deficiency of Spirits ; and therefore in order to assist the Mind in overcoming those gloomy despairing Ideas that clog and depress the Exercise of its Faculties, it is necessary that we strive to relieve our anxious Thoughts, by soliciting our Senses with delightful Objects, and entertaining ourselves with such Diversions, as by being agreeable to our particular Humour, are most adapted to raise and excite in the Mind a pleasing Sensation, and cause a joyful Serenity.

We find that Diversions in different Persons differ in their degrees of

of pleasing, some being extremely fond of what to another is insipid and tasteless. In this Case therefore we are to judge for ourselves; and whatever Diversion we find to be most grateful to our Senses, and by that means most adapted to raise and elevate the dejected Ideas of the Soul, we are to prefer to all others, provided it does not any ways tend to indispose and disturb the Animal OEconomy.

I shall not descend into Particulars, but only in general recommend Singing, and Musick; the good Effects of which I have before shewn in their proper Place, to which I refer the Reader.

And

And thus, as briefly as possible, I have considered the Nature, Cause, and Cure of what in strict Propriety may be call'd the Spleen and Vapours; and hope I have sufficiently made it appear, that, whatever be the remote or original Cause, whether Passions of the Mind, preceding Diseases, Change of Diet, &c. this Disorder may be accounted for from a defective Secretion of Spirits, and a Relaxation of the Tone of the Fibres as its immediate Cause: And notwithstanding we now and then discover some few irregular Flights of the Spirits, it is evident from the generality of the Symptoms, and the common Operation of Medicines, that at most they can be term'd

- term'd no otherwise than an irregular Deficiency.

It may now perhaps be thought necessary to inquire into the Reasons of the Melancholy and Madnefs, that are so often the sad Consequences of this Disease improv'd in different Constitutions: But as that was never my Design, I shall forbear to offer any thing on that Head, and here take leave to conclude.

F I N I S.

