

**A theoretical and chiefly practical treatise of fevors, wherein it's made evident, that the modern practice of curing continual fevers is dangerous and very unsuccessful. Hereunto are added several important observations and cures of malignant fevers, not inserted in the former impression / Written in Latin by Gideon Harvey ... Now rendered into English by J.T. And surveyed by the author.**

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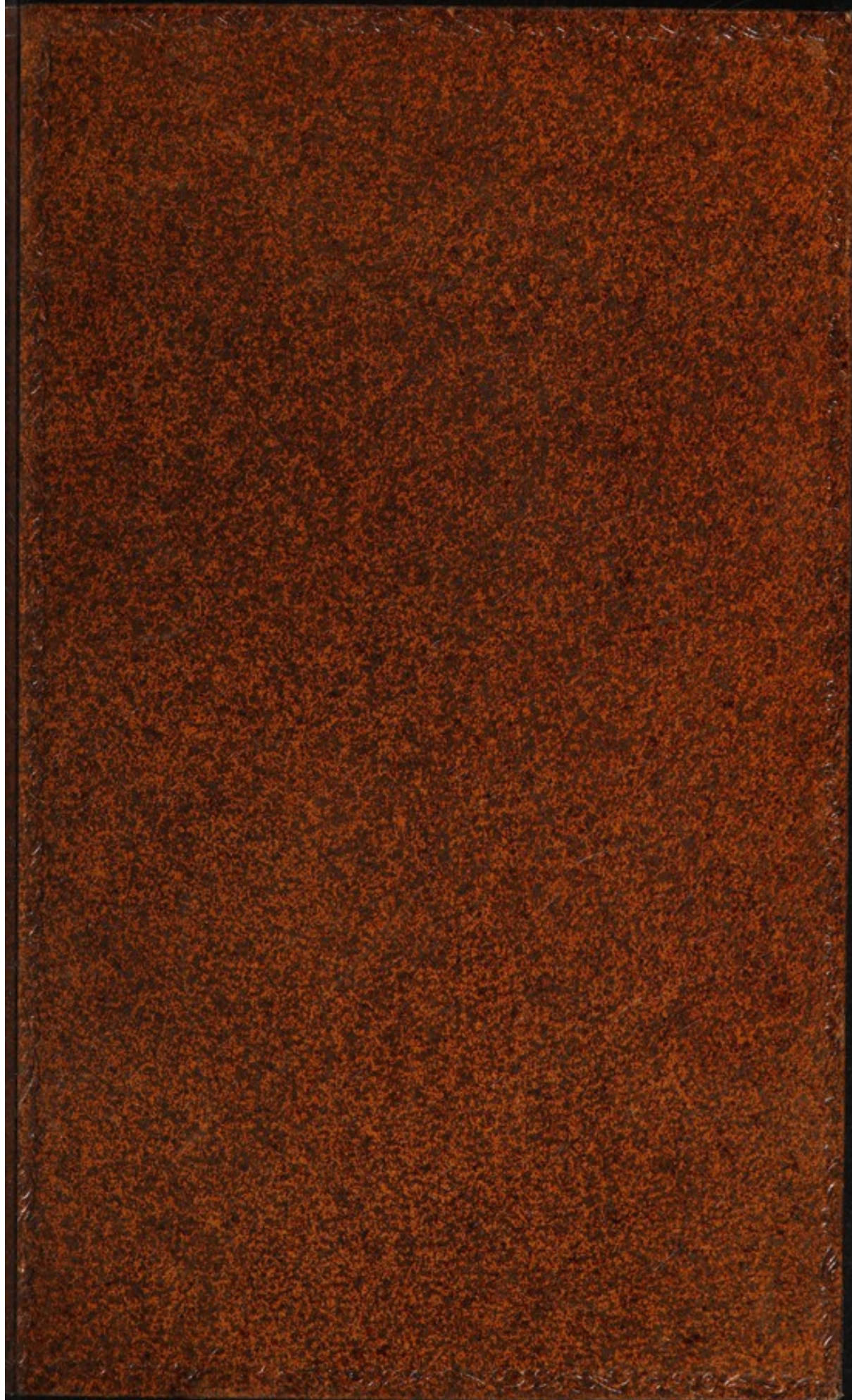
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ON FEVORS.- G. HARVEY.- 1674.



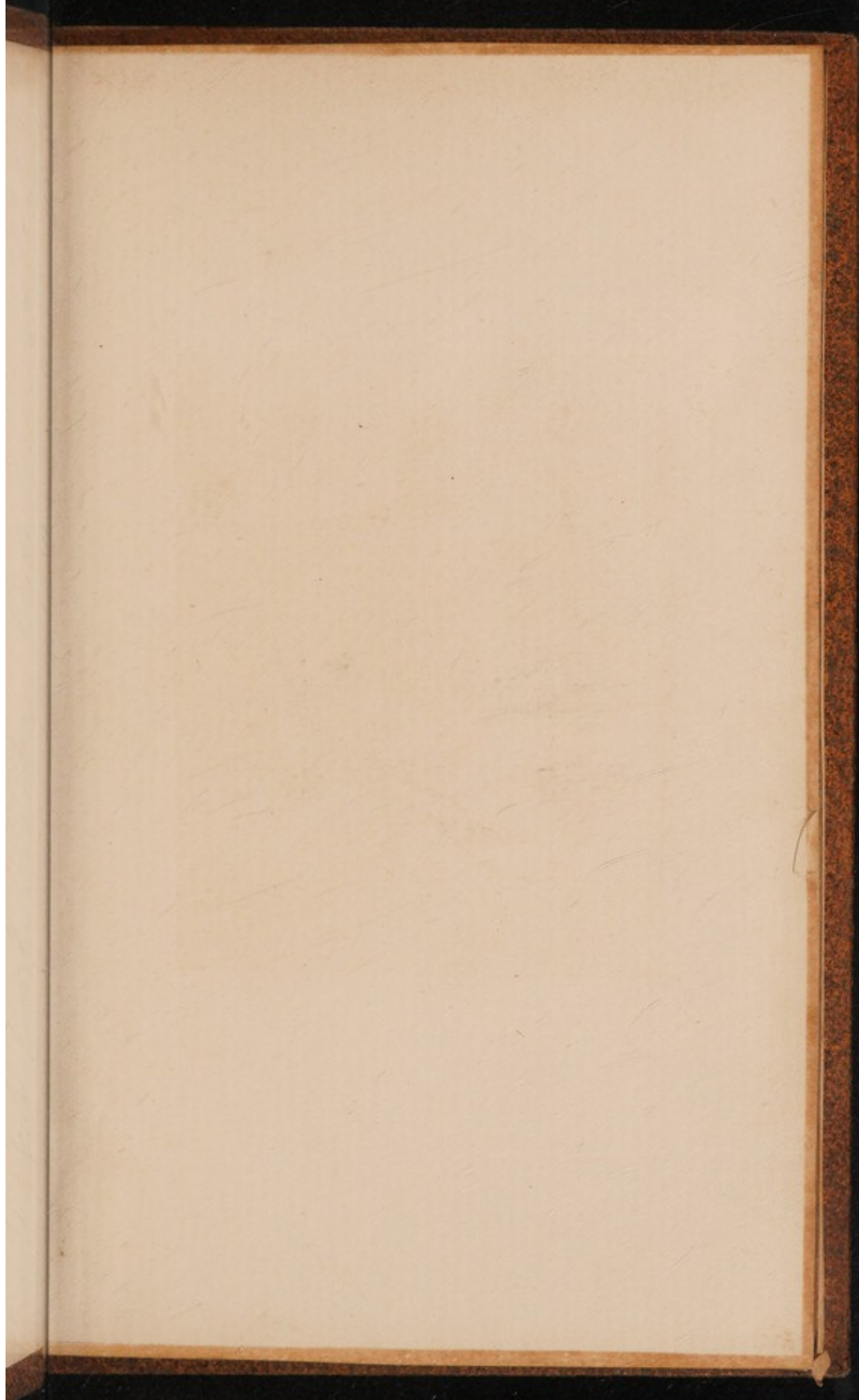




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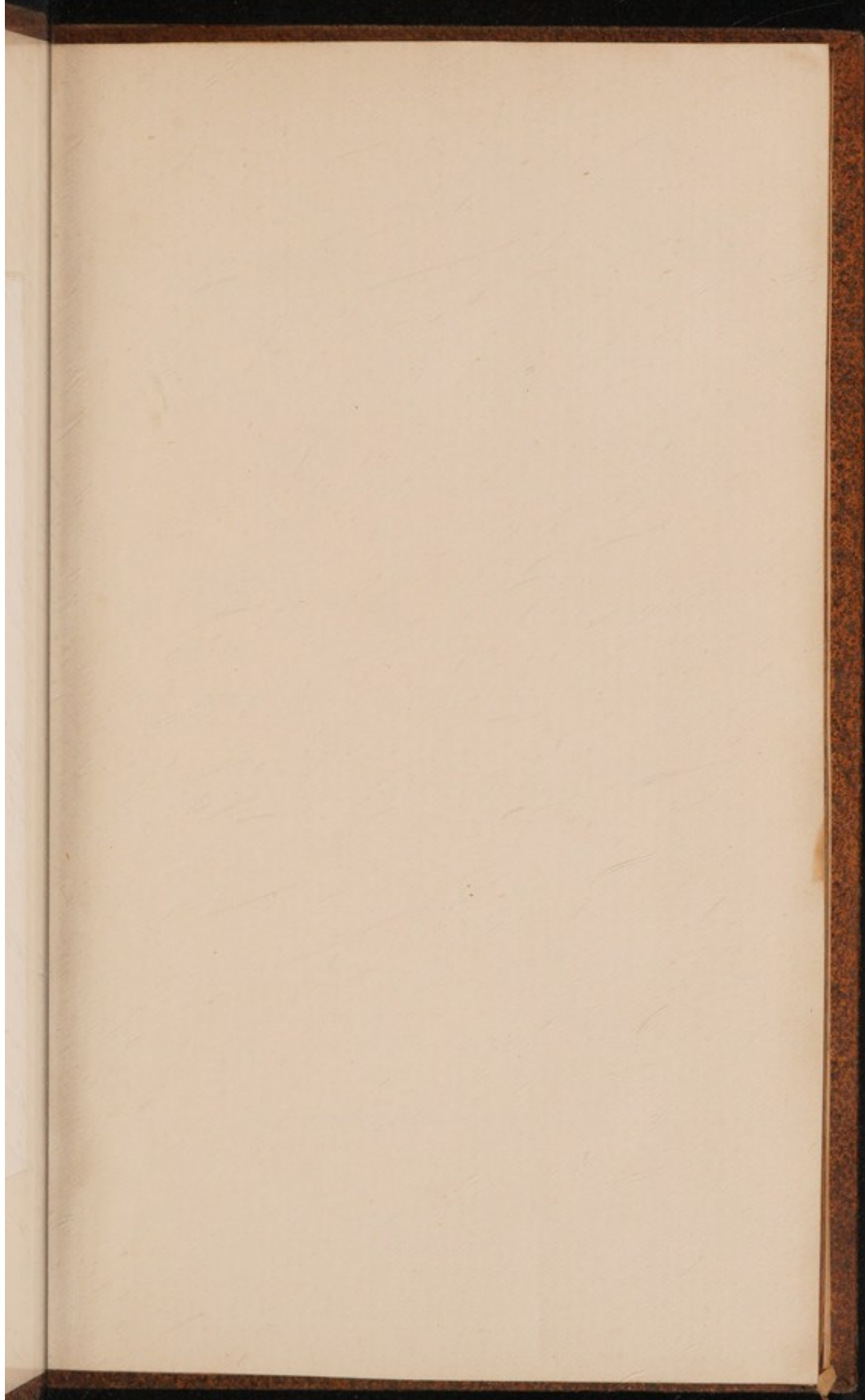
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A  
THEORETICAL  
AND  
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TREATISE  
OF  
FEVORS,

Wherein it's made Evident, that the  
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Written in Latin by *Gideon Harvey*, M. D.  
Physician in Ordinary to his Majesty.

Now rendered into English by *J. T.* and  
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LONDON, Printed for *William Thackeray*  
at the Angel in *Duck-Lane*. 1674.

THEORETICAL  
AND  
PRACTICAL  
TREATISE  
OF  
FEVERS

By JOHN HENRY HUNTER, M.D.  
F.R.S. &c.  
Fellow of the Royal Society, &c.  
Physician in Ordinary to his Majesty.

Second Edition, corrected and enlarged.  
By JOHN HENRY HUNTER, M.D.  
F.R.S. &c.  
Physician in Ordinary to his Majesty.

LONDON, Printed for W. & A. CLAYTON,  
in the Strand, 1764.



TO THE  
Physical Reader.

**I** Have long since observed, that Physicians did not cure continual Fevors, but rather did render them mortal: Though, if by good fortune any one hath been delivered of a Fevor, it is only to be imputed to the strength of nature, which if she had not been disturbed by improper means, would have disintangled her self from the disease much sooner, and with less danger.

The cause of this so unfortunate practice depends on a false supposition

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tion of fermentation, whence since  
they desume erroneous indications,  
the success must necessarily  
frustrate their expectation. I con-  
fess I have made use of the term *co-*  
*fermentation* in several Treatises, and  
possibly in the illustration of Fe-  
vors, but to this intent only, that  
might in some manner be com-  
plaisant to the received opinion  
of the times, not in the least imagin-  
ing the notion thereof necessary,  
or contributing any whit to the know-  
ledge or cure of Fevors. More-  
over the Reader is to take notice  
that at present I have not written  
or acted the part of a *Professor* in the  
Chair, making a Methodical and  
Pedantick Lecture on the definiti-  
on, division, next the causes, then  
the Diagnostick, and afterward the  
Prognostick signs of Fevors, &c.  
But it is my purpose, to discourse  
suc-

succinctly of such things, as are most necessary for a Practical Physician, and of such other cases, as I could call to mind, since the time, when I had seldom less in cure than two hundred Patients that lay sick of Fevors.

What concerns other theoretical notions, and farther observations touching the several kinds of Fevors, I shall hereafter propose them in distinct Sections; in the meantime, farewell.

*Hatton Street near Holborn.*



the University of London, the first of the  
three necessary for a practical study  
of the subject, and of which the first is  
to be called to mind, that the student  
who had had seldom had in course of  
two hundred papers, that the first  
of papers...

What concerns other theoretical  
notions, and further observations  
touching the several kinds of re-  
solves, shall rather proposition  
in different sections; in the mean  
time, however...

There are several...

THE



THE  
BOOKSELLER  
TO THE  
READER.

**T**aking my measures from the reception of the Latin Copies, I judged I should do the publick service in causing this Treatise to be faithfully translated; and that it might be attended with a greater welcom, I have obtained the favor from the Author to make a superficial survey of the Translation, and to insert the addition of very remarkable and important observations and cures, which have rendred the Treatise at least a fourth part bigger than it was before; in having procured this, I doubt not but that you will easily believe I am,

your Friend and Servant,  
W. T.

THE

BOOKS

TO THE

READER

I have the honor to acknowledge the favor from the Author  
 to make a superficial survey of the  
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A

Theoretical and Practical

T R E A T I S E

O F

F E V O R S.

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CHAP. I.

*Of the Nature of Innate Heat.*

**I**T is usual among Authors, to derive the name, they intend to impose upon the distempers of parts, from the chiefest symptom; whence the word *Febris*, (or *Fevor*) being taken from *fevor*, *i. e.* heat, or from *februa*, a sort of fiery sacrifices of the Antients, or from the verb

B

*februo;*

## The Theory of Fevors.

*februo*, i. e. I cleanse, likewise *πυρετός* in Greek a Fevor, from *πῦρ* a fire, seem to be applied to this distemper. The word Fevor in English is certainly derived from *fervor*, heat, only leaving out the *r*, and therefore ought to be written Fevor, and not Fever, unless you derive it from the French word, *fièvre*, by omitting the *i*.

Wherefore what this *fervor* or heat, or *πῦρ* fire signifie, will best appear by conferring with them the words *Calor* warmth, and *Calidum* heat, being their opposits: from warmth *Calor*, and heat *Calidum* we have our strength and live, but through *Fervor* a destructive heat and fire, we lose our strength and end our days.

It will much conduce to our purpose I judge, to premise the difference of these words. *Calidum* heat denotes a hot essence or substance, but *Calor* warmth signifieth only a quality separable from its subject or hot nature by our thoughts or concept, and not really, though *θερμὸν calidum* or heat, and *θερμὰς Calor* warmth, are by *Hippocrates* used in the same sense. Neither are you to imagine, that in feeling of Pulses of such as are ill of a Fevor, it is not the quality of heat, but fiery steems, bodies really physical, do strike your hand and ends of

A Theory of Fevors.

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of your fingers. To ~~the~~ fire is by Hippocrates expounded the Innate Heat of man, but among the Latines generally a Fevor; whence a Fevor may be commodiously defined, *A fire kindled out of the Innate heat of the body, chiefly of the heart, (but secundarily:)* Wherefore that the heart and its constitutive principle, is the part, for the most times hurt, is evident, from the fevorish affection, and life (the proper action of the heart,) being immediately oppressed, from the inordinate pulse, a sudden decay of strength, and the actions of the whole œconomy being very considerably, and all at once depravated, and diminisht. The experience of those, that have put their finger into the ventricles of the heart (the breast being suddenly opened) of malefactors, who by sentence have had their head cut off, and have extracted it again thence very hot, doth confirm, that the *Calidum*, or heat of the heart, is a substance really burning about its chambers, and thence diffusing flames, through the articles, to the circumference. If on the other side, the destructive nature of a burning heat be objected, it's not material, considering the burning, or flaming of brimstone, or spirit of wine, whose purity of flame will not

burn those bodies it touches, especially when through graduation of the air, it may be moderated to any tone of heat or warmth.

Furthermore, I state the *Calidum Cordis*, or heat of the heart, to be a *Bitumen* really ethereal and vital, most exactly defecated or refined, dispersing every where its most subtile and pure flames, and feeding on the most pure and flowing particles of the blood. But since it's difficult, to gain an universal assent, that the nature of blood, exercising so slender a commerce with the air, and limited within the narrow bounds of the heart and arteries, should be convertible into a flame, and a perpetual warmth; it may be rendered obvious by this only instance; Namely, almost all subterraneous waters, that partake of a continual heat, as the water of *Aix la Chapelle*, *Bathe*, and of other hot Baths, since they source out of the deepest and most remote bosoms of the earth, just in the same manner doth the indefatigable forcing of vegetative, or living blood, leap very hot out of the bosom of the heart into the arteries, like rivulets; and certainly, that which by natural Philosophers is asserted to be the cause of heat in those waters,

may

may easily be imposed upon me, to believe the same, to be the cause of heat in the blood, namely a *Bitumen*, but not *Sulphur*, being immediately extinguisht by water; nor *calx viva* or lime, there being no such fury of heat discoverable in the caverns of the earth, as is requisite for its generation.

Wherefore in *Bitumen* only may be found a heat that is constant, and scarce to be extinguisht; for by water it's apt to be kindled into a higher flame, and to be nourisht by oyl, and oylie bodies.

It is then in the heart where nature hath placed an abounding fountain of vital *Bitumen*, on the purity and continuity of whose flame, life it self doth depend. Neither must it be asserted, that so great a proportion of this doth flow from the heart, as to suffice to protract the life of it, and of the whole structure, for so many years, but that it doth daily attract a bituminous nutriment from the streaming blood, which being kindled into vital flames, is by means of the pulse distributed into the rest of the small chanel of the body. It must also be observed, that all what we eat, or drink, the chyle and the blood do contain a certain proportion of



*Bitumen*, and as much hereof, as there is, abounding in them, so much they are capable of being serviceable to the heart.

At present must be explained, what, and of what quality this *Bitumen* is; namely a body grown out of a sulphureous oyl and a Colophony, into a thick, liquable, and inflammable substance. Such by distillation it's also discovered to be in the analytick parts of the blood of a living creature; to wit, an oyl swimming a top the phlegm, and a colophony with a part of fixed salt, settled in the body of the glass-gourd, withall a volatil salt passing the Alembick with the oyl; which later, namely the volatil salt, it is, that adds to the whole mixt body all its strength and power; not unlike Gunpowder, whose *Nitro-salin* particles being rendered volatil, through virtue of the fire, do assume so great a force, that they strike any object whatsoever, with the greatest alteration and the smartest blow imaginable, when in the mean while the brimstone, and the charcoal-dust, only supply the place of a soporous matter. From what hath been said, the manner of the pulses may commodiously be extracted; only conceiving, that the *Bitumen* of the heart, burning until the period of life, and pour'd from the  
 ascending

A Theory of Fevors. 7

ascending *vena cava* into the left ventricle, doth kindle the blood into a flame, by virtue whereof the nitro-salin salt being blown into most volatile forcible particles, is like Lightning, or Gun-powder discharged out of a Gun, propelled as it were by an elastic force into the Great and other Arteries.

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CHAP. II.

*Concerning the differences of Pulses  
and their causes.*

**T**O describe the difference and variety of the Waters of the Sea, would prove a task less difficult, than that of the pulsations of the Heart and Arteries, which are subject to be altered by every passion, wind, and disease; though *Galen* indeed counted them, as if he had blown them out at his fingers ends, among which notwithstanding scarce every third difference can be distinguisht by the feeling of a Spider. Wherefore I shall only discourse of such, which every one may almost discern in Fevors.

In the Pulse I use to mind, first, the strength or force, next the swiftness of motion, and thirdly the equality. From the strength a pulse is called strong or weak; hereunto are accounted a great pulse (to wit, full and strong) and small, namely empty and weak: the causes of the strength of the pulse I state to be the abundance of volatil salt, being vigorously and smartly discharged through the pulse of the blood, and the strength of the fibres being well nourisht with the moisture of the brain. On the contrary, the defect of salt, and emptiness of the fibres cause a weak pulse. Here it's worthy of your observance, that the pulse in some fevorish Patients is found much stronger, than it was in their state of health: and, what is more, in some, who were reduced to so low an ebb of strength, that they were scarce able to keep death a day from their door, I remember, their pulse would beat the tops of ones fingers smartly, which notwithstanding in my opinion, ought not to be called a strong pulse, but violent; for the vital faculty being irritated, by a corroding and reverberated kind of salt, is forced into those violent pulsations; whence falling at last into a very small and most quick pulse, is immediately

diately attended with an *Asphyxia*, or ceasing of pulsation. It is an easie business, to distinguish a violent pulse from a strong; the former doth come full to the fingers, the later empty. Secondly, I have oft met with a weak pulse in such as lay sick of Fevors, that they seemed not to be able to hold out two days, which notwithstanding have for a fortnight, or twenty days, strove very successfully with the disease. This pulse proceeds from a thick and moist blood, which by a continuatd rarefaction, and reiterated circulation, being advanced to a higher degree of concoction, doth revive the vital faculty, whilst in the mean time, there hath been sustained no great loss of volatil salt in those weak pulsations. I have many times taken notice of this case in women, that lay sick of Fevors; wherefore it is warily pronounced by *Hippocrates*, *Aphor. 19. lib. 2.* τῶν ὀξέων νοσημάτων, ἔπι πάντων ἀσφαλές αἰ προδιαγνώσις ἔτε τῶ θανάτῳ οὐ γάρ ἔτε τῆ ὑγιάνης, *i. e.* The predictions of life and death in acute Fevors are not always certain and without doubt.

That we may avoid being mistaken, we are to distinguish; a pulse that's really weak, is empty and small, and for the most part unequal in motion and weakness, neither did

did it differ much from that degree since the beginning.

Under the motion of pulsation, I take a slow and swift pulse, likewise a thick and rare pulse. A slow pulse is known by moving slowly from the *systole*, or a contraction of the pulse, to the *diastole*, or a widening or dilatation of the pulse; and again from the *diastole* to the *systole*. A quick pulse is known by its quick pace from the *systole* to the *diastole*, and so reciprocally. A thick pulse to me is, which is perceived by the finger by its frequent beatings, or retreats; a rare pulse contrariwise. Here may be noted, in my apprehension a pulse can scarce be discovered slow and thick at once, when a slow pulse necessarily doth not return frequently or thick, because it's slow; but according to the common maxim, a thick and slow pulse may happen together, because it is called thick, in respect of the interval or rest between the *systole* and *diastole*, namely, which returns in a short space of time; but a pulse may move slow from the *systole* to the *diastole*, so that there is but a small interval between, before it returns from the *diastole* to the *systole*, and thence it's termed thick.

But

But taking the matter into farther consideration, there is scarce any such pulse, as a thick or frequent one, according as it's commonly described; neither is there a rare pulse, because there is no interval of rest between pulsation; for conceiving, that the pulse is like a reciprocal swelling and falling, like the tide of the sea, there can only be inferred a point of reflection, namely, as soon as it swells up, the next moment it falls again, and as soon as it's fallen, the next minute of time it swells again. Moreover, this rising or swelling is attended with an impulse from the heart, by means of the constriction of its fibres, whereby like waves, besides the forementioned swelling or turgescency, the blood is propelled through the pores of the body, out of the arteries into the veins. Wherefore that I might not beyond necessity burden my self in my practice with notions, I scarce am used to take notice of any thing else, in the motion of the pulse, besides its swiftness and slowness, neither do I stand much whether it be hard, or hot, or pricking, since this rather relates to the altered qualities, than the pulse. Thirdly, It is to be observed that those, whose pulse being naturally full, strikes quick, their vital faculty

culty is very weakly; wherefore in women and children the arteries strike quick, but full. Fourthly, In malignant Fevors the arteries do oft move slowly, in such a manner, that one might judge them free from all putrid heat; but this doth not happen, unless death be ready to follow within a day, two or three.

The natural swiftness of pulsation (not in sick people) must be imputed, partly to the abundance of volatil salt, but such as is not close and compact; for as soon as it arrives to the ventricles of the heart, it's apt to be flusht into too volatile particles, and soon after; the salt being so copious, follows immediately from the other parts of the salt, whence another pulse is ready at hand; partly it's to be imputed to a *Bitumen*, that is easily inflamed, which quickly kindles and is kindled, whence happens the frequency of the pulse.

By the way, a small question might here be moved, whether the pulse beating quick in Fevors, there passeth more blood through the heart, than when one is in a state of health? First, It must be agreed upon, whether in every dilatation the heart is filled full of blood, and in every constriction it be quite emptied; some defend the affirmative part,

part, which to me doth not at all seem plain; for those, whose pulse at one time beats full, and at another empty, it must necessarily be argued, that at one time the pails of the heart must be swelled up with a greater quantity of blood, and at another with a lesser; and from the consequents it's evident, that reciprocally in divers pulses, there must be expelled a various proportion of humors. Secondly, Since it may be observed, that a large *diastole* of the heart is sometimes the next moment followed by a short and weak *systole*, as appears out of the swelled *diastole* of the arteries of the wrist, or any other part, there oft following a short and weak *systole*, whence it's deemed, there is more received into the receptacle of the heart, and less expelled, so that oft a proportion that's admitted by one *diastole*, is expelled in three or four *systoles*.

To answer to the question, we assert, that the blood is not circulated nothing near so rapidly or quick in malignant Fevors, as it is in the state of health, because the pulsifick faculty of the heart is languishing; neither is the *systole* of the arteries or heart made with so much force; but in putrid Fevors, the *systole* and  
*diastole*



*diastole* being violent, the blood is transfused somewhat swifter, than in a healthful state. Here is to be observed by the way, if a swift pulse be perceived to go slower a day before, and the day after to grow swifter, a malignity is to be suspected.

The third particular worthy of observation is, the equality or inequality of the pulse, in reference both to motion and strength. Wherefore in respect hereof a pulse is said to be equal, or unequal in motion, to wit, swiftness and slowness; and in strength, namely fortitude and weakness. The equality which Authors are wont to apply to a thick and rare pulse, likewise to the tone or musical rithme, we pass by, being rather apt to occasion confusion to the practising Physician. To unequal in motion are accounted the *dicrotus* or anvil-pulse, *caprisant* or goat-pulse, intercedent, and some others.

A strong pulsifick faculty, and not depraved, likewise a temperate mixture of the blood being well depurated from heterogeneous particles, are both some causes of an equal pulsation. On the contrary, blood that's unequally mixt with the vital *Bitumen*, and several sorts of salts, occasions an unequal pulse, both in respect of motion  
and

and strength. As for other differences, proceeding from the force of passion and other procatarctick causes, we refer to another place.

## CHAP. III.

*Of what is generally to be observed  
in Urins.*

**S**ince the Urine for a more certain pre-  
sage must give place to the pulse, we  
have thought fit to discourse of this after  
the other.

Through the abuse of pispot-gazers, and  
some Physicians, that imprudently pretend  
to tell wonders, the doctrine of Urines  
among some is fallen into disgrace; never-  
theless since it makes an ample discovery of  
the diagnosticks and prognosticks of disea-  
ses, it ought not to be dismembred from the  
art of Physick. First, we shall set down;  
what Urine is, afterwards what particulars  
are to be observed in it. To me the Urine  
seems, to be a liquor melted from the vola-  
til and fixt salts, likewise of some excrementi-  
tious phlegm, dissolved in the *serum* or water  
of the blood, which being thoroughly filled  
and

and impregnated with the foresaid contents, through its weight tending downwards, is posted to the kidneys, thence as if it were distilled by descent, it falls down by drops towards the bladder. But that the nature of urine may be made more plain to you, some particulars are to be taken from the constitution of the blood, and proposed here. Those volatil salts I conceive to be the principal efficient of concocting the blood, adding to it a scarlet tincture, sweetness, homogeneity, and fluidity, in which shape the blood arriving to the pores of the parts, that are to be nourisht, doth desert the salts, which return with the superfluous blood to the veins and lymphatick channels, that afterward disburden themselves into the *emulgents*. That those salts do not only illustrate the blood with a tincture, but likewise the urine, shall be demonstrated by sight. You shall find, that spirit of *sal armoniack* scarce differing from *spirit of Urine*, or *spirit of Hartshorn*, or *spirit of Soot*, a drop or two being dropt into whitish, drabbish and undigested urine, shall immediately concoct it into a golden or vitrinous colour, and an excellent consistency. But if you effuse an acid spirit, that's forced out of a fixed salt, you shall see it

turn

turn more drabby, more crude, and of a heavier weight. In the same manner, if you pour some drops of those forementioned volatil liquors into a small quantity of blood, though crude and phlegmatick, you will digest it into laudable blood and preserve it warm and florid; but upon dropping some *oyl of Vitriol* into it, it turns immediately into a curd, the *serum* or whey is depressed downwards, and assumes a purple red colour. *Spirit of Nitre* doth pervert the redness into a whitish or ash colour, but doth not precipitate the whey, suffering it to swim a top. Upon the further pursuit of the matter, I dropt a drop into a large proportion of blood almost coagulated, whereby almost in a moment the tye of the coagulative particles was dissolved, and indued with a shining lustre, not at all inferiour to the best digested blood. Neither doth it only from this external use deserve to be termed so admirable, but that in a short time, being used inwardly, as I have oft made trial, it hath singularly digested the crude blood of Asthmaticks, Scorbuticks and of worser habits. A consistency between thick and thin, signifies a vigour of concoction, chiefly to be ascribed to the volatil salt, living in the vital *Bitu-*

*men.* The causes of the thinness or tenuity of urine in those, that are sick of a Fever, are the scarcity of volatil and fixt salts, not being separated from the torrent floating through the great vessels, also the drying away of the mucilage of the blood, through the heat, or its dissipation through the pores. The thickness of urine is occasioned by the whey or *serum*, imbibing too great a quantity of salts and thick mucilage. Touching the matter of the *hypostasis*, or settlement of the urine, there hath hitherto but little certainly been stated among Authors, though most are of opinion, it proceeds from the superfluous humour of the third concoction. To me the sediment appears to be a mucilage, partly imbibed by the *serum*, or whey within the vessels, partly deterged from the slimy substance of the intern tunick of the ureters and bladder, wherewith they are liquor-ed, to prevent their most exquisite sense be- not hurt by the urine, that flows by. This mucilage if you examine the Chamber-pot, shall be found to be a glutinous, thick and slippery slime; moreover, that it's dissolvable by heat, and apt to be thickned by cold like phlegm, may be observed in turbid urines, which as long as they continue

warm 33

warm, after they are made, are clear and perspicuous, but a little after growing cold, are turned into turbid and dark, being deprived of the energy of the particles of hot volatil salts, that dissolved the slime; for if you do but hold the urinal a moment to the heat of the fire, or hold it in warm water, they will resume their former shape of clearness. Bubbles that oft swim a top the surface, I judge ought not to be imputed to a flatuous, but lixivious constitution of urine; for ashes, soap and other lixivious things, being dissolved in water, render it subject to turn frothy and bubbly with the least stirring.

The colour, consistency, and contents are chief universals, whence a Physician may extract, what preternaturals lye hidden in the body. The colour discovers the active qualities of the salts, the consistency the state of the serum or whey, and the contents the quantity of the foresaid salts and other excrements, that had performed their office; a further and particular explication of all these, relating to the kinds of Fevors, shall be reserved to the sequel of the book. Lastly, it is to be noted, that in the contents are included the *enema* and *hypostasis*.

## CHAP. IV.

*Concerning the true and Spurious Essence of a Fevor.*

**I**N the first Chapter we had hinted at the definition of a Fevor; what concerns its explication, we have partly referred hither. That a Fevor is a derivative from the nature of fire, is abundantly suggested from its destructive manner of acting, most fierce heat, the tongue and roof of the mouth being crufted with a black smoak, likewise from other symptoms thence proceeding, as thirst, dryness, and roughness of the skin, and inflammation of several parts. Here the Reader is to assume, that the vital *Bitumen* of the heart and the whole body, being kindled into a fire, is the disease or Fevor, or rather that the fiery distemper of the heart and the whole body or part, is the disease; but not the preternatural heat, being that's rather to be counted a symptom, immediately flowing from the disease, in no wise differing from the manner the heat emanates from the fire. Wherefore the definition,

tion, which is extant among Academick Authors, as *Fernelius*, *Sennertus*, and others, ought justly to be rejected. To wit, *A Fevor is a heat against nature, kindled in the heart, and from thence by means of the spirits and blood, diffused throughout the whole body, and doing hurt to all the natural actions.*

The objections against this definition I offer you in these positions. First, I assert, that the essence of a Fevor doth in no wise consist in an universal heat; nor secondly, that the heat, which attends a Fevor, doth not altogether arise from sparks glittering in the heart. The argument that confirms the former, is taken from the *genus* of a Fevor, which is stated a disease; but a disease is said to be the constitution of a part hurt or injured, which kind of saying doth not at all agree with a preternatural heat, that depends on the burning fixt *Bitumen* of a part; or oft on miasms or steams, blown from the heart (the receptacle of the fire) to all or most parts of the body; but those torrid miasms are not to be taken for the disease, but causes, that in process of time, through their heat, may occasion a disease. Here may be offered a probable objection, that a Fevor



is the kindling or heat of the influent spirits of each single or more parts, whose hurt is to be imputed immediately to the heat of the spirits, whence a Fevor may justly be judged a heat. Hereunto must be replied, that the name of a part of the body can in no wise be given to the spirits, because they flow continually, neither are they in any manner permanent, but are assigned for the animation and nutrition of the parts, and for that reason their distemper ought not to be taken for a disease; if notwithstanding the subversion of the temperament of a part should flow from a tumult of the influent spirits, and that thence they should be incapable of performing their offices, nevertheless because it's a mediate affection, and to be derived from the burning of the spirits, it's not to be taken for a disease, but a cause. Secondly, If from the general opinion you have a mind to instance, that the putrid heat of all the parts of the body is a Fevor, to wit a continual putrid one, supposing likewise, that the said heat is risen out of the blood only, being through its means conveyed to the sanguin parts; I answer, it ought not be inferred a disease (since the blood also, because it's a fluent matter, cannot justly deserve the name

name of a part ) but a cause of a disease, or the vehicle of it. Thirdly, The bones, cartilages, and ligaments, are not sensible of heat, neither are they subject to receive any putrid heat, because in a Fevor they are seldom or never observed to be taken with a putrefaction or rottenness; how can then a Fevor be termed a preternatural heat of all the parts? Likewise, Fourthly, Why ought the name of Fevor to be attributed to a fevorish heat more than to a shaking, or fevorish coldness in the beginning of a paroxysm of a Fevor, both the former and the later flowing equally as symptoms from a Fevor? Fifthly, An universal heat is erroneously ascribed to a Fevor, for in a lipyrrious Fevor, a torrid heat doth torment the internal parts, though the externals are cold; moreover it oft happens, that the hands and feet are stiff of cold, and the entrails do in a manner glow with a burning heat. Furthermore, it may be observed, that a Fevor doth sometimes only haunt one single part, as the foot or hand. Neither have I forgotten a certain Fevor, whose heat extended no further than the head and face. Hereunto add, that those particular Fevors are not only inferred, to be such, because of the preternatural

ral heat, but also by reason of the preceding cold, shaking and ulcerous lassitude. Sixthly, those that swell so much with the Doctrine of Fermentation, they do not altogether affirm, that it is a preternatural heat that constitutes a *Fever*, since the forementioned heat doth take its rise from a heap of influent spirits, striving to expel humours and such small bodies as are annoying; which heat ought therefore rather to be judged natural, than against nature.

In the second position we maintain, that the heat, that attends a *Fever*, is not always kindled in the heart, as if the primar hearth were there, which assertion is proved from the kinds of symptomatick Fevors; for the *Fever* that surprises a wounded patient, or one that's detained with an inflammation of an entrail, as the Spleen, Liver or Kidney, certainly it's not first kindled in the heart, but in the part affected, whence afterwards it's dispersed throughout the whole structure. Secondly, If the heart were the only brand of fevorish heat, the blood that passeth through its ventricles should retain a mark of being burnt, and undergo some change of tincture; when on the contrary, thousands that have been bled in Fevors, their blood that was extracted hath appeared

ed to the eye to be of a pure scarlet and florid, until the fourth, and oft until the sixth and eighth day.

In the next paragraph I have thought fit, to please my self with the examination of the vulgar opinion, concerning the common feat of continual putrid Fevors, intimating it to be the blood seething in the vessels, and stained with putrefaction: but how grossly this rabble of Physicians is mistaken, may be extracted from what shall be proposed: First, If the sprout of a continual Fevor were ingrafted on the blood, it would not be so refractory to cure, but consisting of fluid, and moveable elements, by means of alteratives, purgers, diaphoreticks, and emptying the vessels by opening a vein, might in a short time be reduced to its former purity and temperament: moreover, through one nights seething of the blood, nature doth oft expel those thin little bodies, that float in it, and the grosser it casts forth into pustules, botches and other such tumors. Secondly, I cannot grant, that what is stirred by motion, and continual flowing as the blood is, that it is easily taken with putrefaction; for being full of vital spirits, and living heat, it's held in a continual motion. Thirdly, Until the  
third,

third, fourth, sixth, eighth or tenth day, computing from the beginning of the distemper, according to the degree of the height of the Fevor, the blood at the first phlebotomy is extracted pure and florid, as I have observed in hundreds; whence it's evident, that the primar matter of putrefaction, and the seat thereof, is erroneously placed in the blood, though afterwards passing the entrails, it be stained with a malignant quality, loading it self thence with hot Miasms and Salts. Fourthly, pure phlegm, or veiny gelly, being watered with an immoderate quantity of a pale, green, and blew lymph or whey, since it makes two thirds of the blood, in the veins of those, that are troubled with the Dropsie, Green-sickness, and other kinds of diseases, why is not that blood, which is so heterogeneous, and so far remote from a temperature (moisture abounding and the plurality of particles breeding putrefaction) always forced into a fevorish heat? And on the contrary, why are hot and dry temperaments, where choler is abounding, constantly so inclinable to putrid Fevors, whereas dryness doth so particularly resist putrefaction? Summarily, the blood according as I have asserted in the premises,

• since

since upon no pretence it's to be accounted among the parts of the body, doth utterly exclude it self being capable to be a seat, place or part affected. If peradventure you doubt, that I have hitherto receeded from the path of the received doctrine, stating the heart or other entrail the seat in Fevors, you have the liberty to take it from the fountain, what is to be concluded concerning the matter. *Avicen. fen. 1. lib. 4. tract. 2. cap. 43.* dictates thus, *Dicamus quod Febris sanguinis est Febris putredinis, & Febris calefactionis & ebullitionis*, that is, Let us say, that a Fevor of the blood is a Fevor of putrefaction, and a Fevor of heat, and ebullition. Here is to be noted, that the blood is inferred the subject, matter, and seat of a putrid Fevor. Also *Galen. lib. 2. de Cris. cap. 12.* *Manentibus igitur in venis humoribus, continua ex ipsis Febres generantur*, that is, The humors remaining in the veins, continual Fevors are engendered out of them. Likewise, *Aëtius tetrab. 2. Serm. 2. cap. 74.* *Putrescentes igitur humores, aut intra vasa arctati, continuas & nunquam intermittentes usque ad perfectam morbi solutionem Febris efficiunt*, that is, Wherefore humours putrefying, or streightned within the vessels, do cause continual

tinual Fevors, and never intermitting, until the perfect solution of the disease. Here by the way observe, though according to *Galen*, Fevors are seated in the veins, by their name Arteries are also described, as *lib. 1. de Crisib. cap. 7.* it's by him more largely expressed. *Febres omnes sunt passionnes venarum; itaque in Febris omnibus, quoniam venosi sunt generis passionnes, nam arterias in hoc genere comprehendimus, ad urinas precipue attendere oportet:* the English is, All Fevors are passions of the veins; wherefore in all Fevors, because they are passions of the veiny gender, (for we comprhead the arteries also in this gender) we ought chiefly to heed the Urins.

On the other side, they have destined the seat of intermittent Fevors to be without the vessels, as appears here and there by the writings of *Galen* and *Avicen*. Notwithstanding I can scarce apprehend the foundation of these seats, wherefore I desire to be satisfied in this doubt, whether continual Fevors are said to bud forth in the veins, because the blood, that leaps out upon phlebotomy, doth appear hot to the touch, and shews deep red being mixt with a blew, milky, or yellowish whey? But this blood is not different from any other, that's extracted

tracted in an intermittent Fevor, or any other disease. And whether the difference of seats is expounded to be such, because the blood within the vessels, having an immediate commerce with the heart, is capable to foment a strong heat, whereas entrails, that are more remote from the heart, do only by fits profuse those putrid and fevorish steems, and under that shape do occasion an intermittent heat? Certainly not. Moreover, the entrails being tyed to the vessels, are not less commodiously situated, by means of these small chanel, that tend directly to the heart, to foment a fevorish heat, than if the cause were engendred within the foresaid vessels: or whether, because the vessels are of a just capacity, wherein they may receive such a quantity of fevorish matter, as may suffice to nourish a Fevor without intermission, whereas the entrails are stated to be streight, and not provided with a hollownes to retain matter enough.

On the other hand, the entrails according to what the thing requires, ought to ingurgitate a larger quantity of matter, which might suffice to protract an intermittent Fevor, to some months and years, as doth oft happen. But to touch the knot  
of



of the difficulty, the cause of the continuation, intermission, remission, and intention of Fevors, is not to be imputed so much to the quantity, as the quality of the fevorish matter, as hereafter shall be treated more at large. In the precited definition, the heart is idly stated the part primarily affected; for thence would follow, that the greater part of Fevors should be mortal, because the composure of its temperament being once subverted, is not easily restored. Secondly, Suppose an inflammation of the Liver, or other entrail, attended with a Fevor, which do you think the part primarily affected, the Heart or Liver?

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## CHAP. V.

### *Concerning the fopperies of Fermentation.*

**A**lmost every Barber and Plaster-spread-er have got the knack, to buzze every patient in the ear, the song of fermentation, and know how to fit the tone of it to every disease, but chiefly to a Fevor, illustrating the exposition thereof with this commentary, that the blood fermenteth, and the humors are in a fermentation, like-  
wise

wise the ferment of the Heart, Spleen, Liver, and it may be of the Fundament too, if they go not orderly to stool, is depraved; moreover, if a Corn of the Toe doth but ake, the distempered ferment is the cause of it. Summarily, fitting the word *ferment* to every disease, cause and symptom, they conceive the case to be very well handled, and thence tell the Patient, they will expel the disease by correcting the ferment, and so, as if they had done their business mighty well, they send the Patient home swelled with hopes. Concerning this abstruse Philosophy, borrowed from certain theorems of the Wine-press, and chymical notions, *Antonius Guntherus*, *Theobaldus Hoghelandius*, *Felicianus Betera*, *Conringius*, *Martinus Kirger*, and others have professedly treated, whose Treatises if you peruse, you will find the word *fermentation* to serve in divers significations; the one in a large sense gives the description of it, not at all different from Peripatetical mixtion, excepting, that this performs its task by qualities, the other by action and reaction. But *fermentation* in a narrower signification, as it relates to fluids, is stated an effervescency of any liquor, tending to concoction. At present we will examine, whether

whether a Fevor be a fermentation, or effervescency of the blood.

To the resolving of this, we must resume from what hath been said in the foregoing Chapter, that a Fevor, as it is a disease of the body, doth necessarily inhere in a part, as its subject and foundation; but the blood cannot perform the office of a part; therefore neither a Fevor or fermentation can be properly attributed to it. Secondly, Neither can the blood fermenting be probably conceived to be the continent cause of a Fevor, because its fluid mixture is absorbed in a few days, whereas a Fevor is protracted to some weeks. Suppose a fevorish Patient, to contain four and twenty pints of blood in his vessels, whereof a quarter of a pint is consumed every day by abstinence, and dissipated away through the pores into vapors, and some days a whole pint, or at least three quarters, are drawn off by phlebotomy; for it's very familiar amongst the *French*, the first and second opening of a vein, to extract a whole pint of blood, and every bleeding afterward (which is commonly every other day) to take away two Porringers, containing three ounces a piece: by this computation the whole mass should be drawn  
off

off in two weeks or less, and consequently the *fermentation* must be quieted and stoppt, and the Fevor expelled. But on the contrary, if you should extract blood forty times (as I have oft observed in *France* they have done) the height of the heat will not be half a degree abated, but rather augmented. Who would then maintain the blood, boiling through fermentation, to be the cause of a Fevor? However this experiment is observed to be true, if you take off the third part of any liquor that is a fermenting, whether of Wine, Beer, or any other mixture, it will immediately be taken off from working; but oftentimes the blood is tapt off to the half, and sometimes to the last fourth part, without the least quieting of the fermentation, if I may call it so. Possibly you reply, that according as the vessels are emptied by bleeding, sweating, and other torments, they swell up again by the food and drink, that's daily taken. On the contrary, there is a thin Diet ordered to such, as are in a Fevor, neither do most in the whole course of a Fevor, allow their stomach so much, as whereout the sanguifick faculty may engender a pound of blood: add hereunto, that their appetite for fourteen or twenty

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days is quite dejected. But you reply, that they take as much food, as answers, what is consumed; to this I return, that the blood, which is daily ingendred, and newly admitted into the vessels, either it's pure, or stained; if the former, then it ought to dilute, and temperate the fermenting mass, which it doth in no manner do; if the later, it is not to be doubted, but that it hath contracted its stain, from the concocting and depurating entrails; whence follows, that the primar and principal cause is not to be attributed to the blood, but the entrails. Thirdly, It's confirmed by experience, that *fermentation* doth happen to any mixt liquor, and soft compositions, as paste or dow, electuaries, and others, which is observed to be a mild working of the sulphurous and volatil-salin particles, exerting a temperate heat, that attenuates, expands, and dissolves the whole essence, and separates the fuliginous-salin parts from the homogeneous ones, by subliming them into a sharp salin scum; the tartarous and fixt salin particles it precipitates into a mucid and slimy mud. This being observed to be the signification of *fermentation*, according to the true intent and meaning of those, that imposed it on things, that were

to

to be fermented, it seemed indeed a very simple and idle assertion, that whilst the blood doth seeth, boyl, hiss, and burn the hand of him that toucheth it, and occasion a black and sharp steem, being an effect of fire, on the mouth and tongue, that all this should depend on a *fermentation*, and mild heat of the blood. Doth not *fermentation* always tend to concoction, but a Fever oft to corruption and death; and that one and the same word shall signifie two contraries, is it not an absurdity? To express alteration, mixtion, generation, corruption, calefaction, and what not, by the word fermentation, (a word wondrous pregnant) is to set limits to all physical re-searches and inquiries. Neither do they detract less from the art of Physick, who assert a vitiated ferment the cause of a Dropsie, Phthisick, Pleurisie, and of the whole train of diseases; on the correcting whereof (to wit the ferment) every old Wife and Barber-surgeon shall say the stress of the cure doth lie: and is it not then lawful, for this Tribe to vye with fermentitious Physicians, yes and exceed them? How formally and cunningly at this rate is the disease, cause and cure, proposed by every Glisterpipe? What is it at last come to? What necessity is

there, to apply ones study to Anatomy, Botanicks, Physiology, Pathology, and a thousand other things? O wonderful Head-pieces! You will notwithstanding by the way admire, if this notion of *fermentation* be only assumed as a *phenomenon* or supposition (for the thing it self is not yet agreed on) by those that are something higher advanced in Learning, to shew themselves more dextrous in illustrating the causes, extracting of indications, and in the method of curing, yet it is not to be doubted, but that they ship off a greater troop of sick in *Charons Boat*, and deserve a greater freight than the putrid Physicians.

But to the business, let us now be at leisure, to examine the manner and method, that *Fermenters* undertake the cure of continual and intermitent putrid Fevors, what indications they answer unto, and wherein they exceed from putrid Physicians. The *Indicantia*, and *Indicata*, ought to be ranged in this order. The blood too much enraged, or too little moved by *fermentation*, and a vitiated ferment, are the chief *Indicantia*; those things that promote, or quicken the too slack *fermentation*, and temperate it, when too violent, and reduce the ferment, when exceeded from its tempera-

perament, are the *Remedies Indicated*. The vital faculty languishing, and deprived of its spirits, doth indicate a cordial and restorative medicine. The animal faculty being broken, through want of many nights rest, must be relieved with *Opiats*. The Belly if forgetful of its office, must be rowed up with a stimulating suppository, or laxative glyster: neither are the urgent symptoms of a two swelling fermentation, to be neglected. A Phrensie that proceeds from sulphurous steems, fuming up from the fermenting mass, must be allayed by means that revell or draw back from the Brain. Astringent medicines bridle a looseness, and enormous vomiting. Thus far in general, concerning *indications*, taken from their theorems; nevertheless these being waved, the *Fermenters* do follow the method of cure of the putrid Physicians; in posting away their Patients, to the place of their fore-fathers, as shall be recited immediately. That it may be physically illustrated, we ought to premise their practice, being fitted to a particular sick person; whose age, sexe, temperament, former custom of living, season of the year, tenor of their Pulse, state of Urine, urgent symptoms, occasional and procatarctick causes,



and manner of the first assault of the Fevor, what symptoms attended, what symptoms arrived afterwards, manner of breathing; the habit of the Hypochonders, Stomach and Belly; the manner of the look of the sick man, his manner of speech, what habit of body, what usual evacuations are suppressed; whether the Fevor be essential or symptomatick; whether first come, or a relap'e; what disease he was troubled with last, what remedies were applied before the Physicians coming, and many other particulars, that are to be distinctly proposed, all which I say ought to be represented to the serious meditation of any Physician, that is to undertake the cure of a Fevor. But they reced so far from these necessary animadversions, that being sent for to a Patient, having only felt his Pulse, they look upon the Urine, and make some little inquiry concerning the state of his Belly, whether loose or costive, neglecting all other necessary informations, and apply themselves immediately to prescribing; and their first business is, to put the Belly in order, which they endeavour by this following form of a glyster; but I am to advertize you before, concerning the custom, that young Physicians, that are newly  
come

come from the University, diligently repair to the Apothecaries shops, for to inform themselves with the forms and receipts of the Elder Physicians, and being acquainted with them, it happens thence, that every Physician is furnished with the same examples or forms of remedies, neither doth the one go an inch from the road of the other. Wherefore I shall collect you the most received forms, throughout the whole course, for to remove a fever, compiled by our modern ones; afterwards how successfully our age makes use of them, I shall particularly observe. The prescription of a glyster according as it's commonly found in the Shops, is this.

R. *Decoct. commun. pro clyst. vel juxta alios.*

R. *Decoct. Emoll. com. lib. j.*

*Elect. lenit. ℥ j.*

*Ol. com. vel viol.*

*Mel. Mercur. vel Ros. ana ℥ j. vel ij.*

*Sal. com. q. s.*

*m. f. Enem.*

Some there are, that instead of common Salt put in Salt-peter, or *Sal-prunelle*, from half a dram to a dram: which for its

detergent and cooling quality, is far beyond the other; and indeed *Crystal mineral* being added to any sort of glysters, is far more beneficial, because it agreeth so very well with the temperament of the Guts; on the contrary, Sea-salt being of a drying, inflaming, and irritating faculty, is very offensive to the Guts: For this reason the Antients made use of it as well inwardly, in Pills, thick Syrups, Glysters; as outwardly in Oyntments. Some among the *Fermenters* do extreemly oppose the giving of purges, or laxative glysters in Fevors, because they provoke the corrupted excrementitious humours to ferment, whose steems piercing into the vessels, do disturb, and augment the *fermentation* of the Fevor. On the other side the putrid Physicians make this reply to them, that glysters doing their work quick, and without the Vessels, cannot transmit the least breath of heat, nor blow up any steems, the valve of the *Colon* putting a stop to their passage. Lastly, That it is a ready means to cleanse the body, without weakning or fermentation of the humours corrupted without the vessels, which otherwise in process of time, might largely contribute to the malignant matter within the Veins; for it is the  
• judge-

judgement of many, that some Fevors, which at the beginning were only hurtful through their putrefaction, are changed into malignant and mortal, by reason the putrid drabby settlement, which lay hidden in the folds and coats of the guts, is regurgitated into the vessels, and that therefore purging glysters once or twice repeated, ought to be necessarily put into use: afterward they cause a glyster of milk and sugar, to be administred once every day, to soften, deterge, revell, cool, and evacuate. There are those (but are scarce in their wits) that maintain, the foresaid glyster ought to be made out of crude milk, and to be applied cold, conceiving that by boyling, the volatil energetick particles might otherwise be evaporated into the air. But they are unmindful, how hurtful things are to the membranous parts, and the guts, that are actually cold, and that they repel those putrid vapours, that steem out of the hidden places of the mesentery, and guts, to the heart, and the brain. Others are of opinion, one third or half the proportion of water ought to be poured to the boyling milk; afterward putting sugar to it, they administer it warm. Others only simply order milk boyled, and sweetened

ned with sugar, from half a pint to a pint.

The lower region of the body being thus cleansed, two, four, or six hours after, bleeding is to be celebrated in the right arm, which *Fermenters* do sharply oppose, because it doth exhaust the spirits and matter of life, which failing, the *fermentation* and *coction* are thereby much disturbed, and the heterogeneous particles getting the upper hand, is a presage of an unlucky *crisis*. However the greater number of this Sect do not think it safe, to vary from putrid Physicians in this matter, because almost all Fevers are too exorbitant in *fermentation*, and the spirits oppressed by heterogeneous particles, the heat being too much heightned, the skin being constipated, and lockt up through the foot of the pores, all which evils bleeding doth very much abate. These reasons swaying with the prudent, they command a vein should be open'd twice, thrice, or four times, according to the degree of plethory; others tap off the blood every third day, some every other day, until together with the soul they have drawn out the whole.

In the next place they are to bend their force against the matter, fermenting too fiercely, by giving Cordials and Diaphoreticks.

reticks. In this particular the *Fermenters* and the *putrid Physicians* are differing, the later relieving the impaired vital faculty only with cold cordials, as shall be made known to you in another place. The forms of sudorifick Cordials, as they are hung on the Apothecaries files, and according as they have been prescribed by the more famous sort of Physicians, shall now be put down.

R. *Aq. ulmar. citr. tot. lujul. scabios. card. Ben. rut. dracunt.* ( three or four of these ) *ana ʒj.*

*Aq. Theriac. Epidem. ana ʒ ʒʒ. oft ʒj. or ʒj. ʒʒ.*

Some add *Diascord. fr. vel Theriac. Lond. ʒj.*

*Spec. è chel. cancr. comp. ʒij.*

*Syr. garyophyl. vel è suc. citr. ʒj. m. f. Pot. vel. Jul.*

*Capiat cochl. 2. vel 3. altern. hor. vel cochl. 4. quarta quavis hora.*

This prescription though it hath been in use almost an age, some sucking *Fermenters* have thought fit to make exception against the Treacle-water, because vinegar makes a great part of the composition, which

which they say, doth enrage the *fermentation*; though according to the judgement of others, Vinegar doth qualifie the *fermentation*, and coagulate the fermentative particles; moreover, it's adstringent, shuts the pores of the body, and stops all evacuations, for which reasons the use of Vinegar is very much suspected by them; therefore instead of the *Aqua Theriacalis*, they allow to the prescription double the measure of *Aqua Epidemica*, the description whereof is made publick in a small Treatise of the Colledge of London, Printed a good while since; but because the Copies are most dispersed, I shall think it no trouble to set down its description here.

R. Rad. torment. angel. pæon. m. zedoar. glycyr. helen. ana  $\mathfrak{z}\mathfrak{ss}$ . fol. salv. chelidon. maj. rut. summit. rorismar. Absynth. ror. fol. arthemis. pimpinel. Dracunc. Scabios. Agrimon. Melis. Card. Beton. centaur. min. fol. & flor. calend. ana m. j. incidenda incidantur, contundenda contundantur, & digerantur per triduum in Vin. alb. opt. lib. viij. ac destil. in Alemb. vitr. Nonnulli præscriptis adjiciunt cerasa nigra, flor. paralys. papav. Rh. & quid non?

In

In Childrens Fevors, *Aqua scordii composita* is preferred before *Aqua Theriacalis*, or *Aqua Epidemica*, because it is less hot, and consequently less hurtful. Let us halt a while here, to examine, whether the Vinegar being an ingredient in Treacle-water, doth suppress the *fermentation* of a Fevor in the vessels. To those that have but had the least taste of the Chymical art, it doth appear very plain, that fermentation doth arise from a strife there is between the acid, and alcalized, or lixivious salin particles, which in properties are so contrary to each other, that through the deficiency or failing of either of them, the action of *fermentation* is immediately cut off; the same likewise happens, when either doth exceed the other in its just proportion of strength, through which they fall on each other. It is held for a certain truth, that in a burning Fevor the blood is full of lixivious and alcalized salts, wherefore, by giving of a medicine, that is vitriolate, diluted with Vinegar, it doth necessarily happen, through natures ordinary way of working, that the *fermentation* (if any such thing may be granted) is intended in its fury, through the vigor whereof the annoying corpulcles are separated from



from the mass, and expelled thence, whereby at last it is perfectly depurated, and defecated. Moreover that we may lay the case whole open; if the concoction in the stomach be performed by *fermentation* (as it's every where declared by it's Assertors) take notice, that sauces, whereinto Vinegar is poured, (especially if impregnated with the infusion of Capers, Broom-buds, or other raw four things) do set a very sharp edge to it; for as soon as they are ingested, we are troubled with a glowing heat about the Stomach, and Hypochonders, also about the face, and top of the head. Secondly, Treacle-water being tempered with Vinegar, doth become thence more penetrating, and more vigorous in its vertue, whereby insinuating readily into the most inward and central parts of the body, it performs the work of an antifebril medicine. Thirdly, Since this Treacle mixture is unadvisedly composed of many things, that are very hot and sharp, as several spices, *Masterwort*, and some impure Sulphurs, and others, Vinegar doth very much blunt the edge of them, and freeth those Sulphurs, not only of their stink, but impure recrements. Whereby it's apparent, how great an error they are in, that under that pre-  
tence

tence of quieting the *fermentation*, rail against Treacle-water, and *Aqua Apothheriacalis*, because of the acid ingredients. But setting aside these discourses, though I do not contemn Treacle-water for the reasons newly quoted, yet for other causes I look upon it as a medicine of no effect and vertue; for the liquor that's distilled off, from the matter digested in the body of the Still, doth appear to be nothing, but a phlegm impregnated with a small proportion of the vertues of the ingredients, and those obtused too by acids. Secondly, Acids indued with the salin parts of the ingredients it hath attracted, being thence rendered more ponderous, do not pass the helm or alembick, but remain in the bottom; so that the *Fermenters* need not to be stomacht so much at the hurt of these acids, since they are left behind at the bottom. Wherefore those with whom this reason doth take place, make use of Vinegar impregnated only with the vertues of Alexipharms against pestilent and malignant Fevors, setting aside the destilling of it, they hold it to be strongest by digestion and filtration, by means whereof the faculties of both are preserved intire. Likewise those that labour, to extract the volatil salts of Diaphoreticks,

phoreticks, and Alexipharmacals, by distillation, having ordered their infusion in spirit of wine, they destil off the liquor, by all means avoiding the pouring any acids to it; hereof there is an example in the *Aqua Theriacalis* in the *Augustan Dispensatory*, and in that Treacle-water, which is ascribed to *Paracelsus*, mentioned in the *mixtura è tribus in peracutis*. According to this way of reasoning, it is inferred, that the *Aqua Scordii composita* described in the *London Dispensatory*, is much weakned in its vertue, because the acid juices of Sorrel and Citrons, not mounting up to the Helm or Alembick, detain the vertues of the other ingredients within them; though notwithstanding many railing at Treacle-water, because of the Vinegar, make a great noise of the praises of *Aqua Scordii*, as being composed of Acids, that are not restrigent. These I would have to be answered, out of solution of the Problem, to wit, whether Vinegar, as it is added to Treacle-Water, be restrigent; certainly not; for in time its restrictive faculty doth languish away, by being united with the alcalized and volatil salts of the rest of the ingredients, until at length the nature of Vinegar being quite buried, the medicine groweth

groweth *ecphractick* or opening, in the same manner, as Oyl of Vitriol exceeding all others in restriction, and being obtused by the *Alcali* of Salt of Tartar, is now arrived to be a very great opener. Secondly, That astringents are very active (but it is *per accidens*) in removing the obstructions of bodies, especially of such, as are inclined to Fevors, is made evident by this experiment, being confirmed by all mens judgements; Salt of Steel bred out of the stem of Oyl of Vitriol, is not at all different from vitriol it self, since it is manifestly known, that the foresaid salt is oyl of vitriol, coagulated through the hungry matter of Iron, and reduced to its old form and body of Vitriol, but advanced to a higher degree of purity; for Iron growing out of Vitriol, condensed by being separated from its mercurial part, now its late mercurial part, namely Oyl of Vitriol, being returned to it again, is as it were through a new birth reduced to its primitive body of Vitriol; but its impure recrements are rejected. So that hence, though the Salt of Steel is made visibly to be a most special medicine for astriction, nevertheless it is prefer'd for a most potent medicine to remove the obstructions of the

E

Spleen,

Spleen, Liver and Womb. This effect it very successfully performs, by causing a combate and effervescency in the vessels, between the acid and fiery salin parts of the humors, whereby the blood coagulated in the veins is at length dissolved, and that which is thick, is attenuated. Steel prepared with Vinegar (whereby its vitriolate astringent vertue is increased) is esteemed famous against obstructions by all Physicians. Hence you may learn, that all chalybeate and purely vitriolate medicines are *per se* restraining and stopping, but *per accidens* they dissolve and open; wherefore they ought to be used with a great deal of caution by Dogmatick-spagirical Physicians, according as it is illustrated in this following relation. A fermentitious Physician of no mean rank, having given *Crocus Martis* three times to one, that was troubled with a bilious *diarrhæa*, or looseness, and though he had before prescribed him two infusions of *Rhubarb*, and *Mirbalans*, yet had occasioned such gripes in the Guts, pain, and inflammation of the bowels, that increasing his stools as much more, sent the Patient to *Limbo*. On what this unfortunate practice is grounded, you may judge from what hath been premised.

Now

Now it's time, to look back to the place, whence I digressed. The opposition of the Fevor is not only committed to an *antifebril* Cordial medicine, but another that's purely Cordial, is also joyned with it for assistance, thereby to relieve the Heart and Arteries, with a supplement of spirits; in the form as followeth.

R. *Aq. melis. tot. citr. lujul. aur. cerasi*  
*nigr. ana ʒj.*

*Aq. mirabil. ʒvj. tinct. croc. or accord-*  
*ing to others. Spir. menth. ʒij. succ.*  
*kerm. ʒj. or ʒj. ʒ.*

*Syr. garyophyl. others write Syr. è suc.*  
*citr. ʒj.*

*m. f. Pot.*

*Capiat. cochl. 1. or 2. altern. hor.*

Hereunto some add *Confect. Alcherm. or de Hyacinth. ʒj.* also *spec. è chel. cancr. comp. ʒij. or ʒj.*

But such as do not so well approve of these kind of prescriptions, because those distilled waters are so faint, and void of spirits, offer their Patients burnt Claret spiced, and mixt with cordial waters, and syrups. Also raw Rhenish Wine, as appears by this following prescript.

E 2

R. *Aq.*

R. *Aq. Hord. depur. lib. j.*  
*Aq. bor. buglos. viol. ana ℥ ij.*  
*Vin. Rhenan. elect. ℥ iij.*  
*Syr. è suc. citr. Garyophyl. ana ℥ j. ℞.*  
*m. f. Julap.*

*E quo sumat Patiens ℥ iij. tertia quaque  
 hora.*

This is a Julep of [redacted] his composing, as may easily be conjectured by the Wine it contains; for he doth not willingly leave it out of any thing, either for himself or for another; but I imagine he ought to be better versed in that ingredient, since he hath for so many years made it his mothers milk, than not to know, what sort of Rhenish Wine ought to be put in, whether *Bachrach*, *Rinckhower*, *Hochmer*, besides a hundred sorts of Rhenish Wines differing infinitely in strength and quality from each other, but that's entrusted to his Apothecaries palate; but as for the success hereof let that be buried with those that have made use of it.

Cooling Cordials (according as they are called in the common phrase) as the four Cordial-waters, *Aqua frigida Saxonica*, which

which by the former age none was thought like it, and others, are now almost quite grown out of use among the *Fermenters*.

The strength of a Fevor being scarce abated with these helps, all hope is reposed on *alexipharmacal species*, for since the violence of this heat hath granted no kind of truce, this six or eight days, from the stubbornness and continuance of its force, it's now among the vulgar to be termed a malignant Fevor. Of these foresaid *Alexipharmacal species*, or powders, there are examples extant of two forms, the one making mention of pretious stones, pearl, and Bezoar, the other being grounded on the base of *Alexicacal roots*, among whose number the root of *Virginian Serpentary* is in this age extoll'd above all others.

R. *Spec. è chel. cancr. comp. corn. cerv.*  
*n. pr.* or instead thereof, *rad. serpent.*  
*virg ana ʒʒ.*

*Lap. contrajerv. ʒij.*

*m. f. Pulv.*

Hereunto some are pleased to add,

*Trochisc. viper. ʒij.* or *salis viper. ʒj.*

*Cochinil. ʒʒ.*

*Capiat ʒj. quarta vel sexta quavis hora*  
*in Cochl. I. Cordial Fulap.*



Since *Lapis Contrajerva* is so famous among us, I shall here set down its description.

R. Rad. contrajerv. pulv. ℥j. serpent. virgin. ℥ij. ℥ss.

Extract. rad. Angel. tormentil. ana ℥ij.  
Corn. Cerv. ust. C. C. nov. pr. Coral. rubr. chel. cancror. levig. ana ℥j. ℥ss.  
Antimon. Diaphor. ℥iij.

Croc. angl. Lap. Bez. ana ℥j.

Cum gelat. spol. serpent. formentur globuli, sub umbra exsiccandi.

Some add, Trochisc. è viperis ℥j.

Cochinil. ℥ss. vel ℥j.

Ambr. gryf. gr. 8. or 10.

Dos. ℥j. ad ℥ij. & ℥j.

This form I have also oft met with.

R. Spec. confect. liberant. vel Cardiac. magist. vel Diamargar. frig. (one or two of these, or all of them) ana ℥j. magist. perlar. coral. ana ℥ss.  
Lap. Bez. or. gr. 8.  
m. f. Pulv.

Sometimes in this manner.

R. Lap. 5. pretios. ana gr. 15.

Margar. prep. ℥j.

Lap. Bez. ℥ss.

m. f. Pulv.

Dos. gr. 15. vel ℥j.

*Sumenda ter per diem horis medicis in  
cochl. i. Cordial. Julap.*

Others who abound in their own sense, do wonderfully magnifie a certain Cordial Extract, *Extractum Cardiacum*, but not that of *Quercetan*; among these there is one formerly, who was a Captain of a Troop of Horse, but of late years hath practised as a Doctor of Physick, he declares for a certain, that he can readily abate the impression of the most furious malignant Fevors, and that by the sole means of this same *extract*, ascribing the secret of it to himself, whereas it's well known, it was composed by one Doctor *Read*, a famous Physician in his time. It is oft made use of by modern practicers, though with no better success than attends ordinary Cordials.

The description of the *Extractum Cardiacum* is this.

R. *Mithridat. Diascord.*

*Philon. rom. Theriac. Andr.*

*Croc. Angl. Lign. Aloes, rad. Hyoscy-  
am. ana ʒvj.*

*Opii Theb. ʒiij. extrahantur omnia  
seorsim cum spir. vin. q. s. & ex-  
hal. ut f. extr. Dos. à ʒʒ. ad ʒj.  
& ʒʒ. E 4 Pa-*

Patients having passed many nights without sleep, and being grown light-headed, they judge it will be very beneficial, if they assist them with this subjoyned *hypnotick*, to be taken at the hour of rest.

R. *Theriac. Londin.* (being less hurtful, because of its moderate heat) *vel Conserv. lujul.* ʒ ʒ.

*Margar. præp.* ʒ ʒ

*Laudan. opiat. gr.* 2, 3, *vel* 4.

*m. f. Bol.*

*Capiat hora somni.*

All this advice being followed to no purpose, and the fate of the sick patient drawing near, Physicians fly to the so prodigiously cried up *spirit of hartshorn*, as it were to their sacred anchor, giving hereof eight or twelve drops, twice or thrice a day, in a spoonful of cordial Julep; neither doth much time pass, before Phœnigms and Epispastick Emplasters, in testimony of the last unction, are applied to the inside of the arm, a little above the wrists, likewise on the inside of the legs, a little above the ankle, and oft near the arm-pits, and now and then to the nape of the neck. The task they are designed to perform, is to drive

drive out the malignant and venemous matter, under the shape of an *ichor*, or sharp water, into large bladders, from the deepest parts, to the outward skin, which being perforated, *Melilot* plaisters are to be applied, to dry up the moisture. At last they are to bid the Patient his last farewell, by tying live Pigeons, cut through the middle, to the soles of his feet, or pickled Herrings, or sharp Leven, Spurge, Crowfoot root, wild Pellitory, Mustard-seed, black Soap, or brown Salt, one of them, or all, beat together, and so the sick man is left to the disposition of the Stars, in which case some, though very few, after they have lain some hours speechless and senseless, under the shadow of death, they have been raised and awakened by degrees, nature exerting its drowsie strength; others dye with Convulsions, or in a fainting fit.

Modern Practicers do not much matter, what drink their fevorish Patients are to quench their drought with, some bold Physicians allowing them strong beer, others small beer with a tost in it, or the cold and rawness being taken away by warming of it. Some give their Patients thin water grewel to drink, others the decoction of the shavings of Hartshorn, and sometimes

times burnt, or both together. Some allow the decoction of French barley.. Juleps tempered with acids, *sal prunella*., and cooling fyrrups, are among most growm out of use because of the acids, which they suspect for the causes newly alledged.

If you require of me what animadversions I make on the premised practice, I should not frustrate you expectation (though elsewhere, excusing the slenderness of my judgement, I shall use my indeavors in it) were it not, that the *Belgick-German* practice (for there is scarce any difference between the *German* and *Dutch* Practitioners, excepting that the later are more liberal imbleeding, and the former do much use certain antifebril powders) and the *French* method could so conveniently be subjoyned here.

In the *Low-Countries* and in *Germany* a Physician having discovered a continuall Fevor to surprize the Patient, immediately premising a purging Glyster, made out of a pint of *Emollient Decoction*, one ounce or an ounce and half of *Electuary lenitive* or *Catholicon*, with common oyl, or oyl of Violets, Hony, and a little salt, adviseth bleeding out of the right arm, to six, eight, or ten ounces, thereby to take off from the pletho-

ry, to lighten nature of its burden, open the pores that are shut, and remove the obstructions of the bowles. Next day to cleanse the foulness of blood, and to remove the heap of foul humours, that are accumulated in the lower region of the body, he composeth this following, in a most single form of a potion.

R. fol. sen. or. m. ℥ij. ℥iij. vel ʒʒ. sem.  
fenic. d. ʒʒ. vel ʒj.

f. infus. per noct. in aq. cichor. q. s.

In Colat. ℥iij. vel iv. dissolv. man. ca.  
lab. ʒj. vel. ʒj.ʒ. vel. ʒij.

sometimes Syr. ros. fol. ʒj.  
m. f. Pot.

Capiat cras mane cum custodia.

Others make use of the *Cold Infusion*; as they call it, being made out of the said leaves of *Sena*, in the same weight, with or without a corrective, infused all night in mountain water, without fire, dropping into salt or oyl of *Tartar*, ten or fifteen drops, afterwards sweetning the expression with *Manna*, *syrup of Roses laxative*, or *Sugar*.

*Rhubarb* is set aside, because of the heat, that abounds in it, and its binding faculty, after

after it hath done working. Although after this manner they give purges in the beginning of continual Fevors, yet they do not contemn *Hippocrates* his precept  $\pi\acute{\epsilon}\pi\omicron\nu\alpha \phi\alpha\rho\mu\alpha\kappa\epsilon\upsilon\epsilon\iota\nu \kappa\acute{\iota} \kappa\iota\nu\epsilon\iota\nu \eta\nu \mu\grave{\eta} \delta\epsilon\gamma\alpha$ , &c. that is, humors that are concocted, ought to be purged and stirred, not crude ones, unless they swell and run up and down, because they expel only such excrementitious humors, that lye lurking without the vessels in hidden places of the mesentery, and guts, which certainly would never be concocted for, feeding much on roots, cabbage, fallowing, milky diets, butter-milk, and other things, that contain a great deal of excrementitious juice, their bodies do abound with those kind of humours. Wherefore the foresaid law of our great Physiciam doth only relate to humors, floating within the vessels.

Afterwards they order a *Laxative* glyster to be given every other day, for to suppress those violent flames of the Fevor, and frame *Fuleps* out of cooling waters and syrups, and sometimes *Emulsions* out of Almonds and cooling seeds.

The impaired vital faculty they relieve with a *spirituous* potion, after this form, according as their prescriptions here and there

there in the Dutch Apothecaries shops do plainly inform us.

R. *Aq. 4. cordial. ana ʒj.*  
*Aq. cinam. ʒʒʒ. vel ʒʒvj.*  
*Confect. Alkerm. ʒj.*  
*Spec. Diamarg. frig. ʒij.*  
*Syr. è suc. citr. vel granator. ʒj.*  
*m. f. Pot.*

Ofttimes to these cordial waters the same quantity of *Aqua Melissa* is added. Sometimes instead of *Aqua Cinamomi* they put in *Aqua vite Mathioli*; also *Confectio de Hyacintho* instead of *Confectio Alkermes*. Nature moving towards the extremity, they fly usually to this cordial powder.

R. *Spec. Diamarg. frig. ʒʒʒ.*  
*Magist. Perlar.*  
*Coral. ana gr. v.*  
*Lap. Bez. or. gr. iij. vel iv.*  
*m. f. Pulv.*  
*sumendus bis per diem mane*  
*& sero in Fulap. Cord. modico.*

The animal faculty being much broken through want of rest, they cause sleep by this following potion.

R. *Aq.*



R. *Aq. Bor. nymph. pap. Rh. ana* ℥j.  
*Aq. Cinam. ℥ij. Confect. de Hyacinth. ℥j.*  
*Syr. Papav. Rh. ℥j. vel ℥j. ℥.*  
*m. f. Pot.*  
*Capiat hora somni.*

They very seldom make use of Opiats; in this case, being much dissatisfied in their unsubdued narcotick force, especially where the strength of the Patient is scarce proportioned to dissipate it.

The sick body being surpris'd with a phrensie, they draw blood out of the foot, or if his principal faculties are two languishing, they reveal the blood by cupping-glasses, from the brain to the extreame parts. The Fevor declining, and discovering a white sediment in the Urin, they cause an evacuation by purge once or twice.

The *French* subdue putrid and malignant Fevors, by bleeding the first time largely, and afterwards repeat it every other day, to five or six ounces; the days that are between, they prescribe a *laxative* glyster, and sometimes a potion of the infusion of *Sena, Manna, and Cassia* (which later is in great veneration among them, *La bonne Casse* as they call it) *Syrup of Roses laxative,*

*tive*, and *Crystal mineral*. For the critical days they take no notice of them, often saying, that to expect the *Crisis*, is to expect death, and so by drawing of blood, and purging with glysters, they go on very diligently. For their ordinary drink they allow *ptisan*, which is to be sold ready made in the shops all *France* over.

The *Germans* do not differ from the *Dutch*, except that having emptied the body, by purging and bleeding, they propose powders, to expel the febril miasms, and to cool, composed out of *Terra sigil. Bol. Armen. corn. cerv. ust. ras. ebor. rad. tormentil. bistort.* and the like, but before all these they prefer *Pulvis Rubens Pannonicus*, set down in the *Augustan Pharmacopœa*.

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CHAP.

## CHAP. V.

*Shewing that the modern practice of subduing continual putrid Fevors, is barbarous, and killing.*

**T**HAT the practice of *Fermentators* is to be abominated, and that it is killing, who can deny? Since among a great company of fevorish Patients, the greater part whereof are probably strong, young, well flesht-men, not being swelled or retcht in their Hypochonders or Belly, yet scarce the **third** man recovers his former state of health. What must be inferred from hence, when in the rage of a Fevor, though the Physician be sent for at the first minute of the Disease, and that the strength of nature is more than proportioned to subdue the Fevor, nevertheless the poor wretch dieth? yes, let all things be administered according to the most received rules of Physick, let the highest cordial be given, also *Extractum Cardiacum*, *Pearl*, *Bezoar* and the *Spirits of Hartsborn* it self, yet very oft to no purpose, and the Fevors will triumph until the hour of death? But if  
in

in favour of the *Fermentators* it be instanced, that before our *Aesculapius* came to the assistance of the sick man, the flame was kindled to the top, and that the *Fevor* had taken deep rooting, that the malignity of the disease had trodden down the principal or commanding faculties, the cause of the fatal day is not to be imputed to the Physician, nor to his remedies, but to the malignant distemper, too much intruded by too long a stay. Hereunto I reply, notwithstanding that the Physician was at hand, at the very glimpse of the first spark of the *Fevor* (which possibly then was of no such ill aspect) as I hinted just now, nevertheless the case will run to ruine. But on the other hand, if any one that liveth in the Country, be he a Country man, or come from the City, be taken with a *Fevor*, and the care be committed to an old wife, immediately she gives him a certain posset, that is througly favoured with *Carduus* or *Pepper*, and puts him to bed, covering him well with clothes until he fall into a dew sweat; this being once or twice repeated, she commits the rest to nature, wherein she proves so lucky, that out of ten nine, if not all, for the most part get the better of their distemper. Moreover the Divine old man scarce ever gave greater relief to any in a

Fever, than by doing nothing, and committing the whole business to nature, and therefore he oft urgeth that nature be not interrupted in *concoction*. *Aphor. 22. lib. 1.* *μη ἀπὸ κινήσεως, &c.* that is, do not move crude humours, and *Aphor. 24.* of the same book. It were better, if they cannot discover the adequate remedy, to follow *Avicenna's* document, *sen. 4. lib. 1. cap. 1.* *Cum ignoraveris aegritudinem, relinque eam naturæ, quia aut curabit eam, aut manifestabit eam,* that is, when you do not know the disease, leave it to nature, because either she will cure it, or discover it. Also they would contribute far greater advantage to the ease of the sick, by expecting with *Hippocrates* the *crisis*, than by a thousand tricks to circumvent nature; for if they can do no good, let them do no harm at least. But now it is, I am at leisure, particularly to set down the order of this lazy practice. Those that reject glysters in the beginning of a Fever, because they should not blunt the edge of the ferment too much, do not at all perform their duty in the right administering of things, since the rubbish of the body that is lodged about the turnings and windings of the guts, and the hidden places of the mesentery, not being

ing expelled, doth either by profusing steems into the vessels, very remarkably increase the heat, or by putrid particles creeping into the blood, is apt to kindle the Fevor. This rubbish because it is incapable of being concocted, and is lodged without the vessels, does easily yield to a gentle laxative potion, or purging glyster, without any fear of increasing the heat. But since people here are such immoderate devourers of flesh, that the belly being the sink of the whole body, must needs abound with sordid excrements, is not a laxative purge, or Cathartick glyster very necessary? But it must be given in the first preceding days, for afterwards the greatest part of that filth and dirt is carried away into the vessels, by the rapid torrent of the blood, and therefore all purging is to be set aside; for thereby nature would else be drawn from its work, with a great disturbance, and that without the least benefit. Neither is what I have proposed just now contrary to *Hippocrates*, as you may observe, *Aphor. 10. lib. 4. In acutis passionibus eadem die si fieri potest, medicandum, nam in his cunctari malum est*, that is, in all acute passions you must give physick the same day, if possible, for to tarry is hurtful: also

*Aphor. 29. lib. 2.* and in *Aphor. 30. lib. 1.* he gives the reason for it. *Circa initia omnia debiliora, & in statu omnia fortiora, quae purgationem fieri impediunt*, that is, about the beginning all things are at weakest, and about the state at the strongest, which hinder, that a purge should be given. Secondly, all bodies that are inclinable to Fevors, or are fevorish, are for the most part in the beginning oppressed with a *Plethora ad vires*, or a fulness of the vessels, more than their strength can bear, whereby the spirits are pincht, and through too great a condensation grow vehemently hot, the circulation grows slug and dull, and is carried in a disorderly motion, and the pores are stopt; how urgent is the case then, that some blood be taken away immediately: thence the spirits will be able to bestir themselves, the motion of the blood from irregular will become regular, the passages of the skin will be more free, and the heat will be moderated. But since it is not seldom, that a Fevor being subdued by the first bleeding, though not to an absolute extinction of the fiery heat, the sparks raising the flame again, the blood doth swell up a new, and run violently up and down, reason doth like-

wise advise, that the veins are to be deple-  
 nish the second time, that we may arrive  
 to the same effects. But those that indea-  
 vour to venture the opening of a vein the  
 third time, do unpunisht make a playgame  
 of a mans blood; for there is not so great  
 a benefit reaped this third bleeding, as  
 there was by the two former, as I have  
 found by a thousand trials, but the spirits  
 and forces of the sick are barbarously de-  
 stroyed, by taking away their due food and  
 nourishment, and quite ruining their base  
 and foundation; for they inhere in the  
 blood, as their foundation, and subject,  
 and from it they draw life. Moreover,  
 neither is the blood then so turgid and im-  
 petuous, because besides the former sub-  
 straction of blood, the parts of the whole  
 mass are attenuated, melted and dispersed  
 through a great many little caverns and  
 holes, that before were filled. Likewise  
 there is now a close engagement between  
 the vital spirits and the febril corpuscles  
 (what these are shall be told you hereaf-  
 ter) so that if either you disturb the spirits,  
 or exhaust and lessen them by bleeding,  
 the fevorish miasms must necessarily get  
 the victory, and produce death for their  
 trophy. Thousands are killed by the



slaughter of the lancet. That you may understand the case more plainly, I will illustrate it to you by an example of one, that lieth sick of a malignant Fevor, whom should you bleed but a second time, or sometimes but once, you would certainly bring his life into danger, for neither Pulse or Urin do signifie any great heat, that should be the cause of the swelling of the blood, neither are the pores stoppt by an abundance of soot; wherefore there must by no means any blood be taken away, because it doth in no kind of manner, nor through its abundance, annoy the spirits; If however against reason blood should be extracted, the spirits will be so much wasted, that they will be rendred too weak for the encounter. Secondly, since the vessels by opening of a vein, are so swiftly deplenisht, the malignant matter, that stagnates in the capillar vessels, or elsewhere, lieth hidden in remote holes and secret places, is thereby most impetuously drawn into the great vessels, that lead to the principal parts, where joyning with particles of their own nature, do with a joint force fall upon the strong holds of life: certainly this is a most clear demonstration. We must here unty the knots of

two particulars, that were asserted above. The first is the manner of computing the bleedings, whence the first is to be counted, whence the second and third. The other is, why there are but justly two bleedings set down. At the first assault of symptoms, that are derived from the spring of a Fevor, that is not intermittent (as *Hippocrates* here and there calls it, by which name are meant both continual and continent Fevors) the same day there ought some blood be taken away out of the right arm, to quiet and suppress the febril matter, that it may not be mixt with the mass, flowing through the great vessels, nor fiercely fall upon the spirits; for as much as this should happen, so much the quantity of the blood, that is to be extracted, ought to be moderated. Moreover, the measure of blood that is to be drawn away, is to be taken from the degree of the swelling of the blood; for if the degree of *intumescence* or swelling be at the degree of eight, and if unto this degree doth answer the taking away of ten ounces of blood, then if the *intumescence* be at the degree of four, the subtraction of five or six ounces will be proportionable to allay it; and according to this manner you must

make your computation in the others. But where the *Orgasmus*, or turgid working of the febril matter is appeased, and its malignant faculty suppressed, you may safely next day or two days after, by a cathartick potion expel the matter of a Fevor, that is imprisoned in hidden places without the vessels, and in the capillar vessels. In the same manner is a malignant Fevor to be dealt withal at the first assault, though otherwise it would certainly tend to the destruction of life, yet by so managing your affairs, the sick man will be released. There ought a laxative or at least an emollient glyster to be administred before the bleeding. Fevorish patients are oft in the beginning, tortured with a violent shaking, extream vomiting, and frequent fainting, in this case six or eight ounces of blood being extracted out of the veins the same day, the swelling of the blood, the plethory of the vessels, and the violent working of the febril matter have been quite suppressed. But possibly one may reply, that if the blood should be preyed upon, on every appearance of the foresaid accidents, it would be oft lookt upon as a very careless and needless piece of work, when oftentimes those symptoms do of their own accord ( the blood

blood being appeas'd) vanish away in six or eight hours, as useth to happen in inter-mittent Tertians, and some other kind of Fevors. I answer, that in such a case, the overweight of blood is never lightned without great benefit, by opening of a vein, since the forementioned symptoms do issue from a plethory, and a hot burning matter; and granting that the violent working doth settle of its own accord, it will return again upon the least occasion; wherefore to relieve nature, there must necessarily some part of the burden be taken off. Secondly, the nature of an *Orgasmus*, or violent working is well known almost to every experienced Physitian, whether it appears to be superficial and moveable, or permanent; and thence may easily conclude about the necessity of bleeding.

But since it often happens, that sick people do not advise with a Physitian before the second, third, and fourth day, or afterwards, there first ought to be inquired, whether the same, or a greater, or a lesser quantity of blood should be extracted, than if a Physitian had had the occasion, at the first assault, to have given his advice. Secondly, whether nevertheless a Physitian coming the third or fourth day, that

that subtraction of blood ought to be accounted the first, and whether the fifth, sixth, or eight morning after, the opening of a vein ought to be repeated: First there must be considered the degree of concoction; and the ebb of the blood, occasioned by fasting or thinness of diet, must be taken notice of, before any thing can be certainly concluded on. Wherefore take it only for a supposition, if hereafter you are not convinced of the absolute truth thereof, that nature is employed thirteen dayes, and sometimes fifteen days, in concocting the matter of acute Fevors, and afterwards doth endeavour to separate and expel it the fourteenth or sixteenth day, according to the course of the Moon, wherefore (*Hippocrates* pronouncing, *Aphor. 13. l. 2.* Ολοισι κελαις γινεῖ, τετέρισιν ἢ νυξ δυσφορεῖ, ἢ τῆς ἑβδομάδος, that is, those whose *crisis* is growing on, the night before the fit is very troublesom to them) the concoction is brought to the height or ἀκμῆ on the thirteenth, because that is accounted the day, that immediately preceeds the fourteenth, on which according to the dictate of the same *Hippocrates* (*Aphor. 22. lib. 2.* Τὰ ὀξεία τῶν νοσημάτων κείεῖ) ἐν τέταρτις ἢ δέκα ἡμέραις, that is, acute Fevors come to a *crisis* in

in fourteen days) the *crisis* of acute Fevors are wont to happen. Now since the night before the *crisis* all things are very troublesome, it must be, that nature is at that time most busied, and is at the highest point of concoction, which namely is the thirteenth day or night, immediately preceeding the fourteenth day, being the day of the *crisis*, on which, namely the fourteenth day as I hinted now, nature doth gradually separate, and expel the concocted febril matter, by stool, vomit, through the pores of the skin, or hemorrhage, but most frequently by urine, in the shape of a white and heavy sediment, if the concoction be perfect, or reddish if imperfect. Here is to be noted, that *crises* which happen to bodies in hot and thin climates, and whose blood floating in the vessels, is very thin, and the veins free from obstructions, are very rapid, and swift, expelling the concocted matter by stool, or through the pores of the skin, all at once as it were, and with a violence: but those that lie sick in a northern climate, because their blood being thick, muddy and ropy, doth in all parts promote obstructions, and their skin is hard and thick, and the faculty of their guts is dull; for the most part they  
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are freed by having the febril matter gradually sent down to the Kidneys and Bladder. In the mean time it's not to be denied, but that the word *Crisis* by its first imposition doth denote a sudden change with disturbance, either to life or death; wherefore though I said above, that the matter was by a *crisis* gradually expelled, it is to be understood, in respect of a more rapid *crisis* that's proper to hotter countries; and in respect of the lingring solution of the disease, by translation of the matter, it doth justly merit the name of a *Crisis*; for the whole matter is expelled in four or five days, more or less. This by the way. If then the thirteenth day be the top of the concoction, and that the symptoms are gradually intended from the minute of the *augment* or increase, which usually happens to be in true acute Fevers, about the fifth, or seventh day, according to the variation of the Moon, it will not be safe to open a vein past the seventh day, because then the spirits are endeavouring to concoct, and the swelling of the blood is suppressed by fasting (if bleeding was not premised) and thinness of diet; what is it then you will exhaust the veins for? If notwithstanding in the beginning of an acute Fever, (which is defined

to be the first four or six days, because during that time the first appearance of symptoms is scarce altered) the fevorish Patient hath beyond reason and necessity gratified his stomach and appetite, and that thence the turgency of the blood hath been fed, it may be convenient to take away some blood, though it be the eight day; so that those things are to be defined, according to the swelling of the blood, and the decrease thereof by a thin diet; for if so much be consumed by a thin diet in the beginning, or the first four or six days, as is proportionable to once bleeding, it will be advantageous to bleed once besides within the seventh day; but those things are to be left to the judgement of every experienced Physician: yet let him not be unmindful, that bleeding and purging are by *Galen* stated great remedies, on the use whereof life and death doth depend; neither is the former to be less suspected than the latter, wherefore that *Aphorism 29. lib. 2.* that was so prudently dictated, doth relate to both, *viz. δεχουδραν ην νεσαν, ην τι δοκει κινειν κινει;* that is, move at the beginning of diseases, if any thing ought to be moved. Diseases are said to begin, as long as the symptoms of the first assau't continue



nue without alteration, but as soon as they are sensibly intended ( provided there doth not follow a remission presently after ) then they exceed the limits of the beginning and arrive to the *Augment* or increase of the Disease. Thence doth *Galen* also admonish us on the foresaid *Aphorism 29. l. 2.* *Ut citius eveniant coctiones, circa principia melius est evacuare per venæ sectionem & purgationem,* that is, that the concoctions may sooner be performed, it is best to evacuate by bleeding and purging at the beginning. *Avicen* doth oft highly extol bleeding, but at the beginning of a Fevor, *sen. 1. lib. 4. tract. 1. Cap. 33.* writing concerning the cure of a Fevor. *Cum causa est multitudo humorum atque repletio, tum oportet & in principio properes ad phlebotomiam,* that is, when the cause is the abundance of humours, and repletion, then you ought to apply your self to bleeding and that in the beginning. Likewise in another place he saith, *Evacuatio non est aliqua nisi sicut phlebotomia in quacunque hora accidat, & non expectatur crisis neque digestio,* that is, There is no evacuation like bleeding, at whatever hour it happens, and that there be no expectation of a *crisis* or of digestion. *Galen lib. introduct. cap. 3.* discoursing of

Fevors expresseth himself in this manner: *Curatur in principio vena sectione, in statu tam frigida, tam aliorum que refrigerandi vim obtinent potio confert; idem enim semper remedium accipitur, ut quocunque morbi initio sanguinis detractio;* in English thus, it is cured in the beginning by bleeding, at the state by drinking of cold water, and other things that have a power of cooling; the same remedy is always made use of, as also is bleeding at the beginning of the disease; and in another place he declares; *Quod in consilii inopiam deveniunt, qui statim à principio non vacuarunt sanguinem,* that those want advice, who immediately at the beginning have not taken away some blood. *Alexander Trall. lib. 12. c. 2. adviseth thus, Continentes Febres solerte diligentia curari debent, subitoque id faciendum, quod internotitia dictaverit, sive missionem sanguinis, sive expurgationem requirat: maximum enim incommodum est tum omnibus morbis, tum in continentibus dilatio,* which is thus englished, Continent Fevors are to be cured with a prudent diligence, and that must be suddenly done, which your knowledge doth dictate, whether it require bleeding or purging: for delay is the greatest disadvantage

rage to all diseases, and to Fevors. What need is there of words? we have abundantly made the case known by reasons, authorities, and experiments, whence it's evident, how barbarously they act to the ruine of those sick people, that are troubled with a continual putrid, and malignant Fevor, by taking blood away from them about the middle and end of the Augment and State. It is a great truth I shall say, that at the beginning it is life, in the middle and end of the Augment and State it is death.

Against what hath been said an argument might be here taken from what the great master of Physick doth command, *Aphor. 8. lib. 1. viz. Quando morbus constiterit in suo vigore, tunc victu tenuissimo utendum*; that is, when the disease is in its vigour, then you are to use a very thin diet; that the mass of blood may not increase so much as to exceed the power of nature's government; wherefore for the same reason one may take away blood in the vigor, that it may not too much oppress and burden the spirits. The objection is easily refuted; a very thin diet is commended, that the spirits may not be drawn from the concoction whilst they are busied in subduing the Febril matter; but not because of the too  
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great increase of blood, since the mouths of the vessels lye almost flat, and there is rather a greater proportion of it required, to supply thence a greater quantity of spirits.

It is not difficult, to extract from the premises a reason for two bleedings in continual Fevors, since it's to be celebrated in the commencement of the Disease, or the beginning of the augment, though very seldom; for if it be performed as oft as possible at the time of the beginning, namely in the space of four or six dayes, you ought not to open a vein beyond the second time; for there ought to be at least two days between each bleeding, to recover strength; whence it's apparent there is scarce occasion left for a third, unless thereby you intend to annoy nature in the augment, and to cut off from her strength. But if a Fevor be attended with malignity, bleeding ought not to be attempted or repeated without a great deal of caution.

What ought to be done in the beginning of a Fevor hath been hitherto discussed. At present, we must take into consideration the cure of the augment or increase of a Fevor. First of all we must be resolved, whether at the time of the growing  
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of the Fevor the fermentation is to be promoted. Physitians here are blinded in a mist, being utterly ignorant of the stages of Fevors, they follow a heedless and impious practice, daily tainting their hands with the death of their Patients; what compass do they steer by, to arrive at the exact minute of opening a vein, or giving a purge? what mark do they aim at, when they force pouders and cordials on their Patients? and if there should a faculty of suppressing continual putrid and malignant Fevors be allowed them, being ignorant off the manner and punctual time of givingg them, they are capable of doing as much mischief with them, as a mad Barber with a Rasor.

*Hippocrates* being perswaded by this reason, ( which is to be rightly noted) doth take the beginning of his Aphorisms from an observation to be minded above all others in the art of Physick. ὁ βίος βραχύς, ἢ ὁ τέχνη μακρὴ, ὁ δὲ καιρὸς ὀξύς, ἢ ὁ πείρα σφαλερὴ, ἢ ὁ κρίσις χαλεπὴ, that is, life is short, art is long, time is swift, experimenting is dangerous, &c.

It is the third member of this precept, that expresses what is to our purpose, viz. *Time is swift*, that is, the exact opportuni-

ty and occasion is of great moment; especially in acute diseases; for the same medicine in respect of time doth both kill and cure. That a Fevor doth make as it were four stages, vulgar observation tells us. It passeth the first whilst the fevorish matter lieth hidden about the subservient entrails, the Stomach, *Pancreas*, Lungs, the Gall-Bladder, Glandules of the Mesentery, one or all of them, thence vomiting up into the blood certain tumultuous miasms, that force it into a heat. As soon as the foresaid matter is thronged out of its lurking places, and forcibly rushed into the great vessels, the symptoms thereupon raging in heat do forthwith shew a countenance of the augment or increase. And when the whole mine of febril matter is quite floated into the channel of blood, then the *Tripun* or vigour is near at hand. At that time, there is a close ingagement with the febril enemy, and its force being broke, Nature by her victorious arms doth expel those rebellious intestine corpuscles and separated humours into several sinks of the body; the disease in this manner declining, the sick man doth arrive safe and well. This expedition doth contain some particulars very worthy of note. 1. At the first of

the ingagement, nature doth encounter with the Fever at a distance, some steems being only scattered abroad before, the gross of the preternatural matter lodging in the deep places without the vessels, nor at all mixt with the torrent of blood. 2. The Fever increasing, the lesser part of the matter is confused with the blood that flows by, but the greater part doth as yet remain still and quiet in the spring. 3. At the vigour, all preternatural bodies are closely intermixt and confused with the natural. From hence doth shine a light, whereby the bottom of the difficulty wound up in the foregoing discourse may be plainly known and discovered. Wherefore since fermentation doth tend to the same end, concoction doth, namely of subduing the heterogeneous quality of the adventitious minims that are got into the blood; and that whilst the disease is yet in the augment, only part of the Febril matter is crept into the blood, and not thoroughly insinuated into the depth of the forementioned scarlet juice: it will prove a help no ways deceitful, if the sick man doth take a *Diaphoretick* draught, well impregnated with volatil salts, whereby he may be put into a smart sweat, certainly a very proper means

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through which the vital power may free it self from those hurtful corpuscles; since as yet the spirits are numerous and vigorous, and are not so much ingaged by the intestine enemy; whence consequently they have still a power of expelling; the fumes and soot have not yet filled up the passages of the body, nor pores of the skin, being left open for nature's cutaneous evaporation; a part only of the Febril matter is here and there loosely intermixt with the blood, and may easily be forced out thence. From all which it doth plainly appear, and is inferred that fermentation (sic upon the abuse of the word) is in this case to be rendred easie; the liquor of the veins being thereby attenuated, occasion is given to the spirits to fly together to make an united force to grind off the sting of the Febril matter, and thereupon to expel it. But though the fermentation is to be rendred easie, it is by no means to be increased and intended, for that would put the Bitumen of the blood into too high a flame, and through the crackling and vibration of the salts would occasion a very dangerous storm in the blood. Of this nature are almost all the remedies that are proposed by the *Fermenters*; namely *Aqua Epidemica*, Spirits



of Hartshorn, and all the other fiery cordials, as shall hereafter be resolved more at large. Neither do I esteem those reasons I have now produced so much, but that the many experiences whereby I have delivered some hundreds after the manner aforesaid of their continual Fevors without suffering them to come to the height, do more clearly discover the matter.

According to the mark spoken of before let us enquire, what harbour this Rhomb of giving hot cordials by spoonfuls will bring them to; undoubtedly if the Fevor be any thing outragious, there is danger of shipwrack. For things that are taken by spoonfuls contribute matter to the inflammation and fire, increase the matter of the foot, and really stop the pores; moreover, do not concoct the least part of the febril matter, neither do they separate or expel it being concocted. Wherefore if a Fevor is of its own accord carried on to the height without doing any thing, and the febril matter be more closely and intimately knitted with the blood and spirits, and the whole mine be disturbed, and profused into the great vessels, certainly in doing ill, they must speed much worse. What they have acted in the increment, hath just now  
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been shewed; at present pray give your judgement; are your toothless wives in the country more dextrous in curing a Fevor, or *Fermentitious* Physitians? Neither are the sick themselves so void of sense, but that they are sensible, they are precipitated by the burning cordials of Fermentators in the state of their disease into their too early Tombs. The forementioned Cordials derive their burning nature from an impure *Sulphur*, which doth not only plentifully abound in the spirits of wine, the *menstruum* of all those compounded alexipharmacal liquors, but the ingredients themselves, especially the aromatics contain excrementitious *Sulphurs* and impure salts; whence it happens, that those that have liberally taken of them, arrive sooner to the end of their fatal journey. Wherefore it's plain enough, that by these things the fermentation is intended, the mass of blood is forced into a fiercer fire and burning, and the whole sink of the Febril matter, which only partly flows to the blood, and partly remains in its hidden station, is violently sucked up, and drawn in by the circulating juices, and is united with them in every particle; so that to give the prefaced cordials, which increase the fermentation,

and do not at all render it easie, by a most subtil and diaphoretick vertue, is with purpose to kindle the body into a flame, and rob the sick of his life. However that inquiry may not be pretermitted, what admirable effects do issue from the foreinstanced *Aqua Epidemica*, we are to be resolved from the examination of the context of the simples. *Tormentil* Root is in the front, whose power doth reside in a ponderous fixt salt, and for that reason no part of it doth ascend the Alembick. *Liquorish* in this place is termed alexipharmacal, which was never attributed to it by any Physitian, nevertheless it was possibly added, to abate the acrimony of the other ingredients: but since it doth also obtuse the attractive vertue of the *Menstruum*, and render it incapable of attracting the salts of the simples, neither doth the least particle of it climb out of the body to the head of the Still; certainly it ought justly to be rejected hence. Moreover, who but a mad man would commend *Mugwort*, *Agrimony*, *Betony*, and other such like herbs, against the Plague, according as they are inserted by the former age in this composed medicine? These though they use some small force against the venom of the air, yet other

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Alexipharmacals, as long as they are far more deservedly commended, for oppugning this Epidemick venom with all their force, ought to be preferred.

What concerns Spirits of *Hartsborn*, you would stand in a doubt, whether they be more prevalent in their pernicious qualities, or in their ungrateful taste. This latter is taken notice of by all, that have had the occasion of tasting them; the former is very amply asserted from the complaints of those that have used them; for they are no sooner past the throat, but have caused a furious burning in the stomach and entrails, raised the fermentation to the highest pitch, put the whole structure into a fire, and destroyed the spirits and strength of nature. All these evils do proceed from an impure and venomous *sulphur*, that is latent in the spirits of *Hartsborn*, and corroding fiery volatil salt, that is united with the foresaid *sulphur*. Notwithstanding though the foresaid spirits are so virulent and deleterious, they are not quite to be rejected, for experience and authority do witness, that the most mortal venoms, namely, *Antimony*, *Quicksilver*, *Arsenick*, &c. do contain within their bowels an alexipharmacal vertue, which is very power-

powerful in expelling of venom, and other subtil malignities. Wherefore if the spirits of *Hartshorn* by a particular preparation are purged of that virulent *sulphur*, and the force of its corrosive salts extinguisht, there will be remaining only a pure cordial *sulphur*, and a most subtil volatil salt, which by their close union and coalescence do not only contribute strength to the vital spirits, but with an united force first extinguish the malignant miasms, and afterwards expel them. These spirits do not burn and inflame, like others, but consist of a pure ethereal and most penetrating body, and are famed not for intending the fermentation, but rendring it apt and easie, whereon the efficacy of the cure doth chiefly depend.

The fame of *Lapis Contrajerva* against putrid and malignant Fevors is spread among most people, but how deservedly, let those judge, that have made trial of it. The *Contrajerva* roots, which are the base of the composition, besides dregs and a mealy thickness, contain neither volatil, nor fixt salt, that is effectual, nor any quality, that may be discovered by scent or tast; but on the other hand, it is inferred from many experiments, though the root hath

and other hath been given in a double dose to those, that lay sick in fevors, that it scarce did a pins worth of good. The *Virginian* root doth potently heat and kindle the *Bitumen* of the humours; so that it doth not effect so much good by its diaphoretick vertue, as it doth harm by its caustick quality. *Cochenil* grains do recreate the sight by its colour, but not at all the vital spirits by its cordial vertue. Priests do swear on the words of the Gospel, but some Physicians swear more religiously on the stupendious vertues of *Extractum Cardiacum*, described above. But whence such great vertues should proceed, may be lawfully inquired into. Certainly, in all extracts the most active particles do together with the *Menstruum*, that is evaporated, fly away into the air, a gross dreg that is without any soul in it, remaining in the bottom, and constituting the body of the extract; pray tell me, are there not wonderful faculties, for suppressing malignant fevors, hidden in the bowels of such a kind of Extract? Moreover since *Narcotics* are the chiefeft parts of it, the vital spirits being now ingaged at the deepest, and somewhat giving way, are not to be quite cast down and overthrown by such

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Narcoticks, or their strength to be fettered by them. Wherefore those things are to be given with a great deal of caution and scruple, especially to such, as lye languishing, to avoid the throwing them into a sleeping bottomless pit, as most may remember, hath happened to many. Others endeavour to relieve cast down Nature with pretious fragments, *Bezoar stone*, *Pearl*, *Coral*, and shelly medicines, as if they would redeem her for a certain pricee from a deplorable state; but to no purpose for these premised stones, since they do chiefly consist of a ponderous earth, though pure and transparent, being taken inwardly, through their weight sink to the bottom of the stomach, which for that reason they do extreamply burden, and oppress, and occasion obstructions round about. Under what notion they refresh the heart, and vital spirits, and oppugn the malignity, hath not been my luck hitherto to discover; it's true, through their splendor and rayes they recreate the optick, and likewise sympathetically the other animal spirits, but do not in the least strengthen, but by dispersing the sight rather weaken them. When they are reduced into powder, they contain nothing that is volatil, nor

any fixt salt that may be advantageous for the liquor that floats in the stomach to extract, unless they are calcined before. If you instance that the acid liquor of the stomach, which goeth by the name of a *Ferment*, doth extract the tincture out of them, that contains all their energy, and entire faculties, take for answer, that, 1. At the time of a Fevor, the stomach is quite deprived of that acid humour. 2. The tincture of almost all stones are not real tinctures, but alterations and concoctions of the *Menstruum*, proceeding from the matter, that is to be extracted, which notwithstanding doth not communicate the least thing to it, since after the extraction is made, if it be weighed in a scale there is not a grain of its weight lessened. Moreover, what concerns the *Bezoar* stone, I have known seventeen grains of it given to a Vintners child, that was scarce two years old, without the least operation or alteration following upon it. Some that were grown up, who had taken half a dram of it, found no kind of alteration, but an oppression and weight at their stomach; besides I pass by, that the greater part of those stones is fictitious, and counterfeit.



At the conclusion of this chapter, there remains something to be said, concerning the use of *Epispasticks*. According as they are usually applied by Physicians now a days, their greatest benefit is, that a few (namely such as lay ill of Fevors) having undergone the punishment of *Vesicatories*; had recovered their former health, and many that had received the same kind of punishment, were dead. At present ought to be inquired into the matter of fact, whether those few ought rather to bless *Vesicatories* for their recovery, than many others to curse them for being the occasion of their death. The case is to be decided by the consequence; a few that have used *Vesicatories*, have escaped; many that have used *Vesicatories*, have perisht: it may them probably be concluded, that the use of *Vesicatories* is pernicious and mortal. But let us take the reason of the thing into consideration; for the most part, that small number, that have escaped from a continual Fevor, (after the concoction was past, which through occasion of their lowness of strength was not discovered) have had *Vesicatories* applied, which by reason of the concoction and separation have drawn forth a great puddle of salt and sharp water in-

to great bubbles; but those, on whom the precited *Vesicatories* have been affixt, where there hath been no concoction or separation before, have had a small quantity of moisture extracted into low blains, which for the most part is a mortal sign; so that it doth appear thence, that the cause of their cure and recovery is not to be ascribed to the *Vesicatories*, but to the subduction and concoction of the malignant water and heterogeneous humours.

Secondly, in *Epispastick* medicaments the *Cantharides* perform the chief work, the relation of whose properties I judge may be advantageous. They are of a most hot and burning nature, they oft occasion Fevors, great tortures and pains, a disturbance of the humours in the vessels, and a very sharp irritation, which a *dysury* and bloody making of water do oft follow, they are extremely hurtful to the brain and sinews, and suddenly destroy ones strength, so that they are markt with a signature of the most malignant venom, though only applied externally.

Wherefore if *Epispastick* plasters, being thick spread with *Cantharides*, are applied to a Patient, that is ill of a malignant Fevor, at the time of the vigour, when his strength

strength is decayed, do they not increase  
 the Fever, put the malignant humours in-  
 to a rage, heap up one malignity on ano-  
 ther, quite oppress the principal faculties,  
 destroy the forces, and certainly deprive the  
 Patient of his life? Possibly here may be  
 objected, that though *Vesicatories* do occa-  
 sion a great deal of hurt *per se* to a fev-  
 erish body, yet *per accidens* they do abun-  
 dantly of good by exhausting the malig-  
 nant *serum*, and putting the external parts  
 to pain, whereby there is a revulsion made  
 of hurtful humours and steems from the  
 brain. Hereunto is to be replied, that in  
 this case, the blood is most frequently want-  
 ing of moisture (whence the febril fire  
 burneth the more violent) so that it's pos-  
 sible only to attract a very few drops;  
 whereby a heap of very great evils is  
 brought upon the Patient. Secondly, since  
 malignant corpuscles are chiefly seated in fuli-  
 ginous salts, you cannot possibly by any de-  
 vice extract them; for at the time of the  
 state, they are so very closely and intirely  
 folded to the humours, that to draw them  
 asunder, is by no means feasible. That  
 these things are so, is proved by this argu-  
 ment; The Ichor or bloody moisture, that  
 by an Epispastick is attracted outward and  
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the time of declination, or concoction and separation, doth swell out in a great quantity under the blains; which when cut doth leap out, being of a sharp tast, fiery and salt, because it's laden with those foresaid fuliginous and malignant salts; but being expelled at an unseasonable time, appears limpid, insipid and fresh. Moreover I will now tell you, what the vulgar will scarce give credit to; namely, that Vesicatories being applied at the declination to parts, that are not so convenient, have very suddenly snatcht sick Patiens away out of this sublunary orb. A certain person, that was ill of a burning and malignant Fevor, aged thirty two, after he had lain sick fourteen days, not without some signs of perfect concoction and separation, in manner that on the fifteenth he walkt several times up and down his room, being attended with all characters of health, to expel the latent malignity outwards, had by the advice of two fermenting Physitians, at the hour of Rest, large Vesicatory Plaisters applied to the nape of the neck, and the wrists. The following morning the Fevor was bursted out again burning enough, his speech was taken away, and was grown light headed; but that they might make an end of their

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task,

task, on the sixteenth they took the man out of the world. Doubtless the malignant salts being attracted out of the whole body to the brain, and nervous parts, did very suddenly extinguish his forces and spirits.

Many other tragical cases I could produce for testimonials, did not the purpose of a compendious tract dissuade me, wherefore take the precited in lieu of all. It may be stated for a certain, that at the beginning of a malignant Fevor, especially when it hath attracted the seminary of malignity out of the air, (which seldom happens) *Epi-spasticks* being applied to the remote parts, the symptoms have been subdued immediately, and the Fevor extinguisht; but then they were applied within the third or fourth day. Likewise, being affixt to one that is taken with a pestilential infection, they have been very advantageous. In some cases they may also be applyed to convenient parts at the declination.

My business doth only permit me to premise these particulars in this *first Section*; in the second section which will e're long follow, I shall apply my self to give you a description of putrid continual and malignant Fevors, likewise of the Small Pox, and Meazels, by their foundation, subject

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and symptoms, and likewise shall subjoin practical observations, and the true method of cure and remedies. In the third section shall discourse of the division of Fevors, and in particular of intermittent Fevors.

Upon so important an affair as the Practical part of Malignant Fevors, I ought not to make so sudden a recess, as to leave those salutiferous maxims, premised in this Tract, only astipulated with reason, but to recommend them to you confirmed by experience, abstracted from those cures, which for success and happy event are not to be conferred with the vulgar methods. Among the number of them I could here produce, shall only insert some few of the last years date, whence a proof sufficiently evident may easily be reduced.

The last preceding autumn I was called to one Mr. *Van Mildert*, a Dutch Merchant of considerable note, aged about twenty nine, of temperament Pituitous and Melancholick, not robust of constitution, but of a rare texture of body. On the Sunday he was surpris'd with drowsiness and heaviness of his head, a Catarrhe in his throat, an ulcerous lassitude, a *rigor* or shivering and shaking, a nauseousness or in-

H 2                      clinati-

clination to vomit, and some other symptoms dependant on the former: during the first four days he used the prescriptions of one of the elder City Physicians, the chieff whereof, to the best of my memory, directed some vulnerary vegetables for a decoction; another was a decoction of *Carduus B.* in posset ale, intended to move a gentle vomit, and after that, advised bleeding. The fifth day I made my first visit, and found the Patients sense of sight and hearing much diminish'd, his pulse extreamly languid, unequal in motion and debility, a little more frequent than in the state of health, the urine thick, turbid, and a little high coloured; the tongue scabrous, red, dry and fissured; his thirst was so extream, that no quantity of any former drink could in the least abate it. By intervals his rational faculty was perverted with a *Delirium* that would continue several hours. Touching his sleep some dayes and nights he was wholly restless, other dayes soporous and comatick; a case of greater difficulty I have not meet with, neither have I observed any to escape such symptoms, being universally declared mortal, *viz.* the pulse at the beginning extreamly languid, the tendons of the wrists convell'd and vibrating, the animal faculty

supp

supprest and broken, the urine very crude and indigested, &c. This being a malignant Fevor and contagious, (for the Patient had lately conceived the seminary of his distemper at *Amsterdam*, where it was then Epidemick,) certainly is a case that may give evident testimony of the effect of the method premised, and asserts the rationality of the practice thereof. For only at the beginning I ordered a Laxative Glyster, and not after; prescribed an Alexipharmacal Apozem with particular ingredients to allay the fury of those lixivious and absorbing salts, that continually sublimed to the upper part of the stomach, and occasioned his excessive drought, which proved so successful, that in twenty four hours after, no more complaint was made of it, during the whole course of sickness. The sixth, seventh, and eighth day were exhibited greater doses of Alexiterial powders, and decoctions, than afterwards; soon upon this the vital faculty began to revive, and pulsate so, that it might sensibly be perceived by the touch, his urin began to be digested, and was voided in greater quantities. On the eleventh day the urine was perfectly concocted, and the pulsation of the arteries was vigorous; all his sym-



ptoms did much abate in their violence, except the depravation of his rational faculty, which persisted by reason of some febril steems, and calcined salts, that ascended to the brain. It was here, if at any time, that Epispasticks might be of some use in revelling those acrimonious steems, and exhausting part of the saline *serum*, that abounded and was separated from the blood, likewise there being present all the good signs of concoction, seldom doth any ill issue from them. The thirteenth day they were applied to the legs, and arms, according to expectation they attracted a vast quantity of *serum*, which continued to flow copiously for some days after. The Patient was perfectly restored.

The first Aphorism of *Hippocrates*, i. e. *Occasion and opportunity is of great moment*, is in no case so important as in Fevers, especially if malignant; for every day and hour you have an opportunity of applying remedies, that for the most part do cure the distemper; but if you slip this opportunity, and those remedies are advised late, that ought to be applied soon, and those soon, that should be administered late, you must certainly destroy and kill the Patient.

Patient. As for instance, in the case here recited, if Epispasticks had been applied on the tenth or eleventh, before a digestion, or if he had been blooded after the sixth, or if a Purgative Glyster had been made use of near the state of the disease, or if Antifebrils and Alexipharmacals had not been given in the beginning in large quantities, whilst there was strength and spirits to subdue the *materia febrilis*, in all probability this person must have stoopt to the distemper.

The Malignant Fevor, by which Mr. Drakes son in *Hind Court* in *Fleetstreet* was attackt in *August* last, in point of eminent danger and difficulty, doth almost parallel the preceding. He was aged twenty four, and of a sanguine temperament. It was from a pernicious air on board of a ship of war, and the use of hot liquors (which for the avoiding inconveniencies, arising from the nauseous salin vapours of the Sea, most do submit themselves unto) this distemper had taken its growth, and with a speedy career was advanced to a great defect of vital spirits, the arteries scarce giving any testimony of their pulsation; likewise a black scabrous footy tongue, an insatiable drouth, a most piquant burning heat, want

of sleep, anguors, continual jaſtitations, dejection of appetite, nauſeouſneſſes of ſtomach, frequent and oppreſt reſpiration, and an intermittent *delirium* were ſymptoms that were very urgent. The ſeventh day gave an indubious remark of the malignity, the Patients ſkin being univerſally pencill'd with red ſpots, *Petechia rubrae*. The courſe of remedies was thus managed. The ſecond day he was blooded out of the right arm, to nine ounces; the third day received a laxative glyſter in the morning; at four in the afternoon, an Alexiteriall Apozem of *Rad. Scorzon. Biſtort. acetof. fol. ulmar. pimpinel. galeg. dictamn. cret. dracunt. ſem. Hormin. citr.* there was alſo added a ſmall proportion of *ſcordium* and *Absynth. Rom.* which latter ſeems to be the ſole ſpecifick againſt nauſeouſneſſes and vomiting in Fevors. To theſe forementioned were added ſome ſalts and ſpirits to moderate their heat and refine their *ſulphurs*. The firſt, ſecond, and third doſes of this Apozem were very liberal. A day or two after was preſcribed an antilipyrious powder of *Bezoard. mineral. Coral. Terra Sigil. Sal. Prunel. &c.* By which means the body was gradually promoted to a *Diaphoreſis*, and *Diureſis*, and laſtly there appeared

appeared a large *Parotis* or inflammation under his ear, a symptom Pathognomonick to pestilency and malignity, which being suppurated, deterged, and consolidated, the Patient arrived to a perfect state of health. Moreover both in this and the former case, was prescribed a cordial julep, to take by intervals, for the present support of the vital and animal spirits. Likewise twice there was made use of an Opiat. A *Diarrhea*, or looseness survening, or concomitant to a malign Fevor, is judged a symptom as urgent, as any other whatsoever, and doth not only require particular remedies, but oft such, as the malign Fevor doth counterindicate, and consequently must shew a very ill aspect to the life and recovery of the Patient. Such was the case of Mrs. *Read* on *Lambeth Hill*, aged thirty, and of temperament phlegmatick and melancholick, her Fevor was ushered in with a looseness so very importune, that on the ninth day, her Visitors and Neighbours expected her departure: on the same day it was I made my first visit, and having examined, what was prescribed by her former Physitian, (who likewise had a very ill opinion of this distemper) and detecting some great errors in this course, was in hope  
that

that by their rectification, and the prescription of means more rational, I should restore her to former health. I prescribed a Restricting Cordial, Anodyne Glysters, Antifebril Adstringent Powders, and an Alexipharmical Apozem. Thrice also there was an *Hypnotick* given. But the chief means was the method, (which I need not here repeat) that proved so successful, in conquering this dangerous distemper.

I shall forbear inserting the recital of many other cures of this nature, since these are sufficient to convince you of the truth and excellency of this method; and pass over to an observation I have univerrally remarked; that all or most malignant Fevers, though dextrously cured, leave such an impression on the bowels, that thereby within a month, two or three, another distemper is ingendred, that for the most part proves obstinate to cure, and in this particular they imitate the manner of operation of venoms or poysons, which being accidentally taken inward (and though afterward well cured) yet occasion such an impression on the bowels and blood, that in a fortnight or month, or sometime longer, either the Patient loseth his nails, the hair of his head, and the cuticula, or upper

per skin of his body ; or falls into a Jaundice, Consumption, Dysentery, or some other distemper.

The distempers that are posthumous to malignant Fevers, are chiefly a tertian Ague, a Pulmonick Consumption, a Hectick Fever, Rhumatisms, Scurvey, Dysentery, Yellow jaundice, Cachexia, and a Cephalæa.

Among these the Pulmonick Consumption seems to transcend the others, in respect of danger and stubbornness of cure, and doth very frequently grow out of the cinders of a malign Fever.

One Mr. *Martin* a French Merchant, his age not exceeding thirty, and lodging in *Fanchurch street*, partly through a hot temperament of his bowels, that was natural, partly through the *fatigue* of his journey from *Plimouth* hither, and intemperance of diet, fell into the burning flames of a malignant Fever, which his purple spots breaking forth on the seventh day throughout the whole field of his skin, did amply detect, whereunto adjoining his preceding vomiting, and most importune hiccough, his impatient thirst, dry red fissured tongue, deplorable head-ach, flammy urine, and low frequent unequal pulse,

spake

spake the distemper to threaten an ill event. Having ordained his diet to be very thin, and prescribed a laxative Glyster in the morning, being the second day of his Fever; advised eight ounces to be extracted by phlebotomy out of the right arm, at four in the afternoon. The blood appeared very thin, and in point of colour tending towards a blew, whereinto I instilled a few drops of spirits of Nitre, to discover the constitution of it. Upon the commixture, the colour turned to a vitellin citrin; an indication the blood was very sulphurous and hot, and not easily to be reduced to a *Crasis*. Six hours after bleeding, he was to take a dose of this following mixture.

R. Rad. Scorzoner. rec. ℥ij.

fol. ulmar.

lujul.

Rut. Caprar. ana mij.

Sem. Citr. ℥ss.

Contundantur optimè in mortar.

marmor. pistil. lign. sensim

affundendo

Aq. Card. Ben.

scabios.

Ceras. nigr. ana ℥iiij.

*Liquor valide express. digerendo  
calore leni Balnei depuretur, in quo  
dissolv.*

*Syr. Borrage.*

*Melis.*

*sacchar. perl. ana ℥j.*

*m. f. Fulap.*

*Capiat ℥v. bis per diem mane & sero.*

To every dose of this mixture was added half an ounce of my *Aqua Alexiteria*, which wrought so great effects as in few days to extinguish this violent heat, and expel the malignity. His ordinary drink was the decoction of *Hartshorn*, and *Scorzonera* root, sweetned with *syrup* of *Succory* and *Borage*.

His tongue growing very scabrous and foul, he made use of this following collution with great success.

*R. Mucilag. sem. cydonior. ℥iij.*

*Suc. plantag. ℥j.*

*Mell. rosar. ℥vj.*

*Sal. prunel. ℥ij.*

*m. f. Collut.*

*quo saepe colluat os.*



July was scarce begun, before this Patient had quitted his sick bed, and was congratulated by all his acquaintance for the unexpected restitution of his health; But what was usually subsequent to a malignant Fever, happened here also; some three months after, another distemper attempted his lungs, in so violent a manner of coughing, that in a short time the whole body was emaciated, and depredated by a Hectick Fever, against which these remedies were prescribed.

R. Rad. buglos. ʒʒ.

Fujub. sebest. ana Par. ij.

Flor. borrag. violar. Pj.

Glycyrr. ras. ʒj.

Tamarind. ʒiij.

Sem. fœnic. d. ʒij.

Coq. in Aq. Font. q. s.

In Colat. ʒiij.

Dissolve man. Calabr. ʒj.

Syr. ros. sol. ʒʒ.

m. f. Pot.

This operated four times.

The next day I ordered a fontinel to be cut in the left leg above the knee. The  
third

third day he began with this decoction.

R. Rad. Sarsaparil. ℥v.

Lign. santal. citr.

Rasur. Corn. cerv. ana ℥j.

Coq. in. Aq. font. lb. viij. ad consumpt.  
medietat. sub fin. addendo

Rad. Personat. maj. ℥ij.

Lapat. Acut. ℥j.

Fol. Heder. ter.

farfar. ana m. iiij.

Fujub. sebest. ana Par. xv.

Dactyl. enuc. Par. xij.

Passul. mund. ℥iiij.

Glycyr. ras. ℥jss.

Sem. Anis. ℥x.

In Colat. dissolv.

mel. coct. ℥vj.

Sacchar. cand. ℥iiij.

m. f. Apoz.

Capiat ℥iiij. ter per diem horis

medicis.

Besides, an hour before he took the drink  
in the morning, and an hour after at night,

I gave him twenty grains of my

*Specific. antihæctic.* mixt with

a dram of sugar of Roses.

To

To these means we sensibly observed the disease give way daily, by the digestion of the acrimonious matter, and the facil expectoration of it, and at the termination of three weeks his cough was quite ceased, his appetite returned, and began to increase in flesh, and so to enjoy his health, wherein he hath been happy ever since without the least relapse.

Another president of the subsequence of a Dysentery upon a malign Fevor, I shall instance in the distempers of Mr. Cocu, an Elder of the *French Church in London*, whose age was little short of threescore, his temperament bilious and melancholy, and of habit of body very thin and maigre. There was scarce ten weeks interval between a torrid Fevor he had sustained, and a violent bilious diarrhæa, that in the space of two or three days changed into a dysentery, whose fury was discernable in insupportable gripes, and vast discharges of blood by stool: the weak pulsation of his arteries, signified a great impair of the vital faculty. A crazy constitution, a declining age, and a torminous Hæmorrhagious dysentery imposed an obligation on me of proceeding cautiously and gently against the distemper, but withall considering the quick

motion it useth in its tendence to a fatal determination, required medicines, that should avert it, by speedily stopping its career; to the accomplishing of which was prescribed first this following bole.

R. *Rhab. el. pulv.* ʒʒ.

*Bezoard. min.*

*Ter. sigil. ana* gr. xij.

*Sal. Absynth.* gr. viij.

*Laudan. opiat.* gr. j.

*Conseru. ros. vet.* q. s.

*m. f. Boli duo deaurandi*

*quorum capiat unum vesper. sub ingr.*  
*in lect. & alterum sequenti aurora.*

These Boles gave two or three dejections more, than he used to have ordinarily, but without occasioning any gripes; and moving at such great intervals between each stool, did not at all diminish his strength. Likewise sleeping moderately in those intervals rendered those turbulent humours very pacifick, neither did he eject any blood all that day; the following night slept very quietly. The next day the number of his motions was much lessened, but some tincture of Blood was still observable in the ordure. The distemper continued

at this degree some two or three days, and then I gave order the forementioned Boles should be repeated, which put an end to this great malady; for the next day had not above two or three motions. For his ordinary drink was advised this Emulsion.

R. *Amygdal. d. excort.* ʒj.

*Sem. cucurb.* ʒij.

*Sem. cydon.* ʒʒʒ.

*Sem. papav. alb.* ʒʒʒ.

*contund. in mortar. marm. pistil. lign.*

*sensim affundendo Decoct. ras. corn. cerv.*

lb. ij.

*in express. dissolv. sacchar. albi* ʒiiij.

*Aq. cinam.* ʒiiij.

*m. f. Emuls.*

*capiat ad libit.*

This cordial did him great service in supporting his vital faculty.

R. *Aq. rosar.* ʒiiij.

*Aq. menth.*

*Ceras. nigr. ana* ʒʒʒ.

*Aq. Cinam.* ʒʒʒ.

*Spir. menth.* ʒj.

*Confect. Alkerm.* ʒj.

*Syr. cydon.* ʒj.

*cort. citr.* ʒʒʒ.

*m. f.*

*m. f. Fulep.*

*Capiat cochl. ij. altern. hor.*

Those days excepted, on which he took his cathartick bole, he made use of this cordial and adstringent Electuary.

*R. Corn. cerv. ust. ℥j.*

*cui instill. spir. corn.*

*Cerv. rectific. gut. x.*

*& conter. in mortar.*

*Vitr. huic adde*

*Coral. rub. opt. lævig.*

*Ter. sigil.*

*Bezoard. min. ana ℥ss.*

*Croc. angl. gr. ij.*

*Diacydon. s. q. s.*

*m. f. Electuar. pro*

*duabus. dosib. matut. & vespert.*

Since no practice or method of curing a distemper ought to be received, unless it can be justified by the application to several ages and both sexes; I am induced to give you the narrative of a malignant Fever, Captain *Mannings* daughter in *Bell-yard Kingstreet* was afflicted with: her age was between nine and ten years; her temperament sanguine and bilious, habit

of body thin and lean, and in respect of the whole composure weakly. The second day the malignity appeared in a *delirium*, and oppression of the vital faculty; her heat was very great, and drought very urgent. The same day about four in the afternoon I advised, she should bleed about five ounces; out of the right arm; the next morning a glyster was given. Her ordinary drink was this following decoction.

R. Rasur. Corn. cer. ℥j.

Rad. scorzoner. ℥jss.

Tamarind. ℥ss.

Coq. in Aq. font. q. s.

in Colat. lb. ij. dissolv.

Syr. acetos.

borrag. ana ℥jss.

m. f. Apoz.

Capiat ad libit.

Some four hours after bleeding I prescribed an ample dose of an Alexiterial Julep, with twelve drops of *Essentified spirit* of *Hartshorn* dropt into it, the same was to be repeated for two mornings and nights following; the operation of these medicines was signal in a gentle sweat and breathing, which on the seventh day extinguisht the

Fever and malignity. Though this course proved so successful, as to restore her to a perfect health; I am apt to suspect that about the next Autumn she will be troubled with an intermittent Tertian, because malignant Fevers, as I observed before, generally leave an impression on the bowels, through which in a short time another distemper is ingendred. This observation not long since was verified in the tertian ague, one Mr. Pawel a Taylor in King-street Covent Garden was surpris'd with, three months after I had cured him of a very malignant and dangerous Fever. The principal medicine, to which I attributed the cure of this Fever, was spirit of Hartshorn, depurated of its poylonous Sulphur and salt, by a late invented process. That the sulphur and salt I do defecate by the forementioned process, from spirits of Hartshorn, is venomous, appears by these circumstances. 1. The quantity of two scruples is a proportion sufficient to kill a dog. 2. The scent of it doth commonly occasion vomiting, and a raging headach. 3. The spirit of Hartshorn that is thus freed and depurated from this noxious sulphur and salt is far more powerful in provoking sweat and urine in the same quantity and dose,



than the common spirit. Neither doth the said spirit cause that burning heat, anguor, and suffocation, which the common usually doth.

His Tertian Ague, though the paroxysms were durable to ten or twelve hours, and the other symptoms very fierce, yet was easily conquered by taking three doses of my *Pil. Polychrestæ*.

Since a greater number of particulars than two or three is required to render an observation universal, I shall insert one or two more. I have a page or two before given you the journal of the malignant Fever of *Mr. Van Mildert*; it was in him also the preceding observation was confirmed: for about two or three months after his recovery from the said Fever, he was taken with a violent *Rigor*, *i. e.* shivering and shaking, a raging headach, vomiting, a great drought, a bitter tast in his mouth, and after the *Rigor* a very smart heat, and towards the latter part of his paroxysm did suffer a most immoderate sweat, a sign this single tertian Ague would prove very obstinate. After a Laxative Glyster, there was eight ounces of blood drawn out of the right median on the intermittent day. Every

ry other day he took a dose of a *Vinum Medicatum* composed out of Hepaticks and purgatives done up in a bag, and infused in an anatick measure of Rhenish Wine and Succory water. Having used this thrice he intermitted eight or ten days, and then took two doses of Antifebril Pills, which perfectly cured him of this stubborn Tertian.

Mrs. *wilkins* a Tradesmans Wife in *Dru-ry Lane*, three or four days after delivery of a child, was on a suddén taken with a shaking, after that with a very scorching heat, and a opprest frequent respiration; the second night raved, and was very turbulent. This Fevor, which from those symptoms might justly be termed malignant, took its rise from her wine-Cawdels, and supping of hot Spirits, which the good women had given her, to support her strength, whereunto her eating meat, as Pigeons, and other heavy food, did much contribute, in the causing an ebullition of the blood, and suppressing her *Lochia*. I advised her to have the Saphæna opened, for derivation and revulsion, and caused *Suppedanea* to be applied composed of Pickle-herrings, Soap and Salt of Tartar: Prescribed Whey made by instilling some few drops of spirit of Salt into Milk, hereof a half pint to be taken

warm three times a day with xxv drops of essentified spirits of Harts-horn ; the success of these remedies appeared in the quick return of her *purgamenta*, and occasioning a moderate *Diaphoresis*, which soon put a termination to the Fevor. She enjoyed her health near ten weeks, about which time she fell into a melancholy, and a great palpitation of the heart, not without frights and fears. This continued eight days, when the Moon being at full , she grew maniack or Bethlem mad. I ordered she should be kept in a dark room, and be blooded nine ounces out of the right arm, two days after gave her a dose of *Hartmans Antimonial, Cathartick Pills*, which operated very well. Upon three days intermission repeated the same Pills. Next morning she took this following Electuary,

R. *Vitriol. Lunæ fix.*

*Bezoard. Lunar.*

*Sulphur. Antimon. ana ℥ij.*

*sal. succin. ʒʒ.*

*Conserv. Borræg. ʒj.*

*m. f. Elect.*

*Dos. ʒj. mane & sero  
superbibendo seri lactus  
borraginati ʒvj.*

For

For her ordinary drink one ounce of *Tinctura Antimaniaca* was added to six gallons of small ale. Her hair was shaved off, and every morning fomented with the decoction of *Marsh Mallows, Violet Leaves, Pellitory, St. Johns and Charnomil flowers*, whereunto was affused some *spirit of Amber*. There was also an issue made above the left knee; the use hereof in eight and twenty days did restore her to her former senses, and perfectly freed her from that distraction, so that she hath never been troubled with it since. The malignant Fevor I formerly cured Mrs. *Lamot* of (whose Husband is a Merchant in *Thames street*, near *Fishmongers Hall*,) and some weeks after a violent *Rhumatism* following, which was removed by two bleedings and a dose or two of *Hydrotick Pills*, is a farther confirmation to me of the preceding observation, which to illustrate by a greater number of instances I judge is needless; and therefore shall proceed to recommend to you a remark of use so important, that it may gain the Physitian repute and save the lives of many Patients. The observation is such that it gives me occasion to admire so many preceding ages have so grossly erred in their practice, and doth likewise detect the cause  
why

why malignant, and indeed most Synochical Fevors prove so oft mortal.

It is an universal theorem, that in these Northern Climates Fevors are terminated not critically, but slowly and gradually, by sweat and urine, (*per Diaphoresin & Diuresin*) Through the former, *viz.* sweat, the salin volatil, and fuliginous matter is expelled; through the latter, namely urine, the fixt salin and lixiviated matter is excern'd. To accomplish this usually (as I said before) are prescribed Diaphoreticks, as *Aqua Epidemica*, *Theriacalis*, *Scordii Composita*, &c. of one, or more of these, the measure of an ounce or two is mixed with the same proportion of Alexiterial simple waters, and hereof two or three spoonfuls is to be given, every second, third, or fourth hour, according to the *Capricio* of the Physitian, undoubtedly the effect doth not answer his expectation, and no sweat appears; upon this it may be double the quantity is to be used, and yet not a drop of sweat is forced out; then apologizes your Doctor for himself, and tells you, if the Patient could but be brought to sweat, he would soon mend, and further prognosticates, if he doth not fall into a sweat by to morrow, or it may be next day,

day, he is a dead man, and so *Buenas Noches*. Now I will render it as evident to you, as the light of the Sun, that Mr. Doctor is the cause of this mans death, that is to be understood, *κατὰ πολὺ*. There being nothing more familiar among the fermentators, than to explain their notions by theorems taken from the Brewhouse, and Kitchen, I shall make use of arguments desumed from the same Categories. There is possibly a piece of meat to be prepared for to be eaten, which to maturate or take away the crudity of it, to mollifie or render it tender, to dissolve and to purge it from its filth and impurity, is to be boiled; if you put to it salt, wine, or other ingredients, and there be not a sufficient proportion of water, or that the water boileth away too much, especially if the meat be left dry, it will not only harden, but be burned, smell of adustion or empyreum and soot, and be entirely corrupted and spoiled; whereas if it had been supplied with water, the meat would have been softned, concocted, and depurated from its recrements and impurities, which it casts forth into a scum. The case is not different in the blood, that boyelth up in the veins and arteries of fevorish Patients, which being full of salin, adust, and other

other heterogeneous particles, is by ebullition to be depurated of the said impurities; if then the blood wanteth water or *serum*, to dissolve those saline particles, it must necessarily grow dry, coagulate, and be burnt up; and consequently death must be the unavoidable issue. Now observe, that a Patient, that hath been broyling under a continual Fevor for eight or ten days or longer, his entrails scorcht and parcht, his blood dried up, and affected with an empyreum, how impossible it is, he should be put into a sweat by hot cordials though diaphoretick, as *Aqua Epidemica*, *Theriacal. lap. Contrajerv.* to be given every third or fourth hour, by spoonfuls, or scruples. These certainly must render the blood hotter and dryer, and totally absorb the remaining moisture. The infallible way to prescribe a remedy to Patients of this nature, is, to observe that for to cast one into a sweat, you are to consider the subject, the matter of sweat, the efficient of sweat, the several causes that hinder, &c. but chiefly the matter of sweat and the efficient. The matter is the superfluous serosity of the blood. The efficient is the spirits, that expel the foresaid serosity to the circumference. These two are nearest causes, without both which

which at the same time no sweat can be procured; for if we have only abundance of spirits, and no abounding moisture, the spirits will be provoked into a greater rage and force, and consequently if there be any moisture remaining, they will absorb that, and so quite exsiccate the body; this is that end, which the Fermentators and the Putrid Physitians attain by their *Cochleatim* cordials.

The indication drawn hence doth direct, that to procure sweat (which as I said before, is a common terminator of malign Fevors) is to moisten the body well with appropriate Juleps or Apozems. Which done, give but two drams of any alexipharmal water, or five or six drops of spirit of Hartshorn rectified, and you shall certainly cause an abundant sweat.

In the next place, consider though there be moisture sufficient, to subminister matter for sweat (as sometimes there is in malign Fevors) there either may be a defect of spirits, or the spirits may be opprest by the malignity, and in a manner rendred languid, or drowned by moisture too much abounding; then in this case Putrid Physitians do commit a killing error, in forcing the Patient to swallow down their acid Juleps and Apozems.



Apozems. The indication desumed hence doth direct so subtil cordials, as through their penetrability may insinuate into the most intime effuges of the body, and disintangle the spirits from those malign particles, that oppress them, which done, they will soon expel their malign enemies through the pores by sweat. But since nothing can illustrate this point more than experience, I will give you a most convincing instance. I was not long since called out out of my bed to see the child of Mr. *Harvey* in *Fetter lane* end next *Holborn*, who I was told lay a dying. The child was two years and an half old or almost three. I found she fetcht her breath with great difficulty, her Pulse did beat convulsive, vibrating, and extreamly frequent, as in like cases it usually beateth, some two or three hours before death. She was delirious not knowing any, that were used to be about her, her eyes were very hollow, dim and very slow in motion, her face was pale and cadaverous. I examined how she had been the day before, I was told, that she had a high colour, had been very burning, and was very drougthy, and drousie. She had been ill some four or five days. After I had examined her mouth and belly, I

soon

soon understood what it was, *viz.* a malignant Fevor occasioned by the Small Pox, which nature could not cast forth for want of moisture; for hot cordials she had taken in abundance, almost every half hour, and would undoubtedly have been dead in three hours more had they gone on in that method. I prescribed four or five drops of rectified spirits of Hartshorn with a grain two or three of *Bezoard. mineral.* and a dram of *Aq. Scordii comp.* to be given in a large draught of pure posset drink; in less than two hours the Small Pox appeared, and she was put into a tolerable sweat, then caused two Epispasticks to be applied to the Wrists, which had singularly performed their operation, by extracting a great proportion of malignant serosity. By next morning her senses were returned, her aspect appeared florid and vivid, her Fevor very much abated, and all her malignant symptoms vanished, insomuch that within two or three days she was perfectly recovered.

Some other observations I must refer to the next opportunity, in the mean time I wish Physitians would prefer experience before their opiniater notions.

F I N I S.

I was informed that it was very dangerous  
 and that it occurred by the Small Pox  
 which sometimes does not last long for want  
 of the virus; for her condition the physician  
 in attendance, a most every fallowing, and  
 would undoubtedly have been a fatal  
 if she had not had the virus on in  
 that I prescribed four or five drops of  
 distilled spirits of Marshmallus with a grain two  
 or three of Balsam of Turkey, and a dram  
 of Symplicium to be given in a large  
 draught of pure distilled water; in less than  
 two hours the Small Pox appeared, and the  
 was put into a tolerable heat, then can-  
 led two spiriticks to be applied to the  
 Warts which had irregularly performed  
 their operation by extracting a great pro-  
 portion of the humors thereby, by the  
 turning her senses were returned, her  
 diet, and food and voids her Food  
 very much abated, and all her motions  
 were very weak, inasmuch that within  
 two or three days she was perfectly reco-  
 vered.

