An essay towards an improvement in the cure of those diseases which are the cause of fevers / [Thomas Kirkland].

AN

ESSAY

TOWARDS

AN IMPROVEMENT

IN

The Cure of thoſe DISEASES which are the CAUSE of FEVERS.

[Price Eighteen Pence.]

AN ESSAY TOWARDS AN IMPROVEMENT In the CURE of thoſe DISEASES Which are the CAUSE of FEVERS.

By THOMAS KIRKLAND, Surgeon.

" We muſt remove every thing injurious, and ſupply
" Nature with what is wanting to perform a Cure."
Baron VAN SWIETEN.

LONDON,
Printed for J. DODSLEY, in Pall-mall.
MDCCLXVII.

PREFACE.

AMONGST all the writers upon the uſe of cold air, and cold water, in the cure of fevers; no one, that I know of, ſeems to have properly examined, explained, or extended the uſe of this important practice.

I therefore willingly take this opportunity of offering the following ESSAY; for peoples minds being prepared by what has already been written upon this ſubject, there is now a probability of a doctrine being received, which ſome time ſince would, perhaps, have been rejected; as we have a multiplicity of inſtances, where truth has been over-looked, or born down,

down, for no other reaſon, than its being contrary to an old eſtabliſhed theory.

WE are told by phyſicians themſelves, that ſurgery, the moſt ancient branch of medicine, eaſily leads to a true knowledge in phyſick, it being of the higheſt uſe towards the cure of internal diſeaſes, to examine and compare the maladies which are ſeated externally *.—By which method, together with calling to mind what the ancients have ſaid upon this ſubject, and by long obſerving the effects of *cold* in fevers, the following plan took its riſe.—Nor, beſides the objections ariſing from facts, which daily preſent themſelves, againſt the preſent theory on theſe diſorders; is authority want-

* Baron Van Swieten, Comm. on Boerh. Pref. to Sect. 145.

ing, for making an attempt to introduce a new doctrine; as ſeveral ſenſible phyſical writers aſſert, "that, in "order to diſembroil the theory on "fevers, which is a perfect *chaos*, "we muſt renounce every thing that "has hitherto been ſaid upon them, "and go to work upon a new foun-"dation †."—How far I have ſucceeded, and what amendments are neceſſary to render this ſketch perfect, time and experience will ſhew. Nor will any one more gladly contribute towards an inveſtigation of truth than the Author.

† See Lieutaud, Precis de la Medicine, and others.

AN ESSAY TOWARDS AN IMPROVEMENT IN The Cure of thoſe DISEASES which are the CAUSE of FEVERS.

INTRODUCTION.

IT has been an opinion generally received, that a fever is an effort of nature to expel ſome morbific matter from the blood, and thereby to reſtore the body to a ſtate of health; and which ſeemed to have been evinced by eruptive fevers, where the fever ceaſes upon the morbific matter being expelled to the ſurface of the body.

HOWEVER, it does not certainly follow that the matter is thrown off by the fever; and if we pay a due regard to facts, we ſurely have the fulleſt teſtimony poſſible to prove the falſity of this opinion: for a fe-

ver, as will hereafter appear, ſo far from being an effort of nature to aſſiſt herſelf, *increaſes* and *protracts* the diſeaſe.——And that an immediate extinction of the fever, if poſſible, is the ſureſt and moſt rational method of removing the diſorder, by which it was cauſed.——Nor does a recovery, where the fever is not ſuppreſſed, prove any thing to the contrary: for nature, in ſome conſtitutions, may be able to expel the morbific matter, in oppoſition to every obſtacle: while in a much greater number the fever overbalances every effort of nature, and deſtroys the patient.—And a change of conſtitution for the better, which ſometimes happens after a fever, does not ſeem owing to the fever; but to the Materia Morbi acting the part of a powerful medicine.

CERTAINLY the ſecretions and excretions are beſt performed in a regular ſtate of health; and is it not more likely that morbific matter will be carried out of the body, when the circulation of the blood is regular, and the fluids in a tranquil ſtate, than when they are hurried *quaque verſum* by a violent commotion of the blood?—It would be impoſſible to ſeparate water and

oil

oil in violent agitation; but if the motion was gentle, they might be ſeparated by ſtrainers ſuited to the purpoſe.—Again, if the fluids are too thick to paſs the ſmall veſſels, or are obſtructed by error of place, it is agreed, and may be proved by an inflamed eye, or any other external inflammation, that an increaſed impulſe, ſo far from removing, increaſes the viſcidity and obſtruction.—And if the blood has a putrid tendency, the putrefaction is alſo increaſed during the fever; for tho' the ſymptoms of inflammation at firſt in particular habits appear, yet the coheſion of the blood globules is ſoon deſtroyed, and a diſſolution of the blood *&c.* follows.—On the other hand, if we ſuppoſe the febrile matter to be ſeparated by an inteſtine motion, or (as ſome call it) a ferment in the fluids; yet the fever is againſt us; as it conſtantly tends to remix this heterogeneous matter, that might otherwiſe have been expelled.—Ought it not therefore to be ſuppreſſed, that nature may remove the diſeaſe without interruption?

BUT we will produce our evidence in favour of this opinion, together with ſuch reflections as have occurred to us, during our enquiry into this matter: entirely ſubmit-

ting the whole to the judgment of thoſe, who are above being wedded to old opinions, merely becauſe they have been long taught and approved; and whoſe minds are open to truth, from whatever quarter it may come.

The Ancients extinguiſhed Fevers by Cold.

HIPPOCRATES [a] ſometimes extinguiſhed fevers by cold; for though he attempted to procure a ſweat in the beginning of them, yet when a bilious fever did not give way to the uſual methods, he ordered the patient, on the tenth day, to drink as much cold water as he had a mind; and if it did not then *remit*, but ſtill continued, he adviſed, along with other medicines, water to be drunk which was *extremely cold* [b].——In acute fevers, where the patient is very thirſty, he ſays, cold water is of great uſe, if given 'till it makes him vomit [c]: and he has left a caſe of an acute fever, which ſeized a woman in child-bed, attended with loſs of appetite, and vehe-

[a] Lib. de. Morbis, Sect. ii.

[b] Πίνειν ὕδωρ ὡς ψυχρότατον.

[c] De Mor. popul. Lib. iv. ſub finem.

ment

ment thirſt, where the *coldeſt water* did ſervice [d].

CELSUS [e] ſays, " if an ardent fever is " very violent, no medical potion is to be " given, but, during the paroxyſms, the " patient muſt be cooled by water and oil, " which are to be ſhaken together, till they " become white.—He is alſo to be kept " in a ſpacious room, where he can draw " a great deal of pure air, and not be ſuffo- " cated by many cloaths, but be covered " very lightly. Vine leaves alſo, dipped in " cold water, may be put upon his ſtomach." And after giving directions about food, and the treatment of ſome particular ſymptoms, he adds, " when the diſtemper is at the " height, but not before the fourth day, " after a great thirſt preceding, cold water " is to be given copiouſly; that he may drink " even beyond ſatiety; and when the belly " and præcordia are filled above meaſure, " and *ſufficiently cooled*, he ought to vomit. " —Some indeed do not inſiſt upon vomit- " ing, but make uſe of cold water, as a " medicine, given only to ſatiety. After

[d] Ib. Lib. v.

[e] Lib. iii. cap. 7.

" either

" either of theſe methods, he is to be well " covered with cloaths, and laid ſo as to " go to ſleep.—And commonly after long " thirſt, and wakefulneſs, after being ſati- " ated with full draughts, after a *remiſſion* " *of heat*, a ſound and long ſleep comes on, " by means of which a great ſweat breaks " out, and that is a moſt immediate relief."

GALEN [f], when a putrid fever is very violent, forbids every thing that will rarefy the habit, and recommends cold water as the propereſt drink, unleſs particular circumſtances, which he mentions, forbid its uſe. And ſays, " it is a *perpetual* remedy againſt " the fever *itſelf*, unleſs it be aſſiſted by the " putrid humours being evacuated, by urine, " ſtool, or ſweat." And after taking notice of different methods of treatment, when ſigns of concoction appear, and by what means concoction is performed; he ſays, " Wherefore, if the natural faculties " are ſtrong, the fever ardent, and there " are evident ſigns of concoction, you " ought boldly to give the patient cold " water; for it is manifeſt that ſuch a one

[f] Method. Medend. Lib. ii. cap. 9 & 11.

" is

" is not old, who is endowed with all the " ſtrength we have mentioned.—But if he " is in a good habit of body, and the ſtate " of the air be hot and dry, it will not be " any way injurious, if you ſend him into " a cold bath; for taking this opportunity, " when the ſick have gone into cold water, " they have all immediately ſweat, and " ſome have had a bilious ſtool.

" If the fever is moderate, the patient " weak, and ſigns of concoction appear, " the bath and a draught of wine are ſer- " viceable, with rarefying ointments, eſpe- " cially when the air is cold. But it ſel- " dom happens that either cold bathing, " or cold potions, are required in ſuch a " ſtate of the air, becauſe a conſtant inſpi- " ration of cold air is alone ſufficient to " cool the patient; and if the heat conti- " nues violent in this ſituation, there are " little hopes of his recovery."

Paulus [r], who eſpouſed the opinion that ardent fevers were cauſed by bilious humours, ſays, " They may either be ex- " creted, by ſweat, vomiting, ſtool, or

[r] Lib. ii. cap. 30. & 28.

" urine,

" urine, or *extinguiſhed* by cold water, by " which we have wholly cured burning " fevers:" And adds, " that the bath alone " is of uſe to thoſe, who labour under an " ardent fever, without an inflammation, " tumour, or eryſipelas."

RHAZES ſays, " In continual fevers, the " patient ought never to deſiſt from the " uſe of cold water; for I have found by " experience, that more have been ſaved " by drinking than refraining from it. And " to omit the *extinction* of the fire, is to " ſuffer the patient to run headlong to de- " ſtruction [h]."

AVICENNA [i], in the cure of peſtilential fevers, after ſpeaking of evacuations, and recommending whatever could contribute to render the air in the ſick perſon's houſe cool, pure, and odoriferous, amongſt other medicines, adviſes a *very large quantity* of cold water, which, he ſays, *ſuddenly* gives great aſſiſtance. But, if drunk in a ſmall quantity, it conſequently excites heat.

[h] This I have collected from Lommius, not having an original Latin copy by me. Sect. iii. cap. 2.

[i] Lib. iv. Tract. iv. cap. 4.

MUCH more to the ſame purpoſe may be found in the ancient writers on phyſick; but theſe ſufficiently ſhew, that they often extinguiſhed fevers by cold; for certainly the quantity of cold water HIPPOCRATES, CELSUS, AVICENNA, *&c.* gave, muſt immediately render all the neighbouring parts to the ſtomach cold, and thus cool the blood and quiet its increaſed motion. And are not we to conſider the ſweat, and bilious ſtools, which followed upon drinking cold water, and cold bathing, as the conſequence of the fever being ſubdued, and nature thereby being left at liberty to diſcharge the morbific matter without oppoſition?— CELSUS expreſsly ſays, "A long ſound ſleep "comes on, and ſweat breaks out *after a* "*remiſſion* of heat:" and when the fever was not abated by cold, GALEN thought there were not any hopes of recovery.

HIPPOCRATES, we ſee, increaſed the degree of cold, in proportion to the violence of the fever; and his intention is very evident, when we reflect upon what he has ſaid of cold potions in theſe diſorders [k]; for after obſerving, "That ſome pro-

[k] De Morb. Lib. iii. Frigefact. potiones in febre ardenti.

" mote urine, others ſtool, ſome both, " and others neither;" he adds, " Some " only cool in the ſame manner, as when " cold water is poured into a veſſel of hot " water, or when the veſſel itſelf is ex- " poſed to the cold wind."—And is it not probable, that with this intention, he uſed water which was *extremely cold?*

UPON the whole, it ſeems evident, that all the writers mentioned expected, like PAULUS, to extinguiſh the fever by cold. And as this practice was continued *full fifteen hundred* years, there is reaſon to think, that it was often uſed with ſucceſs.—Indeed, I know the writers a long time after GALEN were mere copiers; and equally imitated the bad, as well as good practice, as I may perhaps ſhew in a work, which I have ſome thoughts of ſhortly offering to the chirurgical readers.—Yet as the uſe of cold, in the cure of fevers, was adopted by HIPPOCRATES and CELSUS: and as we have the independent teſtimony of men in our own times, proving the ſame fact; there is the ſtrongeſt reaſon poſſible to think that the practice was well founded.

The Practice of the Moderns, compared with the Ancients.

THE Perſian and Neapolitan phyſicians [l], we ſee at this day, cure ardent fevers by an extinction of heat, in the very manner of the ancients; proportioning the degree of cold to the degree of heat, and continuing its uſe, till the abatement of *inward heat* and the pulſe foretel, that the diſorder is entirely ſubdued.

DOCTOR HANCOCK [m] had learnt, that cold water, by abating the rarefaction of the blood [n], would at once cure a fever [o]; and though, in order to make his practice correſpond with the theory Dr. Mead had advanced, he overlooks this point, and attributes his ſucceſs to the ſweat, which drinking cold water in the end produced; yet was not this owing to his firſt extinguiſhing heat?——And were not the good effects which Dr. Johnſon obſerved in thoſe who

[l] See Dr. Glaſs's Letters to Dr. Baker.

[m] Febrifugum magnum.

[n] See his Preface.

[o] This may be gathered from the Motto he choſe from Dr. Pitcairn.

were allowed to drink freely of cold water, owing to the ſame cauſe[p]?—In Scotland[q], "a "lady well ſtricken in years," was cured of an ardent fever, by immerſion in cold water.—Some late inoculators, by expoſing many thouſands of their patients to the cold air, giving cold water to drink, and ſtirring them about during the eruption, ſeem to extinguiſh the fever; and nature, not being diſturbed, nor the quantity of the diſeaſe increaſed by violent motion, eaſily, and with very little diſorder, expels in ſmall quantity the morbific matter; if we except ſome particular inſtances, where the fever has been ſmart, ſeemingly from a very great degree of irritability in the habit.—A ſimilar effect has followed the ſame kind of treatment in the natural ſmall pox[r].—An inoculator[s], who was fond of ſweating his patients, and excluding the cold air during the eruption, confeſſes, "that they have the diſtemper "in the ſlighteſt manner in the winter, "when the cold is moſt intenſe." And is not there reaſon to think, that in all the caſes,

[p] Diſſert. on Epidem. Fevers, p. 50.
[q] Edin. Med. Eſſ. Vol. VI. p. 363.
[r] See Dr. Dimſdale on Inoculation.
[s] See Dr. Glaſs's Letters to Dr. Baker, p. 8.

which

which Dr. Baker [t] has kindly collected, the cure was in conſequence of the patients being revived, and their fever being prevented, or extinguiſhed, by cold air?

Difference betwixt Ventilation, and expoſing the Patients to Cold Air.

IT has indeed been imagined, that the advantages of ventilation ariſe from changing the air, which (in rooms) is filled with excrementitious ſteams, and which becomes uſeleſs from loſing a certain property, neceſſary for the ſupport of Life; and undoubtedly breathing a pure freſh air, on theſe accounts, contributes much to a recovery.——But where a perſon, inſtead of only having a room ventilated, is expoſed to cold air, beſides the uſe of its being inſpired, an extinction of preter-natural heat may alſo be expected from its being in contact with the body.—Is not there reaſon to think, that the recovery of the ſoldiers in the ſhed, mentioned by Dr. Brockleſby [u], was chiefly owing to the preter-natural heat being extinguiſhed by *extraordinary moiſt*

[t] Inquiry, *&c.*

[u] Med. Obſerv. p. 66.

cold air? otherwiſe an equal number would very likely have recovered in Cariſbrook Caſtle, where the rooms might have a good ſupply of *freſh*, though not of *cold* air.

People accidentally agreeing about a plain Fact, a Proof of its Truth.

A THOUSAND more inſtances to the ſame purpoſe might eaſily be produced; ſome we have hereafter added; but it only ſeems neceſſary here further toobſerve, that a commonly-received opinion, being told perhaps with a trifling variation, may only be conſidered as a hear-ſay evidence; but where a number of people, at great diſtances of time, not having any theory, or ſelfiſh purpoſe to ſerve, or without any knowledge or connection with each other, accidentally agree in their account of a plain fact; we certainly have the cleareſt evidence of its truth.

BUT it was owing to the doctrine of concoction, that the practice of ſuppreſſing fevers by cold was laid aſide [x]: for the anci-

[x] Read Celſus, Lib. iii. cap. 4.

ents

ents gave medicines to promote concoction; and we ſee GALEN [y], whoſe writings became the ſtandard of practice, in one part of his book, did not adviſe its uſe, till ſigns of concoction appear [z]; and, in the beginning of the ſame chapter, he tells us, when they did appear, it was unneceſſary: So that it was not any wonder, phyſicians ſhould content themſelves with purſuing that point, which, when accompliſhed, would cure the patient, and without which, it was thought he could not recover.

THE practice of HIPPOCRATES, we ſee, was more conſiſtent, and very different; for when the fever would *not remit*, he applied extreme cold; and perhaps GALEN,

[y] Loco citato.

[z] We have an inſtance of the conſequence of this doctrine in the celebrated Lommius, who attempted to revive the ancient practice of giving cold water in continual fevers. He tells us, he has cured a great variety of patients arrived at the height of the diſeaſe by this method, and recommends it to the knowledge and conſtant practice of many phyſicians.—But unluckily, by falling in with the above opinion, he has not only perplexed his ſubject, but made the practice appear ſo hazardous, that it has even been overlooked by his admirers.

Vide Lommius, de Febre continua, Sect. iii. cap. 2 & 3.

notwith-

notwithſtanding what he has ſaid about concoction, did the ſame thing.—Otherwiſe how could cold water be "a *perpetual remedy* againſt the fever *itſelf*," unleſs it was aſſiſted by urine, ſtool, or ſweat?

The Doctrine of Concoction conſidered.

BUT GALEN was extremely fond of theory, to which, in his writings, he ingeniouſly repreſents his practice as correſponding: And there is reaſon to apprehend his followers made choice of the ſhadow inſtead of the ſubſtance; for, upon enquiry, the doctrine of concoction in fevers may at leaſt appear doubtful.

THOSE who have had the pleaſure of reading HIPPOCRATES [a], know that he ſaid, "Matter is concocted, when the humours "are thoroughly mixed and tempered "with each other; and as it were digeſted." And, from his illuſtrating the concoction of crude humours in the body, by ſhewing in what manner matter in an abſceſs, and acrid humours diſcharged from the noſe, *&c.* are concocted, it is evident he thought the

[a] De Vet. Medicin.

offending

offending humours in fevers underwent ſome ſuch alteration [b]; and which opinion has ſince been generally received [c].

But it muſt be obſerved, that, though the *facts* related by this able writer will be the admiration, and ſtand the teſt of ages; yet his theory is not to be conſidered in the ſame light; becauſe, like moſt other theories, it may only prove to be the child of imagination.—Nor does its being adopted by all writers, with certainty prove to the contrary; as it has frequently happened, that opinions ill founded have been copied from one writer to another, without once enquiring whether the principles upon which they were built are true or falſe; and, if we reaſon only from thoſe things which come within our knowledge, this affair may perhaps have a different appearance to that we meet with in the writers on fevers.

[b] De Morb. Lib. iv.

[c] See Galen, de Humor. & Van Swieten, Comm. Boerhaav. Sect. 587.

All Matter paſſes off from the Blood in a crude State.

THE matter in the ſmall pox paſſes off from the blood, not in a concocted, but a crude ſtate; and afterwards becomes pus [d],

[d] It follows then, as ſoon as the matter is eſcaped from the blood, it muſt have every property it can have, of communicating the diſeaſe by inoculation, though it does not affect a by-ſtander, till it perſpires and floats in the air.—Therefore it cannot make any difference at what time of the diſeaſe it is taken for this purpoſe, and which will be very evident to thoſe who know, that it is the variolous miaſmata only, which gives the diſeaſe; for the pus, or lymph, in which the infecting matter was involved, all remains upon the thread, when that method of inoculation is uſed. So that thoſe who depend wholly upon a more favourable iſſue of the diſeaſe, from inoculating with "unconcocted lymph," may, if they neglect other ſteps, frequently be diſappointed.—Nor can we think the ſucceſs of a popular inoculator owing to his peculiar medicines, but to another cauſe; as the indiſcriminate giving of theſe medicines ſeems evident to prove; for, if there be any ſuch thing as different conſtitutions, the preparing them all in the ſame manner muſt undoubtedly be improper; do harm to ſome, and often render them improper ſubjects for variolous infection; who notwithſtanding, where the diſeaſe is not prevented taking place, by abſtracting too large a quantity of lymph, which ſometimes ſeems to happen, get by

by the warmth of the part, and the more volatile parts getting at liberty.—The ſame may be ſaid of other eruptive fevers; of criſis by ſtool, *&c.* And whenever a metaſtaſis of matter carries off a fever, it is always diſcharged in a crude ſtate, and either produces a gangrene, is converted into pus, by diſſolving the fat and oil, *&c.* with which it comes in contact, or terminates in an œdema, according to its degree of acrimony. And is not there reaſon therefore to think, that in every fever, the materia morbi, after changing ſome of the humours to the nature of itſelf, is diſcharged unaltered,

equally well through with thoſe, who may be properly treated; becauſe preventing a fever overbalances every improper ſtep that has been taken —Otherwiſe they could not poſſibly have equal ſucceſs with them who have inoculated in the old way, under a judicious preparation. And, if due regard is paid to what Dr. Dimſdale has benevolently ſaid upon this ſubject, we ſhall certainly lay aſide the practice of hunting after noſtrums (which when diſcovered, if conſidered as ſpecifics, and truſted to alone, might lead us out of the way); and ſtill continue to prepare our ſubjects as the nature of their habit requires, taking into our aſſiſtance that part of the practice of the inoculators, from which the benefit to their patients ſeems chiefly to be derived.

except ſometimes in its degree of virulence[c]? And for this purpoſe a certain time is required, according to the quality of the matter, and other circumſtances.

INDEED obſtructed juices, being incapable of getting at liberty, ſometimes deſtroy the veſſels which contain them, become pus, and are diſcharged by different ways in that ſtate.—But, in this caſe, the ſuppurating veſſels, whether upon the ſurface of the lungs, or in any other part of the body, are to be conſidered as ſo many ſeparate abſceſſes, which, by heat and violent motion, cannot in any reſpect be rendered more favourable; and where the ſtagnating juices, inſtead of ſuppurating, diſſolve, and become thin enough to paſs the capillary veſſels, they cannot properly be ſaid to be concocted, becauſe the diſſolution is owing to their ſalts having acquired a degree of putrid acrimony by obſtruction; juſt in the ſame manner as the obſtructed lymph, in the ſmall veſſels round a wound, is converted into a ſharp ichor by ſtagnation and heat.—Perhaps the only difference may be, that the air and the

[c] For inſtance, the matter we inoculate with.

moiſture

moiſture of the wound, *&c.* cauſes a quicker termination in this caſe than where the obſtructed veſſels lie concealed; tho' both in a certain time [f].

Nor does the light, equal, white, and continual ſediment in the urine, which Hippocrates [g], and all the after-writers, ſo much depended on, as a mark of concoction in the humours, prove much to the purpoſe: for in the fever which accompanies large wounds, even in the pureſt habits, the urine becomes turbid, and lets fall a ſediment, when the veſſels about the wound are becoming pervious, before any matter is formed; perhaps in conſequence of increaſed heat, which alone will cauſe the ſerum of the blood to become turbid, and let fall a ſediment [h]; or it may follow from the ſalts and oils, *&c.* in the blood, being confuſed together by a diſturbed motion; and incapable of paſſing off thus mixed, while by conſent of parts from tenſion at

[f] Hence we may account for the criſis in fevers, ariſing from obſtruction happening at a certain time, and for a ſudden metaſtaſis, or tranſlation of matter.

[g] Progn. Comment. ii. Part 2.

[h] Pringle, on diſeaſes of the Army, p. 389.

the

the wound, a nervous ſtricture, or ſpaſm, univerſally prevails upon the leſſer order of veſſels.—But the tenſion at the wound going off, this ſtricture of courſe gives way, and admits a paſſage to the feculencies which had been detained in the blood.—And may not this be the caſe in every kind of fever, as either tenſion or acrimony will, in a greater or leſs degree, cauſe the ſame kind of ſpaſms?—Turbid urine therefore, except when it is turbid from matter being abſorbed from abſceſſes, only ſeems to point out, that the obſtructed veſſels are become pervious, and that a recovery is like to enſue; the ſediment afterwards ſhewing that the cauſe of the diſeaſe is removed; for in conſequence of the fever having ceaſed, the different kind of fluids, *&c.* are not ſo intimately mixed, but that they will ſeparate in a ſtate of reſt. So that turbid urine, inſtead of being the cauſe, is only the conſequence of a ſolution of the diſeaſe; whether it is owing to the materia morbi being luckily corrected by medicines, or having eſcaped [i] perhaps, where there has

[i] *After* the eruption of the ſmall pox, the urine lets fall a ſediment.

been

been no critical evacuation, undiſcovered in the urine; or whether it is by the nervous ſyſtem being ſo far weakened by the violence of the diſeaſe, as to render it incapable of producing or keeping up a ſpaſm [k].

BESIDES, there is no proceſs in the animal œconomy, that we know of with certainty, that renders acrimony in the blood mild, when the animal ſalts, *&c.* acquire a greater degree of acrimony than is conſiſtent with health.—On the contrary, nature coolly and deliberately ſecretes them from the blood, and expels them in their acrid ſtate, whether in the bile, urine, or inſenſible perſpiration.—And why may we not ſuppoſe ſhe would, if not prevented, take the ſame ſteps with foreign acrimony? Does it not ſeem improbable, when perſpiration, for inſtance, is obſtructed, and cauſes a fever, that a method intirely out of the courſe of nature ſhould be purſued; or that thick matter ſhould more readily paſs off,

[k] In people dying of fevers, we frequently ſee a violent ſweat break out, which is moſt likely owing to this cauſe; and the only difference where people recover may be, that the relaxation happens before the *vis vitæ* is quite deſtroyed.

than

than a ſubtle effluvia involved in lymph only, the very vehicle, which nature herſelf has aſſigned for carrying off ſalts, that are to paſs through the veſſels of the ſkin?

MAY we not more reaſonably imagine, that the excretion either of foreign acrimony, or acrimony ariſing from obſtruction, is prevented by irregularity in the circulation, and which muſt, inſtead of concocting, add to the violence of the diſeaſe; not only by the effects produced in conſequence of increaſed motion, but by cauſing, in a greater or leſs degree, a detention of thoſe ſalts and oils, which, after a certian time, from becoming too acrid, while mixed with the blood, are unfit for the purpoſes of life? And accordingly we ſee, by the experiments of Dr. Langriſh [1], that the animal ſalts, during an ardent fever, are increaſed to a very great degree.

BESIDES, if we may be allowed to reaſon by analogy from facts, it will appear, that the fever, inſtead of promoting, retards maturation.

[1] Modern Theory and Practice of Phyſic.

IN

In large wounds, matter is never formed while the fever exiſts; but an ichor, as we have juſt obſerved, is diſcharged, inſtead of pus. The inflammation, and its conſequence the fever, which keep up each other, being gone, and the veſſels being pervious, the juices are tranſmitted unaltered into the wound, and, if mild, good matter is formed —The crude matter becoming pus in an abſceſs, we have ſeen, is merely accidental; for if it happens to fall upon a membranous part, unfurniſhed with fat, *&c.* where none can tranſpire, upon opening the tumour, an ichor, rather than digeſted matter, appears.

Again, there is reaſon to believe, that, if the ſuppoſed concoction was to take place, inſtead of relieving, it would more frequently cauſe the death of the patient; for it is well known, that the juices have a natural tendency to acrimony; and this, I apprehend, not accidentally, in conſequence of heat and attrition, but from the deſign of nature, for other wiſe purpoſes, beſides thoſe affected by the ſaliva and bile: for it ſeems to be the office of the ſalts contained in the ſerum, or lymph, to render

this fluid capable of keeping the craſſamentum of the blood diſſolved thin enough to paſs the circulation; wit being evident to a demonſtration, that lymph is a powerful diſſolver of blood [m].—Therefore, if theſe ſalts were diveſted of all kind of acrimony, by concoction, would not a ſtop be put to the circulation of the blood, by its becoming too thick to paſs the different order of veſſels?

UPON the whole then, is not there reaſon to think, that all the doctrine of concoction in fevers is falſe, and that the *materia morbi* is always expelled, except after internal abſceſſes in a crude ſtate? ſo that, inſtead of the common adage, *Cocta non cruda ſunt movenda*, may not we with more propriety ſay, *Cruda medicamentis aggredi et movere oportet?* for who, if they could

[m] If we wrap up coagulated blood in a wound, the ſerous fluids, which are afterwards diſcharged, immediately diſſolve it, and a red ſerum is formed.—It is by this means that coagulated blood lodged in any cavity is rendered capable of being abſorbed, where there is an excluſion of external air; for if the air has free acceſs, the ſalts, which before had only a diſſolving quality, it is well known, become a kind of cauſtic, and often produce a train of dangerous and violent ſymptoms.

remove

remove the cauſe of a fever in the beginning, would, in compliance with the doctrine of concoction, fooliſhly wait for its being removed by the fever itſelf? and has not a certain fever-powder worked itſelf into credit, only by removing the firſt cauſe of thoſe fevers, which ariſe from obſtruction, and thereby preventing the havock that would otherwiſe have been made?

The good Effects of Cordials in Diſeaſes, not owing to their increaſing the Fever.

BUT, after all, it may perhaps be ſaid, whether the doctrine of concoction is true or falſe, experience teaches, that good effects often attend warm medicines, which increaſe the fever; and therefore ſome degree of fever is neceſſary to expel the diſeaſe, where the pulſe is weaker, and the fleſh of the patient leſs warm, than in a ſtate of health: For inſtance, in the ſmall pox, when the pox are pale, and inclined to be livid, are but little enlarged, and not at all inflamed round their baſis, though the ſuppuration ought to have been begun; in which caſe, very warm cordials have increaſed the fever, and done remarkable ſervice; but moſt likely, not by increaſing the

fever, but by ſtimulating the almoſt inactive nerves, and thereby cauſing the ſmall veſſels to carry, with proper vigour, the contained fluids to their extremities.

And though a fever happens to accompany the uſe of theſe medicines, yet, ſo far from being of aſſiſtance, it muſt ratherhinder the regular progreſſive motion of the fluids, by the diſturbance it cauſes in the animal œconomy; for we know a natural degree of heat and a regular circulation are ſufficient to expel any kind of matter, and promote ſuppuration. And whatever goes beyond this muſt probably tend to do harm. Nor is a fever at all neceſſary for the purpoſe.—Critical abſceſſes, which are without or have but little inflammation, and proceed ſlowly towards ſuppuration, are brought to a ſtate of maturity, by cordials and invigorating medicines, without cauſing any fever, further than what is the conſequence of the inflammation of the diſeaſed part.—In thoſe wounds, where, from the blood being poor, and the *vis vitæ* weak, the fleſh is gloſſy, pale, and flabby, and diſchargesan ichor, inſtead of good matter, the bark, without bringing on a fever, often, ſoon changes the wound into an

oppoſite

oppoſite ſtate; and, if a fever happens by any accident to come on, the progreſs towards healing is interrupted, in proportion to its degree of violence.

WHY then are we not to expect from it the ſame impediment in the ſmall pox, where a good or bad ſuppuration is owing exactly to the ſame cauſe [n]? and does not the bark alſo, in this very caſe, both ſubdue the fever, and change the bad to good matter, at the ſame time?

THE ſame reaſoning will alſo hold good, whenever morbid matter, cauſing a fever, is to be expelled, and ſufficient vigour is wanting for the purpoſe: for whether the matter, after having eſcaped from the blood, is collected, and forms an abſceſs under the ſkin, or under the cuticle; or from being

[n] That I may not be miſunderſtood, I ſhall juſt obſerve, that to have good matter in wounds, it is neceſſary that the juices be healthy, and loaded with nutritious particles: whence, the more volatile parts flying off, a ſediment is left in the ſore, called pus.—In the ſmall pox, the lymph is collected under the cuticle, and is converted into pus, in the ſame manner: but matter in an abſceſs is formed in the manner we have already obſerved.

thin

thin and active flies off, without being involved in a ſufficient quantity of lymph to form pus, and appears only a kind of mealy ſcale; or paſſes intirely away, without leaving any outward mark of its being gone; yet, in each caſe, it ſeems to be expelled, by a proper degree of *ſtrength* and *elaſticity* in the veſſels; and which we imagine will, without a fever, always be ſufficient for carrying off any offending matter; provided the veſſels are pervious, the juices in proper quantity to ſerve as a vehicle, and thin enough to paſs their extremities. And we ſhall preſently ſhew, that it is a right practice to extinguiſh the fever, though cordials are required at the ſame time, to keep up the patient's ſtrength.

All Fevers Symptomatical.

INSTEAD then of the fever being an effort of nature, may it not always be conſidered as a ſymptom? which, upon taking a general view of fevers, and comparing them with each other, will perhaps be found true.

MAY not an acute inflammatory fever take its firſt riſe, from the ſmall veſſels being obſtructed, inflamed, and diſtended; and thereby

thereby preſſing upon the medullary part of the nerves, which ſeems to be diffuſed over every fibre in the body; juſt in the ſame manner as a fever is raiſed by an external inflammation, a pleuriſy, peripneumony, *&c.* and are not all theſe fevers cured alike, by removing the inflammation and obſtruction?

AGAIN, is not every fever ariſing from acrimony the conſequence of its irritating the medullary part of the nerves?—In gunſhot wounds, the putrid blood, and putrid matter ariſing from the bruiſed fleſh, are abſorbed, and bring on a true acute putrid fever.—And is not a common epidemic putrid fever cauſed in the ſame manner? for it muſt be the ſame thing, allowing for the difference of putrid acrimony; whether putrid effluvia are abſorbed from a wound, from the uterus, received by infection from a diſeaſed perſon, or whether the animal juices are rendered putrid by a particular ſtate of the air, &c. without infection.—And accordingly, exactly the ſame ſymptoms appear in each caſe, and theſe fevers are cured in the ſame manner; the firſt by preventing a further abſorption of putrid matter,

matter, and at the ſame time giving the bark, to correct and expel that matter, which is already got into the blood.—In the other, we render the air about the ſick as pure as poſſible; and if, in the ſame manner, inſtead of regarding a delirium, or waiting for an intermiſſion, till the patient is deſtroyed by the diſeaſe, the bark is given, a happy period is frequently put to the diſorder; probably, in like manner, by its correcting and expelling the matter, which irritated the whole body; for we can demonſtrate, from a ſore, that bark corrects putrid acrimony, gives vigor to the blood, and ſtrength and *elaſticity* to the fibres.—So that theſe fevers are nothing more than a ſymptom, which muſt of courſe conſtantly tend to make itſelf more violent, by ſtill increaſing the acrimony and diſſolution of the blood. By the wound in inoculation, we know the variolous matter is irritating; and as the fever ceaſes upon its being diſcharged from the blood, is it not plain, that the fever was only a ſymptom, in conſequence of the whole body being irritated?

PERHAPS a ſtimulus, irritation, and inflammation, are the only cauſes, by which

fevers are produced.—Nor ſhall we be at a loſs to account for every kind of fever, if we alſo conſider the different effects, which will ariſe from obſtruction and inflammation, or from different kinds of acrimony in different habits.

Cure of Fevers.

NOW it is agreed by all writers, that a fever is cured, by taking away its cauſe.—For which purpoſe, different ſteps have been purſued, according to the different ſtate of the ſolids and fluids: and, notwithſtanding they are convinced, that a violent fever increaſes the diſeaſe; yet, in conſequence of the doctrine we have been examining, they imagine, with ASCLEPIADES[o], that the fever *itſelf*, kept within proper bounds, is a neceſſary aſſiſtant towards the cure.—And it ſeems to be for this reaſon, thar Dr. GLASS[p] did not adviſe an intire extinction of the feveriſh heat by cold air, *&c.*—But, if what we have ſaid about concoction is true, the fever in any degree will certainly do harm, without any poſſibility of doing good; and

[o] Celſus, Lib. iii. cap. 4.
[p] Loco citato.

will it not therefore, inſtead of the common practice of only reducing the fever, which, by the preſent method, is too often impracticable, be more proper immediately, if poſſible, intirely to ſubdue this præter-natural heat, and violent commotion in the blood, as being a moſt injurious ſymptom, that nature may free herſelf from the diſeaſe; and the medicines have their proper effect without interruption? SYDENHAM [q], who ſeems always to have been guided by experience, contrary to the theory he had imbibed, did not only point out to us the preſent method of treating the ſmall pox, but alſo informs us, that in the acute fever of 1668, and part of 1669, as well as in the rheumatiſm, and all other inflammatory diſorders; neither frequent bleeding nor the moſt cooling medicines did ſervice, unleſs the patient was kept out of his warm bed ſeveral hours in a day.—Nor was he fearful of any ill conſequences ariſing from his ſuppreſſing the ſweat; as the teſtimony of a never-failing experience encouraged him to purſue and give preference to this method of cure.—— And we alſo find, that, in the putrid fever [r],

[q] Cap. 3.

[r] Brockleſby's Med. Obſerv. p. 67.

which

which raged amongſt the ſoldiers in the Iſle of *Wight*, " remarkably fewer died of " thoſe, who were expoſed to *extraordinary* " cold and moiſture in a hovel ſlovenly " made, than died any where elſe of the " ſame diſeaſe; though treated with the " ſame medicines, and the ſame general re- " gimen; and all the convaleſcents reco- " vered much ſooner than they did in any " of the warmer and cloſer huts and " barns, where fires, and apparently better " accommodation of every ſort, could be " provided for them;" probably, becauſe the fever was ſuppreſſed by the cold air, and the medicines thus rendered capable of producing a more powerful effect.—It is perhaps owing to the ſame cauſe, that the inoculators can ſo readily procure a ſweat, whenever they think it neceſſary. And if we take into our account, what GALEN and CELSUS have ſaid, and the facts we ſhall hereafter obſerve; we ſhall find that there is the higheſt probability, that it was owing to a remiſſion of heat, that the medicines were given with ſuch powerful effect to the lad, who fell into the horſe-pond, at the turn of the ſmall pox [f].

[f] Dr. Glaſs's Letters, p. 6.

Diaphoretics, &c. have ſometimes cured Fevers.

ON the other hand, it muſt be confeſſed, that fevers have ſometimes been cured by warm baths, different kind of diaphoretics, and other evacuations.—And indeed, if we could certainly remove a fever by theſe methods, we ſhould not have any occaſion to ſeek out a different practice.—But when it is conſidered, how often every effort we make is inadequate to the taſk; and that when a ſweat, *&c.* does happen, it ſeems rather by chance than a certain event, and that we have the frequent mortification of ſeeing our beſt-concerted ſchemes prove abortive, even where the veſſels are in a ſound ſtate; we ſhall ſurely take into our aſſiſtance any remedy, that will with ſafety, and leſs uncertainty, reſtore our patients to health.

The firſt Steps to be taken in a Fever.

BUT, in the beginning of fevers, it will ever be proper, if poſſible, to render the whole ſtate of the veſſels pervious, for which purpoſe,

purpoſe, ſuch evacuations and ſuch deobſtruents muſt be uſed, as the nature of the diſeaſe requires; and whenever a fever is ariſing from obſtruction, it will ſometimes be prevented by this means alone.—But if, notwithſtanding this treatment, aſſiſted by the free uſe of cool freſh air, the fever, *without ſhewing any favourable ſymptom*, ſhould increaſe; have we not, in order to prevent its conſequences, authority enough to ſuppreſs it, by a proper degree of cold, as the moſt *certain antidote to heat?* for, beſides what we have already referred to upon this ſubject, it has alſo been obſerved, that people ſeized with fevers, having been by miſtake expoſed to the cold air, *&c.* have received manifeſt advantage [t].

PROPER evacuations being made, if the patient is incapable of moving into the open air, he may perhaps, with equal advantage, be expoſed to cold air in his room, provided proper ſteps are taken by medicines to guard againſt any inconvenience, that may ariſe from want of action; for ſtirring about, during the uſe of cold air, tends at leaſt to prevent its chilling the blood, or

[t] Dr. Dimſdale, p. 62.

having

having other bad conſequences.—But, we muſt not content ourſelves with throwing open a caſement only, and ſuffering the patient to breathe a purer air; but he muſt alſo receive air upon his body, ſufficiently cool to take off his fever.—And therefore the practice of giving cold water muſt likewiſe be purſued, if the violence of the diſeaſe require it.

When theſe are not ſufficient to extinguiſh the fever, may not the patients, in our climate, have cold water poured upon them, in the manner of the Perſians and Neapolitans, till the fever is ſubdued; taking care, by giving proper medicines, that a regular motion in the blood be preſerved; leſt, where extreme cold is neceſſary, life ſhould be extinguiſhed with the heat?—An ardent fever, we ſee, has been cured by this method, even in *Scotland*; and it only ſeems neceſſary to adapt the proportion of cold to the degree of heat, which cannot fail of being right in every climate.—And we may obſerve once for all, that whenever cold, in any way, is uſed, a due degree of ſtrength ſhould alſo be preſerved, that the morbific matter may be properly expelled.

The

The Uſe of the Thermometer recommended.

DOCTOR STEPHENSON[u], by carefully obſerving, " found in burning fevers, with " a full, quick pulſe, red ſkin, and a large " and quick reſpiration, by opening a win- " dow, and admitting a ſtream of cold air, " to breathe in, *in one minute* the reſpiration " became ſlower; and very ſoon after, the " pulſe abated of its fulneſs; and not only " the face, but the whole body, of its fiery " heat and colour, though it continued " cloſe covered: which ſeems to ſhew, that " by experience, by the pulſe, and by the " aſſiſtance of the *Thermometer*, we may, " with great certainty, aſcertain the degree " of cold neceſſary to extinguiſh a certain " degree of heat, and the exact length of " time neceſſary for the purpoſe."—If the patient under this treatment has a tendency to ſweat, it may be aſſiſted by ſuch ſudorifics, and diluting liquors (in imitation of nature, by way of vehicle to the ſalts) as the caſe requires.—But particularly we ſhould not omit evacuations by urine, or ſtool, or both; if the matter does not paſs off by the

[u] Loco citato.

ſkin.

ſkin.—Nor muſt other medicines, whether antiphlogiſtic, cordial attenuants, antimonials, antiſeptics, bliſters, or opiates, as the nature of the fever may require, be neglected.——And wherever epidemic fevers have a local riſe, particular regard muſt be paid to that circumſtance.

Nor will the practice of extinguiſhing the fever by cold be improper in thoſe diſorders, where brandy and other cordials are given to keep up the ſtrength of the patient, till the fever declines; for cold gives ſtrength and ſpirits in fevers, at the ſame time, that it ſubdues the præter-natural heat. —Whereas high cordials, given alone, increaſe this heat; though they ſometimes, but not very frequently, enable the patient to overcome a diſeaſe, that would otherwiſe prove mortal.——Indeed it will often be neceſſary to give medicines to invigorate the patient; and to extinguiſh the fever by cold at the ſame time; that our intention, in promoting a regular, from a languid circulation, may not be annulled.

* Loco citato.

HIPPOCRATES[x], in a bilious fever, which did not remit, where the upper parts felt hot, but the belly and feet cold, with a dry tongue, gave wine and water twice a day; but the coldeſt water the reſt of the time. ——GALEN, where the patient was weak, gave wine, and uſed rarefying ointments along with the bath; and whenever he gave medicines to ſupport the concocting powers, he obſerved at the ſame time, that, for the fever *itſelf*, cold water was the cure.—And do not the Perſians give cordial confections, when they apply extreme cold?

BY this practice too, the ſick perſon will probably find himſelf not left in that low ſtate, which commonly happens after a long continued fever; nor will he run the riſque of undergoing evacuations (which at laſt often prove ineffectual) till the remedy becomes worſe than the diſeaſe.—And this practice will equally ſuit the theory of theſe Gentlemen, who, excepting the ſmall pox, which they make ſome doubt about, aſſert, that a fever is a diſeaſe *ſine materia*, and that it is wholly cauſed by ſpaſms; for cold of itſelf will often abate ſpaſms.—They will alſo be more eaſily removed, from the fever

[x] Loco citato.

being ſubdued.—And it will always be a pleaſing circumſtance to the patient, to have a remedy employed, that will cure his fever, whether the doctor's theory be right or wrong.

Reſtrictions in uſing cold Air, &c.

NEVERTHELESS, though breathing pure cool air is abſolutely neceſſary to the cure in every fever; yet admitting very cold air to the body, giving cold water, or the uſe of cold bathing, muſt only be adviſed under proper reſtrictions.—The ancients very properly forbad the uſe of cold water, and the cold bath, when (what are called) the ſigns of concoction appeared; and eſpecially when there is an inflammatory tumour, or eryſipelas; it being then unneceſſary, as a termination of the diſeaſe is often at hand.—And GALEN[y] judiciouſly obſerves, "that though cold water is al-
"ways a remedy againſt the fever *itſelf*;
"yet it is not proper where the putref-
"cence ariſes from an obſtruction of gluti-
"nous and thick humours."—We may add, not in its full force; becauſe extreme cold

[y] Method. medendi Lib. i. cap. 9 & 10

might

might cauſe a more firm obſtruction, by thickening the juices, and leſſening the diameters of the veſſels.—Yet even in this caſe, cold air, and cold water, under proper regulations, may, without doing injury, ſufficiently ſubdue the præternatural impulſe of the blood, and thereby prevent the fluids from being more firmly impacted, in the already impervious veſſels, till the neceſſary ſteps have been taken to remove the obſtruction; when, if the fever ſtill remains, cold, in proportion to the degree of heat, may then perhaps put a happy period to the diſorder.

But when an inflammatory fever ariſes, for inſtance, from a cold north-eaſt-wind, &c. cold water ſeems to be a more proper antidote than the breathing freely of that kind of air, which cauſed the complaint; though if it is conſtantly renewed, and corrected properly by a fire, it may be rendered uſeful, and ſalutary.

Celsus [z] confines the uſe of giving cold water to thoſe only, "who have the burning heat, but no pains, nor tumor of the

[z] Loco citato.

" Præcordia, and nothing to prevent it in " the lungs, or fauces, or have had no ulcer, " nor faintings, nor looſeneſs of the belly." —And AVICENNA, immediately after ſpeaking of the uſe of cold water, ſays, " When " things are ſo prolonged, that the Hypo- " chondria are diſtended, the extremities " cold, the watchings long continued, the " underſtanding confuſed, and you ſee the " breaſt and bed-cloaths riſe and fall, it is " then neceſſary to adminiſter external " heat."—Indeed, if we compare the practice of the ancients, in this reſpect, with that of the moderns, there is reaſon to imagine, that the antients ſuffered the fever to make a greater progreſs, than was conſiſtent with the welfare of the patient, before they attempted to ſuppreſs it by cold; for many might even die before the tenth day.— It is not abſurd to imagine, that this practice took its riſe, long before the time of HIPPOCRATES from ſimply obſerving the effects of heat upon cold; or from cold accidentally having been obſerved to cure a fever; for we ſee HIPPOCRATES himſelf uſed it as a ſpecific, when other methods failed. And the reaſon he did not employ it ſooner, ſeems to be his imagining the febrile matter muſt be altered, before it could paſs off from the

the blood; whence he deferred that remedy which might have been moſt uſeful, and led poſterity out of the way in that practice which ought to have been purſued.

THE Perſians, by conſtantly adhering to a plain matter of fact, from the days of RHAZES, &c. may perhaps have cured fevers, with ſome degree of certainty; while the more enlightened nations of *Europe* have been in part embarraſſed with ſpeculative knowledge; ſo that the theory, which was invented when the ſcience of phyſick was firſt formed, ſeems to have been productive of the ſame conſequences, with every kind of theory ſince deviſed, that had not its foundation in matter of fact.

Reading the Ancients recommended.

HOWEVER, if we ſeparate the facts, from the theory of the ancients, we ſhall be well rewarded for having peruſed their writings; and in particular we refer to them upon the ſubject we are now treating, where abundance of curious directions are given, which thoſe who are deſirous of knowing the cautions neceſſary in ſuppreſſing fevers by cold, muſt conſult.

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An Epidemic Fever deſcribed.

IN the latter end of the year 1765, an epidemic fever ſhewed itſelf in this place, and neighbourhood.—In a little time it became general; it was more ſevere amongſt the poor; and frequently ſeized thoſe in a different ſituation of bloated, and relaxed habits, but without communicating any infection, where cleanlineſs was obſerved, and freſh air procured. For we had many inſtances of its affecting one perſon in a family, without even the nurſe having a taint of the diſeaſe.— And, on the contrary, where the rooms were cloſe, ill-ſerved with air, and a change of freſh linen, &c. impracticable, it ſoon ſpread itſelf through the whole family, commonly proved fatal, and thus continued, with little variation, to the beginning of the preſent year.

AT firſt people were commonly ſeized with a pain in their ſtomach and bowels, accompanied with a ſlight purging, which was in a few days ſucceeded by a violent pain in the head. A ſhivering followed; and a fever, which was rather ſlight for two or three

three days, then invaded the patient with a vomiting of bile.

AFTER this, notwithſtanding, in general, the purging continued more or leſs, and ſometimes even to exceſs thro' the diſeaſe, yet the heat increaſed, and the pulſe, tho' ſometimes full in the beginning, ſoon became low, ſmall, weak, and exceſſive quick; and the blood, which happenened to be taken from a few, under a full pulſe, when the diſeaſe made its firſt appearance, was of a very looſe texture, and ſometimes a little fizy.

THE patient ſeldom perſpired while the fever exiſted, made but a very ſmall quantity of urine till the diſeaſe was ſubdued; after which it became turbid, and let fall a ſediment. He was watchful, tho' not very reſtleſs; ſoon became diſpirited, and remarkably weak and low. Worms were afterwards diſcharged, both by the anus and mouth; and a delirium accompanied the whole.

IN thoſe who recovered, an eruption, reſembling the meaſles, appeared upon the ſkin; and abſceſſes, chiefly about the ears,

on

on the ſides of the face, and ſometimes in other parts of the body, were often the criſis of the diſeaſe; which had not any certain duration, but terminated at different times, in different people; for the moſt part, as we have obſerved, fatally amongſt the poorer ſort; in conſequence of a general putrefaction, which large petechiæ in abundance foretold.

If an antiſeptic purge was given, when the pain in the ſtomach and bowels, and purging firſt came on, a period was often put to the diſorder; and even when it had continued a day or two, a grain of emetic tartar, given at different times, in a little compound powder of crabs-claws, diſcharged a great deal of putrid bile, &c. both by vomiting and ſtool, to the great relief of the patient.

But it more commonly happened, that the diſeaſe was unnoticed, till the pain in the head and fever became troubleſome, when theſe medicines, tho' repeated, produced no ſenſible relief, and the diſorder ſeemed to go on, till overcome by the ſtrength of the patient, or till he was deſtroyed by its violence, in oppoſition to the remedies

remedies uſually employed in theſe caſes; which perhaps are not uncommon circumſtances.

LARGE bliſters increaſed the delirium, and did manifeſt harm; antimonial fever-powders did no good. Sinapiſms to the feet ſometimes relieved the head, without leſſening the cauſe of the complaint; and bliſters behind the ears were applied to promote a diſcharge, which nature pointed out, it being thought probable, that, as they were ſmall, the patient would not ſuffer from their irritating quality.—But of all that I ſaw tried, the following method was moſt ſerviceable.

AFTER clearing the primæ viæ by the medicines mentioned, ſweet ſpirit of nitre was given till the fullneſs of the pulſe went off, and was afterwards continued, along with a decoction of the bark. When petechiæ appeared, Elixir of vitriol was joined with the bark. And when the lowneſs of the patient made it neceſſary, ſnake-root ſupplied the place of ſpirit of nitre; and other cordials were joined, if exceſſive

faintneſs required. Nor was the patient debarred the free uſe of port.

ANTISEPTIC abſorbents were given to keep the looſeneſs within due bounds, but more powerful aſtringents, if it exceeded the bounds of moderation. And it was often found requiſite to join ſperma-ceti with the bark decoction to prevent its running off by ſtool.—By this means, the urine was ſometimes more freely diſcharged, and a ſweat procured; putrefaction ſeemed to be checked, and the patient rendered more capable of going through the diſeaſe, becauſe more recovered by this treatment, and in a ſhorter time, than by any other we had tried; but all this availed nothing, unleſs cleanlineſs was obſerved, and the room daily filled with freſh air. And even amongſt thoſe who had proper neceſſaries about them, and lay in good rooms, many died. —But the following caſe taught us a method of rendering the medicines more effectual, and of conducting the ſick with almoſt a certainty through the diſeaſe.

Inſtances

Inſtances of the good Effects of ſuppreſſing the Fever.

IN April, 1766, a young man, ſeventeen years of age, was ſeized with the fever deſcribed, though he cleared his bowels with rhubarb, ſoon after the purging came on. He then entered upon the method juſt mentioned. Nevertheleſs he was very hot, a delirium ſucceeded; and he was exceſſively weak, and low, notwithſtanding he drank a pint of wine a day.—Crude ſal ammoniac was added to his medicines, in hopes of making him perſpire; and, being coſtive, his bowels were kept open by clyſters, for he was ſo weak, that we durſt not venture upon the moſt gentle purge.

Now a long range of building, on each ſide a yard, led up to the window belonging to his room, which was ſmall: ſo that when the ſaſh, which faced his bed, to which there where no curtains, was opened, an extraordinary current of cold air ruſhed in; whence the window was only juſt opened once or twice a day, to ventilate the chamber, and immediately ſhut down again,

fearing the cold ſhould interrupt a criſis by ſweat.

HOWEVER, as more than a week had elapſed, and he daily grew worſe, I began to conſider him in imminent danger; therefore, reflecting upon the cordials he took, and calling to mind the practice of the ancients; and what Dr. BROCKLESBY had ſaid about extraordinary cold air; the door of his chamber, which was on one ſide the bed, together with the ſaſh, were ordered to be opened; by which means, he received a current of air, that ſufficiently cooled him, and reduced his ſwift pulſe nearer to the ſtandard of health. His delirium left him in a few hours; when the ſtream of air was leſſened by ſhutting the chamber door.—— And, imagining the evening air would be too cold, I directed the ſaſh to be let down, as night came on.

IN a very little time afterwards, he found himſelf, except the delirium, as low, and as ill as ever; upon which, the family being gone to bed, he made the nurſe open the window again, and ſoon found that the viviſying ſpirit of the air was the beſt cordial.

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FROM this time, the window was kept open both night and day; but in leſs than twelve hours, *after his fever was ſuppreſſed by cold*, he began to ſweat plentifully; the eruption we have ſpoken of appeared, and kept out regularly; his urine let fall a ſediment; and by continuing the aſſiſtance of the bark, *&c.* he recovered gradually from a very weak ſtate, without the leaſt appearance of danger.

A WOMAN, twenty years of age, had lain ill of the ſame kind of fever, eight or ten days.—She was extremely hot, weak, and low, with the pulſe we have deſcribed; and ſhe was delirious, with a particular wildneſs in her eyes. She would not take any kind of medicine, and being lightly covered with bed-cloaths, by opening a door, and a window, a ſtream of colder air was conveyed into the room, than ſhe could have received had ſhe been out of doors; which, in a few hours, took off her delirium and fever, and by giving her a glaſs of wine three or four times a day, and cold wine and water the reſt of the time, ſhe got perfectly well.

HENCE

HENCE it ſeemed evident to us, that a greater degree of cold was neceſſary in the cure of fevers, than had generally been admitted; and we purſued this plan, with equal pleaſure to ourſelves, and advantage to our patients.—In proportion as cold freſh air was wanting, we failed of ſucceſs; and in ſtoved rooms, the ſeminary of infection, we had frequently the mortification of being thoroughly convinced, that there was little or no hopes of recovery, under ſuch circumſtances.

An acute continual Fever ſuppreſſed by cold Air.

ON the ſecond day of an acute continual fever, a man aged thirty-five, of ſtrong fibres, loſt twelve ounces of ſizy blood, and took a doſe of ſalts, which worked very well.—Afterwards a drachm of the foliated earth of tartar, and thirty drops of Huxham's eſſence of antimony were taken in water, every four or five hours, but (notwithſtanding this kept his bowels open) without any abatement of his complaint.

On the fourth day, inſtead of taking more blood away, which his pulſe ſeemed to require; his præter-natural heat was ſubdued, by ſuffering a ſtream of very cold air to enter his room for two hours together; upon which, by continuing his medicines, a great ſweat broke out, his pulſe became ſoft and regular, and the fever was changed into an intermittent, which gave way to the bark.

The Effects of drinking cold Water, in an acute continual Fever.

A MAN aged thirty, after lying ſome time in the night upon the wet ground, was ſeized with a violent cold.—A fever followed, which was not at firſt ſo violent as to confine him to the houſe; but, in a few days, he was only able to crawl out of doors into the yard; and a delirium coming on, he was confined to his room, though not to his bed.—His pulſe being quick, and rather full, though it was now the twelfth day of the diſeaſe, eight or ten ounces of blood were taken away; an antimonial fever-powder, together with ſaline medicines, were given. And as his ſkin was very hot, and

we could not, from the ſituation of the place, get into the room cooler air than that which he had received out of doors, we allowed him to drink cold water with a toaſt in it.—The water and medicines at firſt vomited and purged him, ſeveral times; but his wife, who thought cold water could do him no harm, ſupplied him plentifully with this liquor, till we ſaw him next da y.

His fleſh then felt cool, and his delirium had left him; but at night, when warm in bed, it returned [z], and continued till after he had been up ſome time, and then again diſappeared.—However, the ſaline medicines, *&c.* were ſtill purſued; and, though he was not quite free from a delirium the ſucceeding night, yet it was leſs violent; he got ſome ſleep, and next day he appeared much better: his water, which before was flame-coloured, now became turbid.

The third night he ſlept pretty well, and evidently appeared out of danger the next day: and by the aſſiſtance of a bliſter, on account of a pain in his ſide, and other eva-

[z] Sir John Chardin's fever returned, when warm in bed.

cuations

cuations by urine and ſtool, he ſoon recovered.

Is it not probable, if proper deobſtruents had been uſed to remove the firſt cauſe of his diſeaſe, at the time he went out of doors, that it would have been ſtopped without running to ſo great a length? And are not the bad effects of heat, and the good effects of cold, in this caſe, very obvious?

Effects of cold Air, in the Small Pox.

IN the beginning of January, 1765, ſeveral young people were inoculated at the ſame time, in a very large houſe, which had long been uninhabited: they were divided into two parties, and placed in two rooms, at a conſiderable diſtance from each other. But the large unfurniſhed rooms, which ſurrounded them, admitted, through their broken ſaſhes, air which kept the whole houſe very cold; for though the apartments, in which the inoculated lay, were well enough accommodated in other reſpects, and we imagine would have been kept, of what we thought a proper warmth, by fire; yet we found the fire-grates were no ways ade-

quate to the ſize of the rooms; and they alſo, along with the reſt, were very cold.

In conſequence, a very few well-filled puſtules, and the ſtate of the wound, were the only ſymptoms, which ſeveral of our patients had of the diſeaſe; for we could never perceive them to be one moment ill, and in thoſe who had a fever, it was ſo ſlight, of ſuch ſhort duration, and the ſubſequent eruptions ſo few, as never to prevent them from amuſing themſelves, in what manner they had a mind; and they have ſince remained well from all kind of complaints.

Being healthy, theſe young people underwent no other preparation than taking a few doſes of ſalts, and living for about a fortnight upon that kind of diet, which kept them cool, and tended to render their blood and juices mild.—But, though it had been a conſtant rule to purge gently during the eruption, and to keep the bowels open the reſt of the time; and notwithſtanding we had at different times, along with the diet mentioned, prepared ſome with calomel-purges, others with preparations of mercury and antimony; ſome with antiphlogiſtics,

and

and others with the bark, as the habit and circumſtances required, with happy event, and great eaſe compared with the natural ſmall pox; yet, though we were always aware, that thoſe who were inoculated in the coldeſt months came off the beſt; I never ſaw any of them, who were kept warm, paſs through the diſeaſe with that eaſe to themſelves, as thoſe who were ſo much expoſed to cold.

The Effects of Cold-bathing, in the Small-pox.

A MAN, twenty-two years of age, had the confluent ſmall pox in ſo violent a manner as to be quite given over, when they were paſt the height. But, being delirious, and his nurſe abſent, on the 18th of October, 1731, he eſcaped out of his room, and jumped into a draw-well; where, though he was inſtantly diſcovered, and ſaved from drowning, he remained about two minutes before he could be taken out, when he was immediately put to bed; but without the leaſt expectation of his living an hour.—In which time the fever, and its conſequence the delirium, left him, and he recovered without any trouble from this violent diſeaſe. —All which ſeems clearly to ſhew (contra-

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ry to the commonly-received opinion, which has been lately [a] much inſiſted on), *that it is the fever chiefly, and not the diſeaſe,* which deſtroys the patient.—And however this may diſagree with an opinion founded on theory only, yet it certainly correſponds with the long-accepted ſaying of HIPPOCRATES, which probably took its riſe from facts; *that contraries are the cure of contraries* [d], and that the *curer of diſeaſes is Nature* [c].

[a] By a reverie Writer.
[b] Lib. de Flatibus.
[c] De Morbis popular.

THE END.