An answer to Mr. Kirkland's Essay, towards an improvement in the cure of those diseases which are the cause of fevers. Wherein is shewn, the error of his arguments for the use of cold water in extinguishing fevers / [Archibald Maxwell].

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AN

ANSWER

TO

Mr. KIRKLAND's

ESSAY,

Towards an IMPROVEMENT in the

Cure of thoſe DISEASES which are the Cauſe of FEVERS.

WHEREIN IS SHEWN,

The ERROR of his Arguments for the Uſe of cold Water in extinguiſhing FEVERS.

By ARCHIBALD MAXWELL, Surgeon.

" THOSE are in an Error who believe that a Fever is always
" to be reduced, or ſuppreſſed, by all the Aſſiſtances of Art;
" whereas Nature frequently overcomes ſuch Diſeaſes, *by a Fever*
" as would otherwiſe remain inflexible to the beſt Remedies."

Baron VAN SWIETEN.

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ERRATA.

Page 6. line 13. for great, read with great
Page 7. l. 19. for removed, r. got rid of
Page 8. l. 7. for are, r. contain
Page 28. l. 17. for the beſt, r. any
Page 54. l. 23. for health, r. heat

A N

ANSWER, &c.

INTRODUCTION.

SOME months paſt, a pamphlet was publiſhed, entitled, *An Eſſay on the Improvement in the Cure of thoſe Diſeaſes which are the Cauſe of Fevers.* As the ſeeming tendency of this is to the ſubverſion of the reigning theory of fevers, conſequently affecting the medical practice; it may naturally excite the attention of thoſe, who are mediately or immediately connected with the art of healing.

My profeſſion then rendering this ſubject not a matter of indifference, I was led to a peruſal of the eſſay; and if after this the author's reaſonings appeared far from concluſive; or rather, if I believe them capable of producing miſchievous effects; I hope an humble attempt to the prevention of theſe, will be deemed conſiſtent with my duty, and influence the candid reader to excuſe the inaccuracies of the following ſheets in anſwer.

It muſt be confeſſed, that the eſſay is written in a very agreeable manner, great appearance of method; in one word, it is ſpecious; but then logical arguments, and not rhetorical flouriſhes, in phyſical diſquiſitions, are required; *thoſe* are appeals to reaſon, compelling, as it were, to the reception of truth; *theſe* inflaming the paſſions, make us fall in love with falſhood itſelf. Prudence therefore ſhould guard us againſt the impoſition of words; if elegant language be not deemed quite ſo unneceſſary, in a medical eſſay, as in a mathematical demonſtration.

IF we examine then with coolneſs, and unſeduced by a dazzled imagination, we may probably find, our author not ſo very ſucceſsful in making his points good; which are,

I. THAT the doctrine of concoction in fevers, though embraced by the moſt judicious phyſicians from the days of HIPPOCRATES to the preſent hour, is fallacious.

II. THAT cold water, when drank in ſufficiently large quantities, will *ſuppreſs*, or *extinguiſh* the fever, at once: which ought to be our practice, that in ſpite of the Ancients theory, it was their practice, and in it their ſucceſs ſhould make the method univerſal. For

III. A FEVER, ſo far from being an effort of nature to expel morbific matter from the blood; is what ought to be removed by an *immediate extinction.*

THAT this, though not the arrangement, is the ſubſtance of his arguments; and no unfair repreſentation; every reader of candour will allow. Now theſe are points of

ſuch real importance, that let him convince me of their truth, (I hope I am open to conviction) and

erit mihi magnus Apollo.

TILL then I requeſt him to believe, that the following pages are written with deference to truth; and are the reaſons why, at preſent, I cannot ſubſcribe to his doctrine; and if in peruſing theſe, many readers may ſee too great prolixity in quotations; muſt obſerve that I found them neceſſary in the argument, and that opinions in medical conſultations, have been long eſteemed of equal authority with precedents from reports in law, where the ſtatutes are not expreſs.

OUR author begins with cenſuring the opinion of thoſe, who from eruptive fevers ceaſing upon the morbific matter being expelled to the ſurface of the body; believe that a *fever* is an effort of nature to relieve herſelf;—yet there can ſcarce be brought a ſtronger

a ſtronger argument, to ſupport any opinion whatſoever. (*a*)

NEVERTHELESS he promiſes, 'the full-'eſt teſtimony poſſible to make plain the 'fallacy of it;' for that 'a fever encreaſes 'and protracts the diſeaſe, and that an (*b*) '*immediate extinction* of the fever, if poſſi-'ble, is the ſureſt and moſt rational method 'of removing the diſorder, by which it was 'the cauſe.' That fevers having been cured where ſuppreſſion has not been aimed at, was owing to the ſtrength of nature, 'while 'in a much greater number the fever over-'balances every effort of nature, and de-'ſtroys the patient;' 'and a change of con-'ſtitution for the better, which ſometimes 'happens

(*a*) Do fevers of this kind, vaniſh before or after the eruption? univerſal experience replies after. Is not this then a ſtrong argument, that a fever may be an effort of nature, to expel morbific matter; otherwiſe why ſhould the fever ceaſe upon eruption?—But in fact our author himſelf (Eſſay, p. 32.) when conteſting that fevers are ſymptomatical, ſays 'by the wound in inoculation we know the variolous matter 'is irritating; and as the *fever ceaſes* upon its being *diſ-'charged* from the blood, *is it not plain*, that the fever was '*only a ſymptom* in conſequence of the whole body being irri-'tated?'

(*b*) Eſſay, p. 2.

'happens after a fever, does not ſeem ow-
'ing to the fever, but to the *materia morbi*
'acting the part of a powerful medicine.' (c)

To the beginning of this paragraph I object, as not agreeable to common experience; which proves the greater number to recover in fevers; unleſs in the plague, or when a fever of peculiar malignancy, has raged in the army or navy; for which alſo many reaſons may be aſſigned: and to the latter part, that the expreſſions *materia morbi—a powerful medicine*, will be unintelligible perhaps to himſelf upon reflection; —however, the admiſſion of ſuch kind of argument will effectually put a ſtop to diſputation!

Next follows, 'Certainly the ſecretions
'and excretions are beſt performed in a re-
'gular 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 ſepa-
'rate water and oil in violent agitation, but
'if

(c) Eſſay, p. 2.

'if the motion was gentle, they might be 'ſeparated by ſtrainers ſuited to the pur- 'poſe.'

It is indiſputably true, that when the ſecretions or excretions are not regularly performed, diſeaſe ariſes; or inverſely, when *that* is preſent, they cannot *all* be regularly performed: but does it really follow, that all offenſive matter is by theſe conſtantly expelled, in a ſtate inſenſible to us? were this the truth, there would be no diſeaſe. Now if the ſecretions &c. are ineffectual, what muſt neceſſarily happen? let this writer ſhew; otherwiſe let him invalidate the reaſoning of thoſe, who look on the enſuing fever as nature's endeavour to relieve herſelf. His ſimile too, though great ſtreſs is laid upon it, is inconcluſive; as it may be aſked, whether in heterogeneous mixtures, *quick* agitation will not ſooner paſs the intended parts, thro' the ſieve, by *more frequently preſenting them?*—ſtill this is meant no farther, than to mark the error in reaſoning; and not as an argument in favour of the theory he oppoſes.

From

FROM an inflamed eye, we are told, 'that if the fluids are thick, encreaſed impulſe will encreaſe the obſtruction; and if the blood has a putrid tendency, the fever will encreaſe it. But what does this prove? no perſon in an *opthalmia* wiſhes for febrile ſymptoms, nor is an encreaſed heat in a putrid fever eligible.

AGAIN he ſays, 'On the other hand, if 'we ſuppoſe the febrile matter to be ſeparated by inteſtine motion, or as ſome call it, 'a ferment in the fluids, yet the fever is a-'gainſt us, as it conſtantly tends to remix 'this heterogeneous matter, that might o-'therwiſe have been expelled *(d)*.'

HERE is an inſtance of falſe concluſion, from his imagination being ſtruck with the favourite ſimile of oil and water: indeed, as theſe are united by agitation, and are ſeparated again by reſt, motion will tend to remix; but what reſemblance to inteſtine motion? or how does it, for example, bear againſt that vegetable fermentation ſo neceſſary for the production of *alcohol*?—There is

(d) Eſſay, p. 3.

is no obligation to defend ſuch ſimile entirely; but ſurely it is more appoſite than our author's: for oil and water are naturally averſe to a union, and it is by agitation, or compulſion, they are mixed. I ſhould ſay ſeemingly, becauſe it is only a diviſion of their particles, violently interpoſed, and not a coheſion, which is the ſuppoſed caſe in the other, and requiring *motion* for ſeparation.

NEXT there is a hint againſt thoſe, whoſe minds are wedded to old opinions, and not open to truth: an unlucky introduction, to immediately uſing the authority of the ancients, for his favourite theory. When HIPPOCRATES is thus quoted as *(e)* extinguiſhing fevers by cold, 'for tho' he attempted to procure *a ſweat in the beginning*, '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 drank which was extremely cold.' ——— 'In acute fevers where the patient is 'very thirſty, he ſays, cold water is of great

 'uſe,

(e) Eſſay, p. 5.

'uſe, if given till it *makes him vomit.*' (f) CELSUS is alſo quoted for omitting medical potions in the fit of ardent fevers, and cooling the patient with oil and water agitated, with vine leaves dipped in water placed on the ſtomach; that "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 do not indeed inſiſt up-"on vomiting, but make uſe of cold water "as a medicine, given only to ſatiety," "and commonly after long thirſt and wake-"fulneſs, after being ſatiated 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."

FROM (g) GALEN, he has theſe words, "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 mani-"feſt that ſuch a perſon is not old, who is "endowed

(f) Eſſay, p. 5. (g) Eſſay, p. 6.

" endowed with all the ſtrength we have " mentioned, but if he is in a good habit of " body, and the ſtate of the air 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 in- " to cold water, they have all immediately " *ſweated*, and ſome have had a *bilious* " *ſtool*."

(h) PAULUS after this is mentioned as ſaying, that ardent fevers " may either be " excreted by *ſweat*, *vomiting*, *ſtool*, or " *urine*, OR *extinguiſhed* by cold water; by " which we have wholly cured burning fe- " vers."

AND *(i)* RHAZES thus: " 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 fire, is " to ſuffer the patient to run headlong into " deſtruction."

HE tells us that AVICENNA, amongſt other medicines, ordered a very large quan- tity

(h) Eſſay, p. 7. *(i)* Eſſay, p. 8.

tity of cold water, which 'he ſays, ſudden-
'ly gives great aſſiſtance. But if drank in
'a ſmall quantity, it conſequently excites
'heat.'

THESE are the principal authorities brought from the Ancients; which I hope the reader will excuſe my requoting, it being done to prevent the charge of unfair dealing. From theſe he ſeems to riſe into conviction, aſking, 'are we not to conſider
'the ſweat and bilious ſtools, which follow-
'ed upon drinking cold water and cold bath-
'ing, as the conſequence of the fever be-
'ing ſubdued, and nature thereby left at
'liberty to diſcharge the morbific matter
'without oppoſition.'

Now from thoſe expreſſions in the quotation which I have marked in italics, viz. 'ſweat in the beginning' — 'along with o-
'ther medicines' — 'makes him vomit' — It is clear that HIPPOCRATES had not his chief hope in cold water, and that an evacuation is expreſsly pointed out, namely, vomiting. The words of CELSUS, 'ought
'to vomit' are of the ſame tenor, and another evacuation follows it, which he ſays is

of

of immediate relief, — 'a great ſweat breaks 'out.'

GALEN's words, evident ſigns of concoction, (whoſe words will have more notice taken of them hereafter) is a demonſtration that the uſe of cold water was not *in the beginning* of the diſtemper, and the *ſweat* and *bilious ſtool* mentioned after cold immerſion, is ſtill with reference to *evacuation*.

In ſtrong habits with ſound viſcera, upon cold bathing, (not too long continued) there is frequently, if not always, a glowing or agreeable warmth and ſweat in the ſkin, the ſureſt ſigns perhaps of cold bathing being not improper. Shall we wonder then, if nature, ever watchful over her patient's intereſt, ſeize the opportunity, and that the morbific particles

qua data porta ruunt.

BUT what terrible effects would ariſe in perſons of unſound viſcera, and bad conſtitutions! — ſimilar to this ſurely exceptions may be made againſt cold potions.

THE concluſion of our author, 'are we 'not to conſider, &c.' may probably appear too

too rapid: theſe ſweats and bilious ſtools acting *as critical diſcharges* of the morbific matter. Nature after this, not wanting to relieve herſelf, it being already done.

PERHAPS the writer may allege, that this is not applicable to his meaning; indeed it is difficult to ſay what is his meaning here: Sure I am, he is not in every part conſiſtent.

PAULUS's words are not aſſertions that this method of curing fevers is only right — he ſaying that the fever is curable by *vomit*, *ſweat*, *ſtool*, and *urine*; OR extinguiſhed by cold water. Thus you may obſerve the extinguiſhing intimates *without* any viſible ſecretion; and if our author does not mean this by *his extinguiſhing*, he ſhould have uſed other words, and told us, that water will thus act as a diaphoretic, cathartic, emetic, or diuretic CRITICALLY.

NOR is RHAZES's authority amounting to more than a prejudice in its favour, from its being ſucceſsful ſometimes.

AVICENNA ſeems more expreſs in the large quantity, yet this author will probably appear,

appear, in the following ſheets, not ſo poſitive an evidence as now imagined.

SUPPOSE then we grant the greateſt latitude, ſtill the reaſonable concluſion from their words is no more, than that in inflammatory caſes, the antiphlogiſtic method is of great utility.

IF ASCLEPIADES forbad his patients to drink, this ſurely is not the practice of the moderns; among whom the general uſe of nitrous medicines, cooling apozems, clyſters, veneſection, &c. is to *repreſs* the diſeaſe, *ſuppreſſion* not being their view, or extinguiſhing a fever ſimilar to a live coal immerged in cold water, which by the way is as eaſily effected in hot.

BUT the confidence in the preceding pages, ſeems attempered by a ſingular diffidence in the following expreſſions.

'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 fif-

'teen

'teen hundred years, there is reaſon to 'think it was often uſed with ſucceſs.'

AFTER what has been obſerved above, it will not perhaps be ſo eaſy to prove this to be the *general* practice; and the words 'often uſed with ſucceſs,' at leaſt give an equal probability of happy termination to the contrary treatment.

MIGHT not the Eſſayiſt have reflected, that from the above paſſages, the concluſion that the extinction ſhould always take place, is too rapid? — he ſhould have known, that even the variolous eruption, where the cooling method of SYDENHAM is ſo juſtly preferable to the hot regimen of MORTON, requires the maxim *ne quid nimis*, — inſtances not being wanting, where that has been carried too far.

OUR Eſſayiſt is of *(k)* opinion, that ventilation is not of equal ſervice with the application of free cold air. Now the difference between ventilation and open air may be conſiderable, but it might not have been unneceſſary to reflect, that there is a *peculiar malignancy* in DAMP, which old caſtles and houſes

(k) Eſſay, p. 13.

houſes not ſufficiently fumigated, purified and warmed, may ſtill retain, and not be eaſily counteracted by the advantages of free air — a caſe where it is leſs pernicious to be expoſed even to the inclemencies of the weather. From this probably we may collect a reaſon why the ſoldiers might recover ſooner in the ſhed, than in *Cariſbrook* caſtle.

It was obſerved in the introduction, that he denied the doctrine of concoction; the truth of this you may now ſee. 'Upon the 'whole then, is there not reaſon to think, 'that all the doctrine of concoction in fevers 'is falſe; and that the *materia morbi* is al-'ways expelled, except after internal abſceſ-'ſes, in a crude ſtate; ſo that inſtead of the 'common adage, *cocta non cruda ſunt mo-'venda*, may not we with more propriety 'ſay, (*l*) *cruda medicamentis aggredi et move-'re oportet*; for who, if they could remove 'the cauſe of a fever in the beginning, would 'in compliance with the doctrine of concoc-

(*l*) No perſon ſurely will deny, that there is ſuch a thing as a critical abſceſs, before the completion of which, i. e. while in a ſtate of crudity, the opening with a lancet, has been moſt times followed with a tedious and difficult cure. May not then a parallel argument be brought for the truth of the old maxim, and error of the new one?

'tion, *(m)* fooliſhly wait for its being re-'moved by the fever itſelf.'

THERE are ſeveral vague reaſons brought to lay a foundation for ſuch determination, but the well rounded periods, deliberate examination will prove to be a cloud of words, and concluſion without the ſubſtance of a ſyllogiſm; while to diſcover the real meaning, and bring it to light in due order, is a point of no ſmall difficulty.

IT is aſſerted, *(n)* that the matter of the ſmall-pox paſſes off in a crude ſtate, not concocted; afterwards becoming *pus*, by warmth and eſcape of the volatile parts; the ſame of other eruptive fevers, or criſes by ſtool; and that a fever removed by a *metaſtaſis* of matter; the matter is in a crude ſtate: and that it is probable the *materia morbi* in all fevers 'changing ſome of the 'humours to the nature of itſelf, is diſcharg-'ed unaltered.'

Now

(m) The word, fooliſhly, would be juſt indeed, were there ſuch election preſent, but the real queſtion is, whether it is beſt to watch nature's motions, or violently to oppoſe her?

(n) Eſſay, p. 18.

Now will this reaſoning abſolutely overturn the doctrine of concoction? For,

THE ſecretions when recent are thin, by ſtagnation moſt become inſpiſſated, and ſome may remain, without contracting any malignancy. Their alteration of aſpect, in the different ſtates, is eaſily accounted for to thoſe, who are the leaſt acquainted with the doctrine of colours. Beſides, may we not ſay, TRUE CONCOCTION IS, when NATURE, THRO' HER VARIOUS PROCESSES, RESOLVING, OR CORRECTING THE OFFENSIVE MATTER, IS READY TO THROW IT OFF BY HER OUTLETS, OR TO SEPARATE IT IN FORM OF ABSCESSES? yet ſhould he ſay that concoction muſt mean an actual converſion of the matter, we would know, whether he cannot think this equally facile with his *materia morbi* changing the nature of the humours to its own? — But be this as it may, and though he make it certain that the matter of inoculation repaſſes thus unaltered, is the argument abſolutely *againſt* concoction? or will it make us inattentive to the operations of nature? To draw, with ſubmiſſion, a compariſon *ab extra*, we ſhould remark, that every perſon the

moſt ſlightly converſant in the common proceſs of brewing knows, that from the infuſion of malt in boiling water, after mixing a little yeaſt, fermentation will enſue, and a deſpumation of a like nature to the yeaſt. No one inſiſts that the particles of the yeaſt are changed, tho' abundantly encreaſed by additional ones from the wort. — We may ſuppoſe, before this is effected, that the wort is crude; when finiſhed, it may be compared to concoction; a compariſon which, in the ſmall-pox or meaſles, may poſſibly be extended farther than is at preſent imagined *(o)*. But on which ſide ſoever this ſimile may be preſſed; fevers ariſing from obſtruction, to which the term concoction is alſo applicable, are of a different

(o) The concoction in eruptive fevers, anſwers to the proceſs of brewing, reſpecting the non-converſion of the offending particles: perhaps too the alteration in the fermented wort, may ſtill bear the compariſon. We are ſure fermentation is followed by purification; but the truth is, we are obligated, ſuch is the weakneſs of language, to uſe terms inadequate to our ideas, even when the mind and ſubject are clear; and with this latitude, we ſhould ſay eruptive fevers have one kind of concoction, while inflammatory fevers from obſtruction, may have another diſtinct from the firſt, as the criſes themſelves are different, and yet both coming under the definition of concoction. See p. 23.

rent nature, and unaffected by the compariſon.

He tells us, (*p*) the ſediment in the urine, which HIPPOCRATES and other writers look for as the mark of concoction, is not to the purpoſe; becauſe a fever attending wounds, throws down a ſediment—becauſe there may be ſpaſms or tenſion—and if the meaning of this obſcure paſſage is collected, becauſe the white light appearance, unleſs when really abſorbed from abſceſſes, cannot be *pus*; or the *cauſe* of the diſtemper; but a *conſequence* of a ſolution of the diſeaſe.

Now we know ſo little of the eſſence of things, or of groſs matter itſelf, that no one will poſitively declare, *that* which is ſeen at the bottom of the urine, to be the cauſe of the diſeaſe; but who, on the other hand, can prove it is not? yet whatever the cauſe, or wherever reſiding, fevers removing after ſuch appearances in copious urinary diſcharges; theſe diſcharges may be called critical, and thoſe appearances marks of concoction, even if they were merely concomitant; an argument from time alone, juſtifying

(*p*) Eſſay, p. 21.

juſtifying the enquiries and expectation of the GREAT FATHER OF PHYSIC.

UNIFORMLY with this laſt notion, our author thinks that a diſeaſed acrimony of the ſalts, in the blood, cannot be rendered by any proceſs of nature milder: ſhe therefore ſecreting them by 'bile, urine, or inſenſible 'perſpiration.' Then we have this queſtion, '(q) Does it not ſeem improbable, when 'perſpiration for inſtance is obſtructed, and 'cauſes a fever, that a method entirely out 'of the courſe of nature ſhould be purſued; 'or that thick matter ſhould more readily 'paſs off than a ſubtle effluvia involved in 'lymph only, the very vehicle which nature 'herſelf has aſſigned for carrying off ſalts, 'that are to paſs thro' the ſkin'? — This paſſage is truly obſcure, but if he means to aſk whether the obſtructed *perſpirable matter* which excites a fever can poſſibly paſs thro' the pores — anſwer yes; by *Diaphoreſis* we believe it may, and he himſelf furniſhes an argument for this, in ſaying the ſalts, with an encreaſed acrimony from ill health, may be ſecerned, even by *inſenſible perſpiration.* — Or if his meaning is with reſpect to *concoction,*

(q) Eſſay, p. 23.

tion, or *concoƈted matter*; we know that nature has been capable of abſorbing even abſolute *pus*, and carrying it away by ſtool, &c.

FROM ſuch arguments having convinced himſelf, that nature cannot correƈt any acrimony; but that ſhe throws off, whatever is offenſive to her, by the forenamed ſecretions; he ſays the irregularity of the circulation, (i. e. a fever) prevents theſe ſecretions, and encreaſes the diſeaſe, by detaining the ſalts and oil, and rendering them *more acrid*, &c. hence he would ſtop the fever, to let the ſecretions be performed.

YET to this, is an unlucky queſtion: whence comes the fever, if the ſecretions can always prove effeƈtual? —or if ſome good end were not the intent of nature, why let it be excited? ſhould he anſwer it is raiſed againſt her choice, by the irritation in diſturbed ſecretion; will it not then follow from his principles of acridity and encreaſed motion, thus aƈting in a circle, and making every thing worſe and worſe, that the fabric muſt inevitably be deſtroyed? Since if ſuch the ill effeƈts of a ſpark, what would the full blaze of fire produce? And is the deſtruƈtion of the machine certain where the fever is *not*

ſup-

ſuppreſſed, but left to take its courſe?—Thouſands of recoveries happily prove this to be erroneous.

STILL brooding over his evil ideas of a fever, he declares, that a fever retards maturation: — tho' when maturation comes on, the fever commonly ceaſes. — Again it is ſaid in large wounds, matter is *never formed* while the fever ſubſiſts, but an ichor, till the fever and inflammation are gone.

THIS probably is an error of *non cauſa pro cauſa*. Whence ariſes the fever in wounded perſons? —not from morbific matter inſerted by the wounding weapon, but from the injury to part at leaſt of the nervous ſyſtem. *Pus* cannot immediately appear upon the beſt theory of its formation, till the veſſels diſcharge themſelves: and when turgidneſs, tenſion, and pain are removed, the ſymptomatic fever ceaſes in conſequence: hence the fallacy of the reaſoning *(r)*.

AMONG

(r) To this opinion of our author, and his ſaying (p. 28.) that a fever is not at all neceſſary, we would oppoſe that of VAN SWIETEN. See Comment on BOERHAAVE's Aphoriſms, §. 158. who tells us, that 'a ſlight fever is rather 'ſerviceable

AMONG the various doctrines of the formation of ‡ *pus*, thoſe perſons who believe the

'ſerviceable by forwarding the formation of *Pus*, or matter 'in the wound, and when the *Pus is formed, the fever gene-* 'rally vaniſhes.'——We are not defending the utility of *violent* febrile ſymptoms, or arguing for thoſe *eſſential fevers*, which may come upon a wounded perſon.

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‡ THE doctrine of the formation of *pus*, being ſomewhat perplexed, I hope the reader will excuſe my treſpaſſing on his patience, in the following note, as it is connected ſomewhat with the ſubject in hand.

MONRO in the ſecond vol. Edin. Med. Eſſ. ſhews, that in his opinion it is the *tunica celularis*, which melts down into *pus*, in all ſuppurations; and that the muſcular fibres are not diſſolved into *pus*. Firm membranes, ligaments, the ſkin, &c. caſting off in Sloughs.

DR. STEVENSON, in vol. 6. p. 358. ſeems to attribute the formation of *pus* to the animal proceſs, which he argues to be the cauſe of animal heat, a mixed nature between putrefaction and fermentation.

MONSIEUR CHIRAC, chief phyſician to the French king, in his chirurgical diſſertations, ſays that it is made by a fermentative motion of the blood, ſtopped at the lips of the wound; when the volatile, ſaline, or ſulphureous parts are diſſipated, by this motion; the GLOBULAR part of the blood is attenuated, and loſes its red colour. When thus diſſolved, *pus* is produced.

the cellular membrane is abſolutely required, we would aſk, what they think of the variolous

THE full meaning of a long diſſertation on this ſubject, by Monſieur FIZES, profeſſor of phyſic and ſurgery at *Montpelier*, is, that a ſuppuration never happens in the ſubſtance of any part, unleſs the ſmall blood veſſels are broken. That when blood is extravaſated in the abdomen, breaſt, &c. the *ſerum* ſeparating, the *coagulum* is firſt formed; then corrupting, turns to a *ſanies*; and when *pus* iſſues with the blood in the operation for an *empyema*, it comes from the adjacent parts. That when a wound is inflicted, obſtruction and diſtenſion follow, thence pain and heat; the *ſerum* being *diſſipated*, the RED COAGULATED GLOBULES mixing by the action of the ſound veſſels, with the fibrous mucilaginous lymphatic parts, which themſelves are of a white colour, become *pus*.

MR. FREKE, in his art of healing, tells us, that after an hæmorrhage is ſtopped in a wound, a thin gleety humour iſſues, till the red globules ſeparating from the *ſerum*, collect themſelves round the turgid extremities of the divided veſſels, forming as it were a ſpunge; through which the SERUM being forced; on account of the air it contains; cauſes the deſpumation, as certainly as ſoap-ſuds blown through a tube with a ſpunge at the end.

THIS deſpumation is the *pus*, for either *ſerum* or ſoap-ſuds, whipped up by a whiſk into a cream, reſembles *pus laudabile*.

DR. HUNTER, in the ſecond vol. Lond. Med. Obſ. acquaints us, that *pus*, tho' generally found in the ſpace naturally filled up by the cellular membrane, is alſo in the larger cavities, where that membrane is not. That *pus* may be of two different kinds, one attended with breach of the ſolids, the other a ſort of inſpiſſated SERUM, or inflammatory exſudation: that it is ſeen even on the external inflamed ſurfaces;

lous puſtule? — And we appeal to common obſervation, whether the puſtules moſt replete with purulent matter, ſimilar to *pus laudábile*, have not their baſes more inflamed than thoſe where the interſtices are pallid. This to the author's argument of fevers hindering maturation. — But ſays this writer; if the doctrine of concoction were true, inſtead of preſerving, it would probably deſtroy the patient; becauſe the natural tendency of acrimony from the ſalts in the *ſerum*, is to render the *craſſamentum* ſufficiently fluid for the circulation; therefore concoction in his ſuppoſition deſtroying the acrimony of theſe ſalts, the concluſion, &c. ——

Se-

ces; eyes, noſe, urethra, vagina, &c. The Doctor remarks, 'that a very ſmall quantity of the veſſels only is deſtroyed in 'common abſceſſes, be they ever ſo large; and thence we 'may obſerve, that there are hardly any traces left of large 'abſceſſes that heal up quick.'

To this obſervation I would add, that when an abſceſs is formed, the tumour is in ſize, nearly the ſame, to what an injection of fluid equal to the quantity of *pus* would make in the healthy counter-part. Now, it is impoſſible that the cellular membrane in the ſpace of the tumour ſhould make ſo much *pus*, and improbable that it ſhould be melted down and brought from other parts of the body. It is evident therefore, the *pus* muſt be formed from the obſtructed juices in the tumour, which tranſuding ſome, and rupturing other veſſels, thro' heat and action are thus converted; and *pus*, probably, is a compoſition of ALL theſe fluids, not a SINGLE ONE.

Seriouſly this is a remarkable *petitio principii*. Shall we ſuppoſe nature ſo improvident, that one of her proceſſes would inevitably bring deſtruction, and this too, when her deſign is the conſervation of the frame? It is impoſſible for us to believe ſuch the true idea of concoction!

THIS is the ſubſtance of the argument againſt the doctrine, and this ſection is wound up with the following queſtion. 'Has not a 'certain fever-powder worked itſelf into cre-'dit only by removing the firſt cauſe of thoſe 'fevers, which ariſe from obſtruction, and 'thereby preventing the havock that other-'wiſe would have been made?'

FROM what is certainly known of the conſtituent parts of the powder alluded to, it is moſt evidently a deobſtruent; and in fevers ariſing from obſtruction, it's efficacy may be ſeen as it were mechanically: but in thoſe fevers, where the blood is manifeſtly in a diſſolved ſtate, what expectation can we have from its uſe? — If then in different ſtates of the blood the powder may be injurious, may not cold water alſo, by a ſimilar argument, be of prejudice?

WHEN

WHEN preſſed by the good effects attending warm medicines in fevers, eſpecially in the pallid ſmall-pox, '(s) in which very 'warm cordials have increaſed the fever, and 'done remarkable ſervice.' (He ſhrewdly 'adds) 'moſt likely not by encreaſing the 'fever, but by ſtimulating the almoſt inac-'tive nerves, and thereby cauſing the ſmall 'veſſels to carry with proper vigour the con-'tained fluids to their extremities.' It may be difficult to ſhew that this *ſtimulus* can thus exiſt without *effecting* what may be called a fever; but ſurely theſe *ſtimuli* do not accord with the extinguiſhing ſcheme. Reſpecting (t) critical abſceſſes, thoſe are brought to ſuppuration ſooner, where the ſymptoms run higher, while the exact manner in which the bark does act, notwithſtanding ſome late ingenious attempts for explanation, may be above our reſearches; though on all hands it is allowed, digeſtion is moſt commonly promoted by it.

STEADY in his determination againſt the advantage of febrile ſymptoms, he ſuppoſes that morbid matter is expelled 'by

(s) Eſſay, p. 27. (t) Eſſay, p. 28.

'by a *(u)* proper degree of *ſtrength* and 'elaſticity in the veſſels; which we imagine 'without a fever, will always be ſufficient 'for carrying off any offending matter, pro-'vided the veſſels are pervious, the juices in 'proper quantity, to ſerve as a vehicle, and 'thin enough to paſs the extremities.'

THAT the human frame is evidently a piece of natural mechaniſm, muſt be confeſſed; but that it is *ſomething more*, is alſo known, from innumerable experiments. — To ſpeak ſtill in a mechanical ſtile, where has the perpetual movement been found? — yet in the circulating blood it is viſible. Mechaniſm probably is ſecondary, while that which begins and regulates the vital motion, in the higheſt ſenſe, is inexplicable. To talk then of morbific matter being expelled by *ſtrength* and *elaſticity* alone, is degrading the dignity of NATURE, and bordering on a preſumptuous philoſophy. —— But ſuppoſing the veſſels *not pervious*, &c. are we to have recourſe to cold water?

WE are aſked, Whether (*x*) inflammatory fevers, pleuriſy, peripneumony, &c. are

(u) Eſſay, p. 30. *(x)* Eſſay, p. 31.

are not cured alike by removing the inflammation and obſtruction? Undoubtedly, yes. —— This is the aim of every phyſician; however, is it beſt effected by the preſent mode of rational practice, or the extinguiſhing watery method?

THE writer next enquires, Whether every fever is not, in conſequence of acrimony, irritating the medullary part of the nerves, and this either in an acute putrid fever, ariſing from the matter of bruiſed fleſh; abſorption from the *uterus*; or received by infection, in a particular putrid ſtate of the air: thence arguing that *every fever is ſymptomatical, (y)* which muſt of courſe conſtantly tend to 'make itſelf more 'violent, by ſtill encreaſing the acrimony, 'and diſſolution of the blood.'

THE very ingenious Mr. HUME has proved, that cauſe and effect are not ſo eaſily intelligible as generally imagined.——And indeed, though not ſtrictly philoſophical, the ſecondary we frequently look upon as the primary. For a caſe in point. Fever may have ſome remote reſemblance to fire: this

(y) Eſſay, p. 32.

this from the very name in the original language. Now * fire from the beſt theory, is but an effect of motion; and yet we never ſay motion is deſtroying the blazing houſe.

THE fever may then be truly an effect of irritation from morbific matter, but the alarm is not till diſeaſe is beginning, and till the effect is perceivable, we do not think of the cauſe.

HIPPOCRATES ſays,

ο τι γαρ αν λυπη τον ανθρωπον τουτο καλειται νουσος. (a)

That which afflicts a man is called a diſeaſe. Now it is the fever that afflicts the patient, and that we may deem the diſeaſe — morbific matter may be within the frame, and running

* THOUGH the learned BOERHAAVE, &c. thought fire to be elementary, yet the NEWTONIAN expreſſion of its being mechanically produced by friction, may be juſt; and perhaps when electricity ſhall be thoroughly underſtood, ſome part of the HUTCHINSONIAN philoſophy may prove true. We ſay ſome part, being by no means converted to the general doctrine; for we cannot ſubſcribe to the reveries. But we ſhould receive inſtruction from whatever quarter coming, conſidering that the human mind is too prone to *poſitive approbation*, or *abſolute diſlike*; while the truth is, few are *totally wrong*, ſtill fewer *perfectly right*.

(a) Hippocrates de Flat. Ed. Foes. p. 296.

running through the circulation, yet the machine not be diſordered ; witneſs the inſerted variolous matter ; while no body, till febrile ſymptoms ariſe, ſays the inoculated perſons are diſeaſed †.

FROM the ſpeedier *(b)* recoveries of the ſoldiers in the open and ſlovenly made hovels, than in the warmer and cloſer made rooms, he infers the great advantage of cold ; yet the diſeaſe being a putrid fever, it is not to be wondered at, as heat is at leaſt one of the parents of putrefaction. Beſides, there is a ſecret property in air, the *pabulum vitæ*, which is taken away by inſpiration, conſequently in confined places quickly impaired ; this independant of the quality of cold, whence an extenſion of the

† PERHAPS the Eſſayiſt may remark, that this is inconſiſtent with the opinion, (ſee above, p. 9.) which is on the ſide of thoſe, who believe that a fever may be an effort of nature for relief: while here the fever is looked upon as a diſeaſe itſelf: and he may triumph in the ſuperior ſimplicity, in idea of a fever, when he aſſerts it always to be ſymptomatical. But if he cannot collect the meaning from the above, it may be explained, by ſaying, that the removal of chronical complaints, by a fever ſupervening, will juſtify the firſt ſentiment ; and general opinion, as well as HIPPOCRATES's expreſſion, countenance the laſt.

(b) Eſſay, p. 35.

argument to cold water, cannot be ſupported.

Our author comes now to voluntary confeſſion, that fevers have been cured by 'warm baths, *diaphoreſis*, and other evacua-'tions,' thinking however, we cannot certainly cure fevers by theſe methods; that ſucceſs in the attempt of ſweating is not ſure; therefore we ought to 'take into our aſſiſt-'ance, any remedy that will, with ſafety, 'and leſs uncertainty, reſtore our patients.' Indiſputably, could we find ſuch a remedy; but alas, this is ſtill among the *deſiderata*, cold water is not this febrile *panacea*.

It has been frequently obſerved, that *magna eſt veritas et prevalebit*; read the following words, and admire the adage—could an advocate for the eſtabliſhed practice have ſaid more?

'But in the beginning of fevers, it will 'be proper, if poſſible, to render the whole 'ſtate of the veſſels pervious, for which 'purpoſe ſuch *evacuations*, and ſuch *deobſtru-'ents*, muſt be uſed as the nature of the diſ-'eaſe requires.'—This is undoubtedly rational, however, ſo much cannot be ſaid for what

what comes after; where is recommended, *(c)* firſt inſpiration of cold air; next expoſing the body to it; then draughts of cold water; and laſtly, cold water poured upon the head 'till the fever is ſubdued.' One reaſon given for all this is, 'becauſe thoſe 'who by miſtake have been expoſed to cold 'air, have received manifeſt advantage.'— It is true, people may then have recovered; but recoveries happen after very improper treatment; ſo kind is DAME NATURE; while we ſhould not abuſe her tender mercies, by inconſiderate concluſions. Again, 'And we may obſerve once for all, that 'whenever cold any way is uſed, a due de-'gree of ſtrength ſhould alſo be obſerved, 'that the morbific matter may be properly 'expelled *(d)*.' Is this alſo more agreeable to his firſt principles, or the contrary?

IF the reader does not begin to ſee an inconſiſtency in our author, he will diſcern it ſurely in the next quotation, where after ſhewing from Dr. STEPHENSON the advantage of reſpiring cool air, he ſays, (ſpeaking of the cure of fevers, and burning fevers too) '(*e*) particularly we ſhould not 'omit

(c) Eſſay, p. 38. *(d)* Ibid.
(e) Eſſay, p. 39.

'omit evacuations, by urine, or ſtool, or 'both, if the matter does not paſs off by 'the ſkin, nor muſt other medicines, whe-'ther *antiphlogiſtics, cordial attenuants, anti-'monials, 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* too.'——The ſimple medicine how changed!

AFTER this you may not be ſurprized to find him with quotations from the forenamed authors, GALEN, CELSUS, and AVICENNA, as reſtrictions on the uſe of cold water; his candour could not exert itſelf, to permit theſe ſo full as they might have been; as will, if compared, be ſhewn preſently; yet ſtill they are unluckily ill adapted to his plan: and as if he repented of bringing even theſe, through fear of his readers turning them againſt himſelf, he next condemns the venerables, by ſaying that the ancients ſuffered the fever to make a greater progreſs, than was conſiſtent with the welfare of the patient, before they endeavoured to ſuppreſs it by cold: HIPPOCRATES himſelf cenſured for not doing it ſooner, and

charged

charged with *leading poſterity out of the way!*—Is modeſty or raſhneſs a proper epithet here?

It may be pleaſant to obſerve how confidently, in the beginning of the pamphlet, the ancients are quoted, in paſſages favouring his doctrine: but when at the laſt it was ſcarcely poſſible to avoid hinting at reſtrictions; he pulls down the authority by himſelf built up: however, what is ſaid on the occaſion carries its own antidote, when reading of the ancients is recommended. —— A peruſal of thoſe, baniſhing ſuch viſionary ſchemes.

The remaining part of the book is chiefly filled up, with what rather favours the reigning mode of practice, eſpecially that recommending the cold regimen: conſequently containing nothing new; for ſuch reaſon, and to avoid prolixity, particular notice ſhall not be taken of it; and to ſhun even the ſuſpicion of a cavil, *many exceptionable paſſages* will not be here recited.

The vanity of aiming to account for every thing, has too frequently given riſe to romantic

romantic theories in phyſic, and the confidence in ſuch, has in the eyes of the diſcerning world, brought ridicule at leaſt on the profeſſors; this again by others has been transferred to the art itſelf; till a fixed ſcepticiſm reſpecting its uſefulneſs has remained with ſome, prevented by their natural indolence in criticiſm, from duly attending to argument. A ſimple mathematical truth is eaſily intelligible, but the ſublime requires painful inveſtigation, though nevertheleſs true. Was the art of healing tried by this rule, a greater reliance on its aphoriſms would be ſeen, and the door now open to impoſition eternally cloſed. Credulity and incredulity have each a numerous party. Some perſons delight in a ſimplicity, others in what is complex: truth is generally on the ſide of the former; yet a too great fondneſs for it may lead us into error; though to invent a true *principle*, and argue from that, is the road to wiſdom.

GRAVITY in the Macrocoſm, has by the explication of a NEWTON, been productive of ſurpriſing diſcoveries; ſtill ſhallow indeed muſt that philoſopher be, who thinks all the *phænomena* of nature derived from it.

Thus

Thus that fever is a fire, and cold water its antagoniſt, is eaſy to ſay, or influence ſome to believe: but ſimplicity like this is real folly, as the ſtrangeſt things may be proved by this kind of ſyllogiſms. By ſuch you may demonſtrate that a fever will always preſerve life, *e g.* Death is a ceſſation of motion in the heart. — Fever is an encreaſe of the heart's motion. — Therefore excite a fever, and life is preſerved: now what medical ſtudent can believe this? who among the vulgar will aſſent to it? — Neither is the maxim *contraria remediis, &c.* always right, for the application of heat in froſt-bitten people, is frequently attended with pernicious effects.

THERE is one thing which ſeems to have eſcaped our author, viz. that the ſimplicity of the practice, muſt have ſet its virtues in a true light, in this age of the world. For whenever labouring under heat and thirſt, the common accidents of a fever, ideas of cold, and moiſture naturally occur; theſe properties the river water poſſeſſing, drinking to ſatiety, muſt have followed; and had it been of ſuch efficacy, the certain recoveries would have occaſioned univerſal repetition,

and

and the practice been eſtabliſhed for ages paſt. In like manner that noble febrifuge, the cortex, it is ſaid was accidentally brought to light; an Indian afflicted with a fever, drank to ſlake his thirſt, of water, in which the trees had fallen. This, and many other noble medicines, were unknown to the ancients; their *materia medica* being confined; nor are we to look into HIPPOCRATES, ſo much for the curative part of phyſic, as a faithful narrative of ſymptoms, and happy rules for prognoſtics. We ſhould be attentive to nature, and receive every information as an act of grace: the *priori* argument, moſt commonly leading reaſon aſtray; while the *poſteriori*, is as a certain clue, by which we may return from an erroneous purſuit back to the central truth. Cloſe, and diligent obſervation as at firſt, ſo it will at laſt, be the baſis, on which every rational ſyſtem of either natural philoſophy, or of Medicine itſelf is built. From ſuch a method of conduct HIPPOCRATES was deemed the father of phyſic; and SYDENHAM on this eſtabliſhed a reputation, over thoſe, whoſe mental abilities, and extenſive learning, were very ſuperior: while if ſucceſs in the cure of fevers, will prove the excellency

of

of the phyſician's practice; ſee the eulogium on this laſt named great man in BAGLIVI, where he is called, by way of eminence, the DOCTOR FOR FEVERS *(f)*.— The theory of concoction was a leading point with him, and if there is a doubt thrown on the opinion of fevers being ſometimes cured by nature *aſſimilating the morbific matter*, yet ſhe may ſo manage it, that an imperceptible evacuation may remove the enemy, and it is only (as ſaid before) when the ſecretions are ineffectual for the purpoſe, diſeaſe ariſes.

THE ſudden invaſion of an intermittent fever, convinces that there is ſomething amiſs within the frame, and that nature is attempting to relieve herſelf, by exciting the tumultuary motion: and when by this effort the immediately offending cauſe is ſufficiently removed, the effect ceaſes: and though we are not clear why the return is in proportionate times, or cannot drag the cauſe into light, for the cognizance of our ſenſes; ſtill the ceſſation of the fever is againſt the ſuppreſſing theory. Again, the returns of fevers when not *intermittent*, but properly relapſes, and which the ancients obſerved

(f) Bagliv. Pract. of Phyſ. p. 143.

after ſeemingly perfect criſes : declare plainly a *materia morbi* lying dormant in the human frame, till rouſed on ſome particular occaſion. Should the fever excited by this matter, be always by drinking cold water ſuppreſſed, extinguiſhed, or ſtifled ? will not the cauſe be ſtill remaining within, and if then to be removed by the uſual ſecretions, why not paſs off before an alarm from febrile motion is given ? It will not ſurely be aſſerted, the drinking cold water has altered its nature, for this will be attended with greater difficulties, than the opinion of aſſimilation, as the cauſes are various, even in inflammatory fevers, while the different periods, nature relieves herſelf in, argues a great diſtinction.

INDEED, that the *cauſes* of fevers are not always the ſame, the variety of ſymptoms evince ; nay they may be as diſtinct, as diſeaſes themſelves are different ; hence the error, in thinking that cold water and cold air in every fever are required.—What horrid conſequences muſt enſue in malignant petechial fevers, under ſuch management, or in the ſlow nervous : now in this laſt eſpecially, that generally ſalutary evacuation in caſes of inflammation the lancet, muſt be

par-

particularly avoided, and cold water, by a parity of reaſoning, will be injurious. This is a fever where ſuppreſſion is wrong, what method then of cure to be obſerved? anſwer; ſupport nature, by cordial medicines, bliſters, diet, &c. till the termination. It is granted then, we are contemplating a fever where it is beſt to wait, till concoction is perfected; and if in this, why not in inflammatory caſes? it may be ſaid, becauſe an oppoſite practice is wanted — true, if *that be oppoſite* which conſiſts only in *bridling*, or *curbing*, not *ſtopping* the mettleſome fury, till the ſame end be *attained*.

But when inflammatory fevers have run on, without the leaſt aſſiſtance from art to repreſs them; where alſo capricious cravings have been indulged; experience has ſhewn us many recoveries: — how unjuſtly compared then are fever and the human frame, with fire and fabrick, compoſed of combuſtible materials; for do we ever ſee ſuch houſes conquer the flame, when left to themſelves? The exact manner, in which febrile miaſmata in malignant caſes act, will ever be inexplicable by the utmoſt efforts of the moſt accurate enquirers. Even in the more

ſimple

ſimple epidemics, difficulties occur, not to be ſolved by conſidering the properties of air, hot or cold, moiſt or dry, or a combination of theſe; their effects alone falling under our cognizance, and we cannot prudently expect more than to learn their ſymptoms; when by analogy we may purſue a rational method of cure.

It cannot perhaps be diſproved, that ſome of the ſtimuli of fevers, may have in the ſtores of nature, their proper antagoniſts, as *acids* are to *alcalies*; but confeſſedly in this, the art is defective in diſcovering, what futurity may at leaſt in part be bleſſed with. A few centuries back, who could foreſee, the noble acquiſition to the *materia medica*, in the moſt excellent febrifuge the bark? then too the uſe of antimony, was prohibited by law, and ſimple mercury declared a poiſon. While if cold water is the univerſal febrile antidote, what a complication of knavery, jargon, and nonſenſe, phyſic has ever been!

But alas, cold water has been weighed in the balance, and found wanting: in every age has the uſe of it been introduced, and every age, with its utility, has explored its inefficacy, and miſchievous effects. Amongſt the

the moderns of great name, HOFFMAN perhaps has expatiated the moſt upon it, in a particular treatiſe *(g)*: where we find him, a ſtrenuous advocate for its uſe; not only in *fevers*, but in *dyſenteries*, *bilious vomitings*, *foulneſs of the ſtomach*, *iliac paſſion*, *cholic*, *ſtoppage of the hæmorrhoids*, *ſpaſm*, *heat*, *pain and anxiety of the ſtomach*, *in hypochondriac and hyſteric complaints*, *pains of the breaſt*, *cough*, *and diſeaſes of the joints*, *in the gout*, *head-ach*, *and convulſions*. Where ſome remarkable inſtances of cure are given; concluding with this reflection, "*(h) Singulares certæ et mirabiles &c.*" 'So peculiar and 'wonderful are the effects of drinking cold 'water, that ſome may eſteem them the 'works of chance; the reaſon not being ob-'vious: but we are of opinion, it is not ſo 'difficult to find it; becauſe we believe 'that cold drink is very powerful in *exciting* '*a fever*, or *febrile motion*, to the reſolving 'of obſtruction, in the ſmaller veſſels; and 'diſcuſſing the adhering morbid matter: for 'there is no fever without a rigour, when 'the blood is forced back on the larger veſ-'ſels, the *diaſtole* encreaſed, and where the 'body is yet ſtrong, a greater *ſyſtole* follows, 'thence

(g) Hoff. de aquæ frigidæ potu ſalutari.
(h) Hoffman de aquæ frigid. §. xxxi.

'thence the circulation becoming more ra-
'pid, by the quick motion, the cauſe of the
'diſtemper is ſhaken, and removed.'

THE exciting a fever, and febrile motion, *artificialem quaſi febrem et motum febrilem*, probably may ſtartle thoſe who are fond of the extinguiſhing practice.

IN his (HOFFMAN's) quotation from RIBERIUS, on the admixture of *Spt. Sulph.* or *Spt. Vitriol.* with water, copious ſweats were brought on to the ſucceſsful cure of tertians; when you may obſerve the ſtreſs was laid on the *diaphoreſis*; what in fact may be excited by drinking water diluted with vinegar, or ſipping warm water alone; while it is the *effect* from *whatever cauſe* we ſhould look to.

BUT HOFFMAN's candour would not permit him to neglect mentioning, what ill effects cold water drinking may occaſion. For, ſays he, (*i*) *Docet præterea experientia, &c.* 'Experience teaches us, many chro-
'nical and acute diſeaſes are brought on by
'cold drinking, ſuch are *inflammation of the*
'*ſtomach, bowels and lungs, ſpaſms, aſthmas,*
'*conſumption, dropſy, hectics, hypochondriacal*
'*diſ-*

(*i*) De aq. frig. §. 6.

'*diſeaſes, ſuppreſſion of the hæmorrhoidal,*
'*and menſtrual flux, from whence grievous*
'*affections of the whole nervous ſyſtem.*'

He recites too a remarkable caſe of a young (*i*) phyſician, who labouring under a ſcorbutic diſeaſe, by drinking cold water, inſtead of beer, brought on an *inextinguiſhable thirſt*, and complaints that death alone could relieve him from.

Should the authority of an ancient be required, look into Hippocrates; who ſays, cold water will bring on *cramps, convulſions, &c.* that it may be either beneficial or injurious: — this beſt known from the eaſe of ſuſtaining, or the pain, and trouble of it (*k*). There are many ſcattered paſſages of his works, where warm water is recommended in the cure of fevers; but in the place quoted by our Eſſayiſt, he confeſſes (true enough) that it (cold water) was uſed when other methods failed.

The practice then ſeems to be from neceſſity; when perhaps Hippocrates expected

(*i*) De aq. frig. §. 6. (*k*) Hippocr. Ed. Foes. p. 425.

pected by its uſe to excite a rigour, that the ſucceeding ſweat might chance to remove the diſtemper.

(l) Καυσος ριγος επιγινομενου λυεται.

'*A rigour coming upon an ardent fever cures the fever*'.

AND again in a fever, where the fever was light, on the touch externally, but internally great heat, tongue rough, and hot breath; 'if a rigour, and vehement fever attack him, 'and the patient ſweats, he recovers, on the 'ſeventh day, otherwiſe he dies on the 'ninth (m). It is certain the expreſſions of (n) CELSUS, wherein he endeavours to excite a ſhivering, calling it the beginning of new motion, whence greater heat, and remiſſion, countenance this opinion. The above-named writer RIVERIUS will ſhew what were the real ſentiments of GALEN. *Aquam frigidam quod attinet eam Galenus, &c.*

'RE-

*** THUS it apears, that to draw a poſitive concluſion from HIPPOCRATES, for extinguiſhing the fever, is without juſtice: indeed, it is not ſo candid to wreſt paſſages from authors, in ſupport of tenets contrary to their own; their true ſpirit ſhould be conſulted; partial criticiſm making even the ſacred volumes juſtify the moſt heretical creed.

(l) Hippocr. Ed. Foes. p. 136. (m) Ibid. 473.

(n) Celſ. lib. 3. cap. 9.

'RESPECTING cold water GALEN orders 'it to be drank plentifully, till the ſick per- 'ſon turn pale, tremble, and is ſufficiently 'cold in the body; for he ſays it will ex- 'tinguiſh the fiery heat, ſtrengthen the ſolid 'parts, and diſcharge the uſeleſs humours 'by ſtool, urine, or ſweat. Yet in admi- 'niſtering it, he gives many cautions, that 'it ſhould be in the *height of the fever*, when '*ſigns of concoction appear*, the patient *accuſ- 'tomed to it in health*, of a ſound and full ha- 'bit — free from tumour in the viſcera; 'the ſtomach, oeſophagus and nervous ſyſ- 'tem not weakened, *otherwiſe there will be 'danger of an aſthma, dropſy, trembling, con- 'vulſions, lethargy, and other grievous affecti- 'ons ariſing*. This remedy however is laid 'aſide, in the preſent day, when it is ſo dif- 'ficult to obſerve every precaution, and 'where from its prepoſterous uſe, ſo many 'dangers are threatening' *(o)*.

THESE are the words of RIVERIUS, who in another place *(p)* tells us, that *ten or twelve ounces* of cold water, with a *few drops of Sp. Vitriol*, will produce *that effect*, which GALEN attributes to *three or four pints*; when there will be no apprehenſions of thoſe

(o) Riv. Prax. Med. lib. 17. cap. 3. *(p)* Ibid. lib. 18. c. 1.

evils, which GALEN confeſſes to *often follow* the uſe of cold water. He then minutely recites the ſalutary effect of this medicine, *Sp. Vitriol, &c.* and who will not (when the uſe is right) prefer the leſſer to the greater quantity?—Here ſhould the cold water ſyſtem be juſt, RIVERIUS would indeed have made an important diſcovery.

PAULUS ÆGINETA very conciſely ſays, *ſi quando talibus coctionis, &c.* 'if you ſee *ſigns* 'of the humours being *concocted*, and there 'is neither *phlegmon*, *ſchirrhus*, or *oedema*, 'nor any parts ſo cold, that injury may ariſe, 'you may boldly give cold water (*q*).

DOES the reader now think that our Eſſayiſt has been quite ſo candid in his quotations? — Did he not know that CELSUS recommends the uſe of *warm water* as having a ſalutary effect, when exciting a univerſal ſweat, this either drank, or poured upon the head? *(r)*

AVICENNA alſo teaches us, that in 'ſanguineous habits, great vital health, much 'ſtrength, and ſound viſcera, cold water is a 'moſt excellent remedy, many times *expel-*

'*ling*

(*q*) Paulus, lib. 2. cap. 23. (*r*) Celſus lib. 3. cap. 6.

'*ling the cauſe by vomit, urine, ſweat, or alto-*
'*gether.*' But then in oppoſite habits, ſays it is equally pernicious. He is particularly attentive to the circumſtance, whether the patient has been accuſtomed in health, to drink cold water, or not; as in the former caſe it is proper, in the latter the contrary: for in a weak habit it will occaſion a *difficulty of ſwallowing*, and *breathing*, *tremblings*, *convulſions*, *&c.* 'and cold water ventured upon 'imprudently, may by conſtringing the pores 'in a fever, excite *another fever ending in ob-*
'*ſtruction, that ſhall be worſe than the firſt.*' (*s*) And after obſerving that cold water in *complaints of the ſtomach* is injurious, ſays * 'oftentimes in fevers it is the *cauſe* of an *additional fever*, therefore we ought to drink '*only warm water* in a fever.' It is true, (*t*) ARETÆUS ſpeaking of the uſe of water in *cholera*, ſays, ρηιδιως μεν το ψυχρον εν τη κοιλιη θαλπεται '*cold water eaſily grows warm in the belly*,' but this cannot be predicated of every conſtitution, and as he aſcribes many diſeaſes to it, viz. *quinzy*, *dyſentery*, *iliac paſſion*, *&c.* he can

(*s*) Avicenna lib. 4. tract. 2. cap. 2.

* Et multoties fit in febribus, cauſa additionis febris; non ergo oportet ut bibatur in febre, niſi aqua calida.

(*t*) Aretæus Cappadox de curat. morbor. acutor. lib. 2. cap. 4.

can by no means be made an advocate for its promiſcuous uſe.

THUS we have ſeen, that however cold water has its utility, many ill effects are the conſequence when it is adminiſtered raſhly; and which were not ſufficiently pointed out by the eſſay we oppoſe. — That navigator would be univerſally cenſured, who in delineating his chart, ſhould neglect to lay down the rocks, and ſhallows; but alas, ſuch are the influences, and predeterminations of vanity, that in medical diſquiſitions, ſimilar if not equally criminal omiſſions are frequently found.

IT is now clear that GALEN, and PAULUS, whoſe evidence ſeemed moſt ſtrong on the ſide of our Eſſayiſt, never intended to recommend the uſe of *cold water* in the *acceſſion* of a fever: but when *ſigns of concoction* appear, *i. e.* when the diſeaſe is known to be on the turn: — the effects too expected by them, were evacuations, by *vomit*, *urine*, *ſweat*, or *ſtool*: ſecretions moſt approved for *favourable criſes*; ſo that cold water was uſed for the purpoſe of diuretic, ſudorific, cathartic, and emetic; and perhaps when we ſay, that the termination of the fever

may

may be *inſenſible*, we may have diſcovered what is meant by the word of ÆGINETA, *extinguiſhing*.

IF there is permiſſion to reflect a little on the nature of our ſubject, we ſhall conſider water as poſſeſſing the general principle fluidity, with cold, or heat ſuperadded: moſt probably the happy effects are ariſing from its being a fluid, and a kind of general ſolvent, a ſuppoſition that will account for many apparent contradictions, if not perfectly reconcile jarring authors. Here, as in religion, the *modes* are too violently contended for, and influenced by imagination, or animated by zeal, we are hurried beyond the proper field of argument.

IF water be drank ſimply and warm, it may ſoon excite a *nauſea*, and a leſſer portion operate; if cold, larger quantities are requiſite for the ſame event: the containing parts alſo by the property of cold, may be ſtrengthened; ſo that when the ſecretions vomit, or ſtool are begun; they may be carried on more powerfully, and as many fevers are owing to the diſeaſed ſtate of the bile, ſuch evacuations may then effect cures without cauſing our amazement.

BUT

But purging in the beginning of fevers, farther than cleanſing the *primæ viæ*, is juſtly rejected by the moderns, as being found prejudicial. What ſhall we then ſay, that contrary to a general maxim, here the *extremes are right?* Will the ſucceſs of the violent evacuations, which the teſtimony of the ancients prove, account for the event of ſimple purging, as an error of quantity, by weakening the vital force to no purpoſe, as in dropſical caſes, where gentle purgation is thus hurtful? This indeed may be argued, if we would turn advocates for raſh practice: but rejecting vague reaſonings, we ſhould attribute the facts to the wonderful powers of nature. She is always ready to avail herſelf of any thing preſenting; and a grand cauſe of error in phyſical reaſonings is, our minds being prejudiced with the idea of *one rule:* — She has many ways of turning herſelf, and however difficult to reconcile with our narrow philoſophy, the hot regimen, and even abſtinence from liquids, may have been attended with events, fruitful in plauſible argument, for ſuch practice: otherwiſe it is not eaſily conceivable, that perſons of the leaſt capacity, ſhould ever have been its advocates, or their humanity not alarmed at the ſuppoſed inevitable deſtruction.

After

AFTER what has been ſaid above, ſhall we prefer the extinguiſhing ſcheme to the rational ſyſtem of medicine now prevailing? a ſyſtem which has been the work of ages, and which futurity may finiſh with what degree of perfection is compatible with the powers of human nature. The probability of this will be ſeen, when with proper attention, we look into the works of that great phyſician, BOERHAAVE, and his admirable commentator VAN SWIETEN, a ſlight inſpection into whoſe writings, would alone have ſhewn our author, what a tottering foundation his hypothetical ſtructure is raiſed upon. This laſt named phyſician, when mentioning ſome good effects of cold water, given in fevers; informs us, that the cravings of the patient may occaſionally be complied with, ſtill however with this reſtriction, to give it in *ſmall* quantities, and *often*; to prevent the bad effect of *large* potions drank at *once*; then adds, 'that we cannot 'reaſonably conclude from theſe extraordi-'nary caſes, that cold drink ought to be ad-'miniſtered to febrile patients, no more 'than one can recommend ſalted herrings, 'bacon, and the like, in the diet of febrile 'patients; becauſe ſometimes fevers have

'been

'been cured by the taking of *theſe*, contrary 'to the advice of the phyſician *(u)*.'

BESIDES, he obſerves water alone runs too ſoon through the paſſages, before the dry parts are ſufficiently moiſtened; and therefore mealy ſubſtances are prudently added, which give a mild tenacity, and being naturally inclined to acrimony, reſiſt putrefaction *(x)*.

THAT the neutral ſalts, native ſoaps, honey, ſugar, and juices of ripe fruits, ſhould be adminiſtered always with watery medicines, for the ſame purpoſe; and decoctions of the bitter and moſt lacteſcent herbs: becauſe they never encreaſe heat, abound with a diſſolving power above almoſt every medicine; and excite no diſturbance in the body during their action *(y)*.

THIS practice of giving proper diluting drinks (ſo different from mere cold water) with medicines, according to the ſpecies of fever, till nature has concocted the offending matter, is rational; but to make the term intelligible he ſays, it is not ſo much an alimentary converſion, as where the ſtimulus

(u) Van Swiet. Com. Boer. §. 640.
(x) Ibid. §. 105. *(y)* Ibid. §. 614.

mulus is ſo changed, to be leſs offenſive, and diſpoſed to expulſion from the body *(z)*. — Till the offending lentor is reſolvable, even miſchievous effects have been brought about by the uſe of the cortex itſelf, in inflammatory fevers. They may be kept under, but the ſtimuli remaining, chronical diſeaſes happen, becauſe the lentor was not removed *(a)*. — To ſhun in fevers this medical SCYLLA, and CHARYBDIS has been the ſedulous endeavour of the great luminaries of phyſic in every age. And

'To moderate the force of the fever that 'it may not be too weak to diſſolve the fe-'brile coagulum, nor yet let it be too vio-'lent, whereby it may deſtroy the tender ſo-'lids, and coagulate the fluids *(b)*.

'THE cure of fevers is never more happi-'ly compaſſed, than by keeping the blood in 'its due limits; ſo as to hinder it, from be-'ing either too active, or ſupine: theſe be-'ing the cauſes that hinder the concoction 'and deſpumation of the morbific matter *(c)*.'

I THUS

(z) Van Swiet. Com. Boer. §. 587.
(a) Ibid. §. 598. 604. 609. *(b)* Ibid. §. 609.
(c) Baglivi's Pract. of Phyſ. p. 320.

THUS the ingenious BAGLIVI, and in another place, that in acute caſes, the proper evacuations being premiſed; he contented himſelf, with being a ſpectator as it were, watching nature's motions, and then 'you 'cannot imagine what pleaſure I have had, 'after the purſuit of this method, in ſeeing 'the febrile fits, ſucceed by gentle, and 'friendly turns, and run their rounds, in 'the appointed order of nature: in ſeeing 'the feveriſh ebullitions carried on, in a na-'tural order, without the perplexity of fu-'rious ſymptoms, or the unſeaſonable com-'motion of remedies; in ſeeing the regular 'and finiſhed cauſe of the criſis, or depura-'tion of each fit, as well as the general de-'ſpumation at the end of the diſeaſe. But 'on the other hand, when nature was teaſ-'ed, and thwarted with the continual uſe of 'remedies, I always obſerved that every 'thing grew worſe and worſe' (*d*).

THIS excellent author, in another place ſpeaking of the four humours of the GALENISTS, and the doctrine of acid and alkali, ſays, 'the groundleſſneſs of their opinions is 'manifeſt, from daily experience, which 'teaches

(*d*) Baglivi's Pract. of Phyſ. p. 343.

'teaches us, that our conſtitutions may be 'injured by a thouſand things; and that 'every diſeaſe depends upon a præternatu-'ral, and peculiar ſpecification of the hu-'mours.' The juſtneſs of which reaſoning, the ſagacious medical reader will allow; if ſo, can water be the general remedy? again, 'whatever is capable to control that præter-'natural texture, and retrieve that primitive 'ſpring of the humours; whether it is hot, 'or cold; acid, or alkali; or poſſeſſing of 'oppoſite virtues; or adminiſtered outward-'ly, or inwardly; you may ſtill be aſſured, 'it will effectually remove ſuch diſorder. 'Thus we find, that in the way of practice, '*one* and the *ſame* diſeaſe is equally cured 'by *contrary* medicines, and methods; or 'by *hot* remedies as well as *cold*' (*e*).

THE authority of SYDENHAM in waiting nature's motions, is too well known to require quoting paſſages in proof; and whoſe peculiar ſagacity and conduct, gained him an immortal character, amongſt foreigners as well as natives: with what juſtice would appear, was the extinguiſhing theory to prevail in practice: and if it had been true, would not that penetration diſplayed ſo boldly,

(*e*) Bagliv. Pract. Phyſ. p. 315. Van Swiet. §. 558.

ly, and nobly, in the ſmall-pox, have here exerted itſelf? But his ſound and ſtrong ſenſe could tell him,

——— *quid ferre recuſent*
quid valeant humeri. HOR.

AMONGST theſe great names, that of the ingenious and ſagacious Dr. HUXHAM may be placed; whoſe works have been of ſuch general utility to medical practitioners: but to how little purpoſe will a peruſal of thoſe be, if the extinguiſhing theoriſt is right.

IT would not be foreign to the preſent deſign, to add, that the effects of fevers are oftentimes beneficial in removing many diſorders: but not to tire the reader with more quotations, I refer him for proofs drawn from HIPPOCRATES, CELSUS, &c. To a * work, '*at whoſe ſight*' every production preſent, or future, of the Eſſayiſt's, or my pen, will

'*hide their diminiſhed heads*'.
MILTON.

AFTER

* Van Swieten, Comment. on Boerhaave, §. 558.

After perusing the above pages, it will not, I flatter myself, appear to demonstration, that the essay opposed was free from objection; on the contrary, that the principal positions are not strictly true: and *first*, that there is reason to think the doctrine of concoction in fevers, if rightly understood, is not fallacious — *secondly*, that we ought not rashly to drink cold water, in hope of suppressing fevers; and that the ancients were far from recommending it indiscriminately — *thirdly*, and lastly, that the fever may be an œconomical process of nature for relief.

It may perhaps be necessary to apologize for the preceding attempt, the maxim *nec sutor ultra crepidam* presenting itself to my view; yet the attack coming from one, not in the first of the medical distinctions, that consideration may have its weight in excuse; and if a more formidable blow be hereafter aimed from another quarter, I doubt not but it will be properly and finally repelled by one of that body, whom it more immediately concerns, and whose learning can no where find itself excelled.

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IT would be unſound reaſoning, to argue from the inſtances of ſucceſs, which every empirical remedy daily procures vouchers for, up to the univerſality of adminiſtering it; and yet this is too frequently the caſe in the modern diſcoveries of medicine; a few fortunate, or fancied fortunate examples are produced, the ſanguine temper of mankind being ſuch, that novelty too often effects conviction: whether this is applicable or not to the ſuggeſtion and reception of the improvement, &c. let the world determine.

AFTER all it has been doubted, whether the author meant more than the eſtabliſhed antiphlogiſtic practice: indeed many parts of the pamphlet, would juſtify ſuch concluſion. Should this be the truth, he has unluckily, in the *exordium*, as well as in the body

dy of the work, made uſe of expreſſions and arguments ſufficient to lead not only me, but alſo profeſſed judges of literary compoſition *, into a great miſtake. Still if (as I believe) we have not miſunderſtood the meaning of the Eſſay, I hope my time has not altogether been ill employed in the above endeavour to anſwer it.

* See Critical Review, November, 1767.

F I N I S.