AN

ATTEMPT

To eſtabliſh the

ORIGINAL SAMENESS

OF

Three Phenomena of Fever,

(PRINCIPALLY CONFINED TO INFANTS AND CHILDREN),

Deſcribed by Medical Writers under the ſeveral Names of

HYDROCEPHALUS INTERNUS, CYNANCHE TRACHEALIS,

AND

DIARRHEA INFANTUM.

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AN

INAUGURAL DISSERTATION,

FOR THE DEGREE OF

DOCTOR OF MEDICINE;

Examined and approved by

THE MEDICAL FACULTY

OF

The University of Pennsylvania,

AND DULY DEFENDED BEFORE

THE BOARD OF THAT INSTITUTION,

ON THE 17th DAY OF MAY 1796.

TO THE

PRESIDENT AND MEMBERS

OF THE

AMERICAN PHILOSOPHICAL SOCIETY.

GENTLEMEN,

I FLY not to the authority of the American Philoſophical Society as a city of refuge from the ſtrictures of criticiſm; nor do I ſupplicate from the dignity of the Philoſophical character the ſhadow of patronage to the following publication. My open appeal ismade, my reſpectful addreſs is dircted ſolely *to that liberality and candor which never fail to characterize the truly philoſophical mind.*

I have ventured to explore a narrow, *but in my view, an* important *tract of* terra incognita *in pathological ſcience: I have hazarded a free and a public declaration of what I there obſerved. To moſt, if not indeed to all practitioners of medicine, my poſition reſpecting*

ſpecting the original ſameneſs of the three topical diſeaſes embraced in my diſſertation, will be wholly new; to many it will appear improbable, perhaps erroneous. A thorough and diſpaſſionate inveſtigation of this ſubject is what I moſt earneſtly deſire. If my opinions be indeed unfounded, I am open to conviction on rational principles; if they be juſt, I wiſh to ſee them more ably elucidated, more fully confirmed. In neither caſe can my views be anſwered; in neither caſe can the intereſt of ſcience be advanced, ſave by the talents and attention of medical philoſophers *alone—To the magnitude and difficulty of ſuch a taſk,* mere phyſicians *are wholly incompetent.*

To the medical philoſophers, therefore, of the inſtitution I addreſs, is the following inaugural diſſertation more particularly dedicated. To their liberality it is recommended; to their peruſal and conſideration it is freely ſubmitted. They will examine it with candor, and judge of it without the bias of prepoſſeſſion. Their deciſion will be the voice of calm *conviction, not the cry of* impaſſioned *prejudice. They will think, they will "ſpeak of it as it is." Their award will be characterized*

terized by literal juſtice, not by ſeverity undeſerved, not by indulgence unſolicited. They will not condemn from motives of envy, nor will they praiſe from thoſe of ſpecial grace.

Should the principles and opinions contained in the following pages correſpond to the enlightened views of ſuch competent and impartial judges, their approbation will not only afford the higheſt gratification to my feelings, but will doubtleſs tend to my farther confirmation in the truth of thoſe medical tenets I am about to deliver to the world. But ſhould they, on the other hand, be conſidered as either doubtful or wholly unfounded, the ſtrictures and objections of the liberal and learned, ſhall, from me, ever meet with a candid reception.

With ſentiments of eſteem and reſpect the moſt profound, I have the honour to be,

GENTLEMEN,

Your obedient and

Very humble ſervant,

PHILADELPHIA, *May 4th*, 1796 } THE AUTHOR.

Inaugural Diſſertation, &c.

SECTION I.

INTRODUCTION.

THE frequent occurrence, the obſtinate reſiſtance, and the melancholy effects of thoſe *phenomena* of fever to which my preſent ſpeculations are confined, will doubtleſs be admitted as a ſufficient apology for every poſſible attempt to inveſtigate their cauſe, to elucidate their nature, or to obviate with ſucceſs their worſt reſult.

I have called them *phenomena* or *ſymptoms*, becauſe I do not conſider them as primary diſeaſes; I ſhall treat of them as the dependent *effects*, not as the original *cauſe* of that febrile ſtate of the ſyſtem, by which they never fail to be accompanied. Without the previous exiſtence of general fever theſe phenomena can no more occur, than an effect

 can

can, in any inſtance, take place without the pre-exiſtence and pre-action of its cauſe. They ſhall be conſidered then, in the following pages, as the genuine and deſtructive offſpring of *arterial action*, morbid in its *nature*, exceſſive in its *violence*, and by cauſes of peculiar tendency determined to the *encephalon*, the *trachea*, or the *inteſtines*.

I cannot believe, as is alledged by ſome, that theſe phenomena or ſymptoms of general diſeaſe, even when exiſting in the moſt conſummate degree, poſſeſs any conſiderable power as co-operating cauſes tending to augment the febrile affection from which they derived their origin *—They are the immediate reſult of an evacuating proceſs, which never fails to diminiſh the impetuoſity and tumult of fe-

* To the extent of this general obſervation, Cynanche trachealis (that moſt diſtreſſing, and perhaps I might add, moſt fatal of all febrile phenomena) may ſeem indeed to conſtitute a juſt exception. Poſſibly the preternatural membrane, which here occurs, and inveſts, as a lining, the parietes of the trachea, may, by its irritating and painful impreſſion on this exquiſitely ſenſible tube, co-operate with other cauſes in continuing or even augmenting that febrile affection from which it originally derived its exiſtence. Neither obſervation, however, nor yet any practicable effort of ſpeculation has been able to furniſh me with reaſons ſufficient to convince me, that that from this cauſe, ſo partial and circumſcribed, any febrile affection of importance can probably ariſe.

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brile action. This proceſs is, indeed, in the preſent caſe, uniformly attended with more or leſs uneaſineſs and pain; but the ſtimulant effect of the pain occaſioned by the diſtenſion of the arteries and their conſequent effort to diſcharge their irritating contents, is perhaps fully counterbalanced by the powerfully ſedative tendency of the ſimultaneous evacuation.

But although theſe phenomena be indeed the effects and not the cauſes of that febrile affection of the ſyſtem by which they are always accompanied; yet when completely formed, they become real and original cauſes of ſucceeding ſymptoms, more alarming in their appearance, more diſtreſſing in their nature, and more certainly fatal * in their final reſult.

* I would by no means have the reader to ſuppoſe, that I believe hydrocephalus internus, cynanche trachealis, and diarrhea infantum to be diſeaſes literally incurable—It is however a conſideration equally painful to *humanity*, and humiliating to the *profeſſors* of the *healing art*, that when once theſe local affections have become fully eſtabliſhed and firmly rooted in their reſpective organs, they too frequently baffle every poſſible attempt to diſlodge them, and thus free the ſyſtem from that melancholy groupe of ſymptoms to which they give birth and duration. Hence, therefore, we infer the neceſſity of treating the ſyſtem, previouſly to the actual exiſtence of theſe phenomena, in ſuch a way, as may moſt effectually tend to prevent their complete acceſſion.

Of theſe latter ſymptoms a brief detail ſhall be given in ſubſequent pages of this diſſertation.

I have ſaid that thoſe phenomena of fever, to which my preſent ſpeculations immediately relate, are principally confined to *infants* and *children.* I beg leave to ſtate a few obſervations briefly explanatory of the cauſe, why this tender, helpleſs, and innocent portion of the human race, are ſo excluſively * ſubjected to ſuch formidable and deſtructive maladies.

At the expiration of ten lunar months from the period of conception, the tender infant emerges into actual life, with many organs and parts of its body in a very unfiniſhed and imperfect ſtate. This imperfection manifeſts itſelf to a degree peculiarly obvious and ſtriking in the bones of the head and face. Thoſe of the head in particular exhibit nu-

* Exceptions may perhaps be taken to the pointed definitude of the word "excluſively." Many phyſicians of accuracy and eminence allege, that they have actually ſeen adults affected by the diſeaſes now under conſideration, more eſpecially by that of hydrocephalus internus. I admit and believe that ſuch caſes do indeed occur; but they are ſo extremely rare, as to merit no particular attention in an eſſay chiefly confined to general obſervations and principles, and not intended to treat of ſubjects in minute detail.

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merous phenomena of a ſtate extremely immature. They are unfiniſhed with reſpect to texture and firmneſs (poſſeſſing a *cartilaginous* rather than a *bone-like* conſiſtence) and ſo highly defective in point of ſize, that conſiderable interoſſeal vacuities are known to exiſt in this important part of the infantile ſyſtem.—As nature ſeems to delight in a certain degree of perfection in all her works, ſuch is the purport, ſuch the uniform tendency of her eſtabliſhed laws, that theſe deficiencies in the bones of the cranium muſt be gradually ſupplied—Not to mention the changes which are yet to be effected in the *conſiſtence*, the *articulation*, and the *figures* of the upper and lower maxillary bones, theſe are both, in ſubſervience to the fundamental and governing principles of the ſyſtem, to be furniſhed with two ſeveral ſets of teeth. Beſides thoſe already ſpecified, there exiſt, in the head and adjacent parts of the infant, various other deficiencies, in degree leſs obvious, in nature leſs important.

For certain eſſential and wiſe purpoſes in the important economy of man, it is neceſſary that the organization of the head be brought to ultimate perfection at an early period of life. The exiſting deficiencies are therefore ſupplied, and moſt of the requiſite changes in this part of the ſyſtem are uſually effected about the child's arrival at its twelfth year.

During the whole of this intereſting period of human life, as well as for ſeveral years afterwards, the head exhibits a ſize evidently diſproportioned to that of the other parts of the body. To accommodate the diſproportioned ſize of this part of the ſyſtem, and alſo to furniſh matter for ſupplying the deficiencies and effecting the requiſite changes of which I have already ſpoken, there neceſſarily exiſts, during the years of infancy and childhood, a diſproportioned determination of blood to the head and immediately adjacent parts.

That ſuch determination to the head does indeed exiſt, more eſpecially in the infantile ſtate, we may farther infer from the conſtant and profuſe diſcharges of ſaliva and mucus, which, during this ſtate, very generally take place from the eyes, noſe, and mouth ; as alſo from the troubleſome and painful eruptions which ſo frequently appear on the heads of children during the two or three firſt years of life.—Similar diſcharges of mucus not unfrequently occur in adults, when in conſequence of an obſtruction of perſpiration, co-operating with a conſtipation of the bowels, and a diminiſhed ſecretion of urine, an undue proportion of blood is forcibly thrown into the veſſels of the head.

During ſuch a diſproportioned afflux of blood to the head of infants and children, it is obvious that this part of the ſyſtem muſt, from any conſiderable encreaſe of arterial action, be ſubjected to more or leſs danger in conſequence of the augmented impetus of the circulating fluid againſt the very delicate veſſels of the encephalon. When in theſe young and tender ſubjects a violent attack of fever occurs, with dry ſkin, coſtiveneſs, and a parſimonious diſcharge of urine, ſo much is the determination of blood to the head generally augmented, as to ſubject the unhappy patients to the hazard of all the diſaſtrous conſequences of effuſion, either from ruptures, or from an undue and morbid action, of the tender veſſels of the part—Hence we deduce the *leading cauſe* why hydrocephalus internus, which conſiſts of a preternatural effuſion of a ſerous or of an aqueous fluid into the ventricles of the brain, is ſo very generally confined to infants and children.

We may further obſerve, that ſuch ſubjects are much more frequently than adults expoſed to injuries of the head from blows, falls *, and other accidents ariſing out of the nature of their early ſports

* When children fall (an incident which often occurs) the *head*, in conſequence of its diſproportioned ſize and weight, ſeldom fails to become a ſuffering part.

and amuſements. Theſe injuries often operate as exciting cauſes of morbid and exceſſive action in the veſſels of the encephalon, thus expoſing that important viſcus to the riſque of all the dreadful conſequences attendant on inflammation * or effuſion. To the foregoing conſiderations perhaps we may with ſufficient propriety add, that of human ſubjects during the earlier periods of life, being more uniformly confined to a recumbent or horizontal poſition, than is the caſe with thoſe whoſe years are more numerous, and whoſe conſequent acquiſitions of ſtrength are more conſiderable. To phyſicians at all acquainted with the ſtriking effects of gravitation on the circulation of the blood, it is wholly unneceſſary to obſerve, that a recumbent poſition of the body is highly favourable to a forcible propulſion of blood into the tender veſſels of the encephalon. The probable conſequences which, during a general febrile affection, may reſult from ſuch habi-

* It muſt here be obſerved, that infants and children are much leſs ſubject than adults to ſevere attacks of *true topical inflammation* originating from general fever. The cauſe of this ſhould be ſought for in the laxity and extreme irritability of the exhaling veſſels in the former ſubjects, and the conſequent facility with which they give admiſſion to copious topical effuſions. This obſervation will apply to the veſſels, not only of the head, but alſo to thoſe of every other part of the ſyſtem during the earlier years of life.

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tual propulſion, are too obvious to call for a particular ſpecification.

I have thus enumerated ſome of the principal cauſes which ſeem to co-operate moſt powerfully in ſubjecting infants and children, rather than adults, to that melancholy affection of the head denominated *hydrocephalus internus*. I will conclude my introductory ſection by attempting a few obſervations explanatory of the reaſon, why the two remaining diſeaſes, namely, cynanche trachealis and diarrhea infantum, are ſo excluſively confined to ſubjects of the ſame age.

That in *infants* and *children* the general volume of fluids bears a much greater proportion to the aggregate maſs of ſolids than in *adults*, is a truth with which anatomiſts and phyſiologiſts have been long acquainted. That in the former ſubjects the action of the arterial ſyſtem is proportionally more vigorous, and the motion of the blood conſequently more rapid than in the latter, is alſo a poſition that will not be controverted by the medical philoſopher. From theſe two well known circumſtances, taken in conjunction with the great laxity and exquiſite irritability of the minute arterial extremities, much more copious diſcharges take place from exhaling and ſecreting ſurfaces in very early than in more advanced

advanced periods of life. Thus in infants and children we obſerve numerous and plentiful ſtools of a ſoft conſiſtence, often profuſely abounding with the *mucus* of the inteſtines; while at the ſame time frequent diſcharges of a viſcid phlegm by coughing and vomiting give evidence of a copious ſecretion going forward in the eſophagus, the trachea and its ramifications, the bronchiæ.

Nature, as if conſcious of theſe peculiarities in the infantile economy, not unfrequently attempts to avail herſelf of them for the purpoſe of eliminating from the arterial ſyſtem ſuperabundant portions of fluid, which if retained, might by its ſtimulant impreſſion prove injurious to health, perhaps even deſtructive of life itſelf. Thus, for example, when children are attacked by a fever of exceſſive action *, in which caſe a diminution of the volume of

* I beg leave in this place to ſuggeſt the propriety of diſtinguiſhing between genuine *inflammatory fevers*, and ſimple fevers of exceſſive action. It is indeed true, that inflammatory fevers are always fevers of too much action; but of this propoſition the converſe is by no means equally admiſſible. Fevers of too much action do not neceſſarily poſſeſs a nature truly inflammatory. In order to be, with literal propriety, entitled to the denomination of inflammatory, a fever ſhould be always accompanied by a topical affection, where the evaneſcent extremities of the arteries are themſelves brought into

blood

blood becomes neceſſary, an effort of the conſtitution moſt undoubtedly takes place to effect this ſalutary purpoſe by an increaſed diſcharge from ſome

exceſſive action, and where pain is thus generated by overdiſtenſion from fluids in a miſplaced ſituation. In a ſimple fever of exceſſive action, no ſuch local affection, no ſuch ſtriking inequality of arterial exertion appears—In all parts of the ſyſtem the larger arteries act with too much frequency and too much force ; but in no part do the minute ramifications play with ſuch undue violence as to produce either an *error loci*, or a preternatural effuſion of the circulating fluids. That ſuch a ſimple ſtate of fever may, and indeed does, in ſome caſes, unequivocally exiſt, we are induced to believe both from ſpeculative theory and actual obſervation.—

Thus, for example, ſhould a fever conſiſting in exceſſive arterial action occur in a human ſubject where every organ and part of the ſyſtem are in perfect equilibrium with regard to irritability, ſenſibility, power, and action; in ſuch a caſe the production of a topical affection would be wholly impracticable. That ſyſtems of ſuch an exquiſite balance may actually exiſt, is a poſition to the probability of which we can be eaſily induced to give our aſſent ; and that fevers of ſuch ſimplicity do indeed occur, is a truth which I truſt will not be denied by phyſicians of experience and real obſervation. Between fevers truly inflammatory and thoſe ſimply of exceſſive action, a very material difference ſhould be obſerved in point of practice—In the former both general depletion and topical applications are abſolutely eſſential; whereas in the latter general depletion is alone ſufficient.

particular

particular part of the ſyſtem—or, in other words, an undue determination of blood to ſome organ or part of the human body generally occurs. When this determination is directed to the trachea, cynanche trachealis is too often the melancholy reſult—when to the inteſtinal and hepatic ſyſtems, the patient is ſubjected to an attack of diarrhea infantum.

Perhaps the continued irritation produced by the tedious proceſs of teething, may co-operate as an aſſiſtant cauſe in pointing the morbid determination to the trachea of children; while, on the other

With regard to the *three diſeaſes* which conſtitute the object of my preſent diſſertation, they would be all of a truly inflammatory deſcription, were they not forced to aſſume a different character by certain peculiarities in the ſyſtems and conſtitutions of thoſe ſubjects where they generally appear. Thus, what in infants and children becomes hydrocephalus internus, would in adults aſſume the form of genuine *phrenitis*, and run on perhaps to actual ſuppuration; cynanche trachealis would ſhow itſelf in *peripneumony* or *angina inflammatoria*; and diarrhea infantum would be converted into *enteritis*, or into an inflammatory affection of the liver.

Theſe propoſitions will be perfectly intelligible, and will, I am ſure, appear ſufficiently probable and ſatisfactory to thoſe, who have paid due attention to the numerous and diverſified modifications of diſeaſe, reſulting from differences of age, habit, and conſtitution.

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hand, certain ſpecies of food with which theſe tender ſubjects are occaſionally ſupplied, may tend to increaſe the debility and conſequent irritability of the inteſtines, and thus aid in prediſpoſing to an undue determination to that part of the ſyſtem.

Having thus introduced my ſubject by a few preliminary obſervations of a general nature, I will next proceed to deliver, in brief detail, the moſt ſtriking and characteriſtic ſpecialties of the three diſeaſes now under conſideration—I will attempt to give a ſuccinct ſtatement of the moſt uſual precurſors of each diſeaſe, to point out the firſt phenomena that ſhould occaſion ſerious alarm, to trace the future changes that commonly ſucceed, and to ſpecify ſuch ſymptoms as moſt unequivocally announce the approach of death. After having, in three ſeveral ſections, affected in ſome meaſure the accompliſhment of theſe different objects, I will in my next, attempt the eſtabliſhment of a parallel between the three topical diſeaſes, or rather ſymptoms of general diſeaſe, which conſtitute the leading objects of my enquiry: In other words, I will endeavour to ſhew, on the ſolid and rational ground of *facts* and *direct induction*, that the topical affections of hydrocephalus internus, cynanche trachealis, and diarrhea infantum, are in nature very cloſely allied to each other, being indeed nothing elſe than noxious

noxious and exuberant branches from the ſame parent ſtock *. In a ſubſequent and concluding ſection I will lay down a few general rules relative to the cure, or rather prevention of theſe melancholy affections.

SECT. II.

OF HYDROCEPHALUS INTERNUS. †

THIS dreadful phenomenon of fever is, as already obſerved, with a few exceptions, peculiar to infants and children from the early age of ſix months to the tenth or twelfth year of life. Neither ſituation, climate, nor condition in life can afford ſecu-

* If the reader would allow me to indulge my fancy in a compariſon equally ſimple and deſcriptive, I might ſay, that theſe three infantile diſeaſes, taken in conjunction with the fever from which they originally ſpring, reſemble a ſprig of our common *trifolium pratenſe*, where three kindred leaves are protruded from, and ſupported by, one general connecting or common footſtalk.

† Although not immediately connected with the ſubject of my preſent inveſtigation, I am yet unwilling to neglect ſo favourable an opportunity of ſtating a few ſtructural obſerva-

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rity from its remorſeleſs attack. It acknowledges no diſtinctions, either in point of rank, wealth, or merit; but viſits alike the families of the high and

tions on an opinion very generally entertained by practitioners of medicine, relative to a certain phenomenon attendant on *anaſarcous ſwellings*.

It is a circumſtance well known, that, during the hours of repoſe, while the body is ſuffered to reſt in a poſture nearly horizontal, ſuch ſwellings are commonly determined to the face and parts immediately adjacent; whereas throughout the courſe of the day, when the body is preſerved in a poſition more nearly perpendicular, they are removed again from the ſuperior parts of the ſyſtem, and uniformly thrown on the lower extremities, particularly on the ankles and feet. This *metaſtaſis* or *tranſlation* of ſwelling, is, by phyſicians, very generally ſuppoſed to be produced entirely through the medium of the *cellular membrane*.

Between all the different cells of this membrane ſo uniformly diffpread throughout the ſeveral parts of the body, there appear indeed to exiſt communications more or leſs open and direct. By the immediate route of theſe communications the ſerous fluid, giving riſe to anaſarcous ſwellings, is ſuppoſed to paſs from one part of the body to another, without at all re-entering either the abſorbent or ſanguiferous ſyſtem.

Thus, for example, phyſicians alledge, that that particular portion of ſerous fluid, which, in the morning is lodged *in*, and gives diſtenſion *to*, the cellular membrane of the face, the

the low, the rich and the poor, the virtuous and the ignoble. It occurs at every ſeaſon of the year, during the exiſtence of a humid and chilling atmo-

begins its downward courſe as ſoon as the body is placed in an erect poſition; and, that influenced ſolely by the principle of gravitation, it paſſes ſlowly onward from cell to cell, till finally, towards the cloſe of day, it arrives at its journey's end, and takes up a temporary reſidence in the cellular membrane of the lower extremities. Such phyſicians farther alledge, that during the hours of the night, while the body is ſuffered to reſt in a recumbent poſture, this ſame portion of extravaſated ſerum begins again to move in a retrograde direction, and, thus, uniformly governed by the ſame principle of gravitation, continues to purſue its journey towards the head, till it finally arrives at, and takes actual poſſeſſion of, its former ſituation in the cellular membrane of the face and parts adjacent. Thus, is the ſame individual portion of ſerous fluid ſuppoſed to diſtend alternately the *cellular membrane* of the face and feet; and thus, is this *inexplicable web* conſidered as conſtituting a medium of eaſy and ſimple communication between the two extremes of the ſyſtem.

To me it has, indeed, been ever diſagreeable and painful, publicly to avow my diſſent from medical opinions, ſanctioned by the authority of the moſt celebrated patrons of phyſic, and rendered even holy, in the eye of moſt phyſicians, by the circumſtance of their high antiquity. My feelings on this ſubject have been ſtill more ſenſibly affected by the conſideration, that the opinions, to the propriety and truth of which I have been, at any time, obliged to object, were particularly inculcated on my mind by thoſe characters, to whom I ſtand

ſphere; but exhibits itſelf moſt frequently about the cloſe of autumn, throughout the whole of the winter, and more eſpecially during the variable tem-

indebted for the firſt rudiments of my medical knowledge. Though early prepoſſeſſed by ſuch powerful motives as theſe in favour of the *pathological doctrine*, juſt laid down, reſpecting anaſarcous tranſlations, I am, notwithſtanding, obliged to declare, that *ſuch doctrine* is wholly repugnant to the opinion which I now entertain relative to this curious and intereſting point of phyſics. I believe that the metaſtaſis or removal of anaſarcous ſwellings from the face to the feet, and from the feet to the face, is effected, not through the medium of the *cellular*, but wholly through that of the *vaſcular ſyſtem*. That ſuch tranſlation is not—that, in common caſes, ſuch tranſlation cannot, be accompliſhed by means of an extravaſated fluid journeying ſlowly from cell to cell, as already deſcribed, I would attempt to infer from the following ſeries of conſiderations.

I. During the earlier ſtages of anaſarca the cellular membrane, in moſt parts of the body, is as yet in a ſtate conſiderably ſound and healthy. Its tone is as yet unbroken; its cells and their communications are as yet undilated by means of frequent over-diſtenſion. While in ſuch condition, therefore, this intricate and curious membrane can ſcarcely be conceived capable of affording ſo free and eaſy a tranſition to a ſmall quantity of ſerous fluid, as to ſuffer it to paſs, in eight or ten hours, from the one extreme of the body to the other, urged onward only by the power of its *own gravitation*. After the cells and their numerous communications have become greatly dilated and much relaxed by means of morbid and long con-

perature of the vernal months. Children of ſound health, robuſt conſtitutions, full habits, and active minds, are moſt ſubject to be attacked by this ter-

tinued diſtenſion, ſuch a tranſition may be conſidered as an event much more likely to occur.

II. Were it indeed true, that this fluid travels from the head to the feet through the mazy route of the cellular membrane, its progreſs would doubtleſs be marked by the following phenomena—The ſubſidence of the face would be ſucceeded by a gradual but obvious tumefaction of the neck, in conſequence of the fluid having deſcended from the cells of the *former*, into thoſe of the *latter* part of the body. Next would appear ſome degree of diſtenſion in the cellular membrane lying over the thorax; at length the intumeſcence would deſcend to the integuments of the abdomen, and thus might the fluid be traced through every ſtep of its downward progreſs by an obvious diſtenſion exiſting in the place of its immediate lodgement. But to phyſicians, who have paid attention to this ſubject, it is wholly needleſs to declare, that no ſuch phenomena as theſe are ever preſented to our obſervation.

III. Were the cellular membrane the medium of conveyance for the diſtending fluid, from the face to the lower extremities, the following effects would doubtleſs reſult from tying a bandage immediately above the knee with ſuch tightneſs as effectually to compreſs the ſubjacent ſtratum of cellular membrane, without obſtructing at the ſame time the movement of the blood along the deeper ſeated veins—The vicarious ſwelling of the foot and leg below the ligature would

rible

rible diſorder—Thoſe, in particular, of the above deſcription, who are at the ſame time inclined to habitual coſtiveneſs, ſeem deſignated by nature as its

be entirely prevented, while, at the ſame time, an intumeſcence would form above the ligature, extending along the thigh to a diſtance in ſome meaſure proportionate to the previous ſwelling of the face. To ſuch phenomena, however, I am authoriſed to ſay, that ſuch an experiment does not give origin.

IV. Were the cellular membrane the only medium of the ſerous fluid's deſcent, the intumeſcence of the face could not poſſibly ſubſide without giving riſe to a certain degree of intumeſcence in ſome other part of the body. This, however, is by no means the caſe; for by preſerving the trunk of the body erect, and keeping the feet and legs at the ſame time in a horizontal poſition, and moderately compreſſed by means of general and equable bandages, we well know that the ſwelling of the face will often ſubſide throughout the courſe of the day, while no fulneſs or diſtenſion will appear in the cellular membrane of any other part of the body.

V. That it is not the cellular membrane which affords a paſſage for the diſtending fluid from the face to the feet, may be farther inferred from the following conſideration. If the patient ſits throughout the day with his knees bent in ſuch a way as to be elevated above his nates nearly the whole length of his thighs, at the ſame time that his feet and legs are ſuffered to reſt in a poſition nearly perpendicular, theſe latter parts will be diſtended *almoſt*, if not *wholly* as much as if they had been kept in a right lined direction with the thighs, and

readieſt and peculiar prey. Children whoſe heads are unuſually large appear alſo to inherit the melancholy *birth-right* of a ſtrong prediſpoſition to hy-

had both been ſuffered to remain in an inclined poſition. Here it cannot poſſibly be ſuppoſed that the diſtending fluid has ſlowly forced its way through the whole length of the cellular membrane, urged on by the principle of gravitation alone: becauſe in a certain, and even a conſiderable part of its journey, namely, in paſſing from the *nates*, or from the *groins* to the knees, it would be neceſſarily obliged to move in an upward direction—a direction very different indeed from that in any caſe effected by the operation of the gravitating principle. As, therefore, no cauſe can poſſibly produce an effect in direct oppoſition to its own immediate principle of action, the power of gravitation cannot be ſuppoſed to give riſe to ſuch a phenomenon, as the aſcent of a portion of extravaſated ſerous fluid along the cellular membrane of the thigh.

VI. Having thus eſtabliſhed in ſome meaſure, at leaſt, the improbability of an extravaſated fluid paſſing by the principle of gravity from the face to the lower extremities, through the medium of the cellular membrane, while the body is in a poſition more or leſs erect; let us now for a moment attend to the reverſe of this pathological propoſition. Let us examine what teſtimony exiſts in favour of a belief, that during the hours of night, while the body is laid in a poſture more nearly horizontal, a fluid can paſs, through the medium of the cellular membrane, from the feet and legs to the face and parts immediately adjacent? Here we ſhall find that this fluid, in its paſſage from the feet to the head, muſt neceſſarily meet with

drocephalus

drocephalus internus. Such as are ſubject to troubleſome eruptions of the head are extremely liable to be attacked by this diſeaſe if ſuch eruptions too ſuddenly diſappear.

difficulties greater—much greater, indeed, than thoſe already pointed out as obſtructing its paſſage in a contrary direction. The principle of gravitation is confeſſedly the only power, by the operation of which this extravaſated fluid is ſuppoſed by phyſicians to move, while the body is ſuffered to remain in a ſtate of entire reſt. But the influence of this principle is certainly in full oppoſition to the motion of any fluid from the feet towards the head, while the body is reclined in a bed of the common form and direction. I need not here obſerve
910
that a bed is always made in ſuch a manner, as to have that end denominated its head ſomewhat elevated above its foot; conſequently ſuch muſt be the poſture and direction of the body it contains; the feet muſt neceſſarily be depreſſed below the head. How then can we conceive it poſſible, that in a body laid in this inclined poſition, a quantity of extravaſated fluid can, by the principle of gravitation be carried upward from the lower extremities, and finally lodged in the cellular membrane of the face?—Before ſuch a reſult can poſſibly, in ſuch a ſituation, take place, one of the *eſſential properties* of matter, together with all its dependent phenomena, muſt be either annihilated or completely reverſed.

Were I now aſked, in what manner this reciprocal alternation of ſwelling between the feet and the face is effected? I would anſwer, that it is accompliſhed entirely, not through the medium of the cellular membrane, but through that of the ſanguiferous and lymphatic ſyſtems;—not by the agency of

This diſeaſe is, not unfrequently, excited by an early and imprudent uſe of opiates in attacks of diarrhea accompanied with fever, and alſo by the

the principle of gravitation, but by the common laws of *circulation*, *exhalation*, and *abſorption*.

Thus, for example, during the erect poſition of the body throughout the courſe of the day, the quantity of fluid exhaled or effuſed, from the evaneſcent arterial extremities, into the cellular membrane of the face of an anaſarcous patient, is conſiderably leſs than that abſorbed from the ſame part, by the incipient radicles of the lymphatic ſyſtem. In conſequence therefore of this diſproportion between effuſion and abſorption, the whole of the diſtending fluid will be at length removed, firſt into the *abſorbent*, and thence into the *ſanguiferous* ſyſtem, and an entire ſubſidence of the face will be thus effected. On the other hand, the feet and legs are, during this time, in a depending poſition. From this circumſtance an undue accumulation of blood occurs in the lower extremities, and in this part of the ſyſtem throws the balance between effuſion and abſorption into the oppoſite ſcale, giving thus a decided preponderance to the former proceſs. Of this ſuperabundant effuſion, a morbid diſtenſion of the cellular membrane of the ankles and feet, is the neceſſary conſequence. When the body is again laid in a recumbent poſture, this accumulation of blood in the lower extremities is removed, and the proceſs of *abſorption* gains once more, in this part of the ſyſtem, an aſcendency over that of *effuſion*. The diſtending fluid is therefore again removed from the cellular membrane of the lower extremities, and conveyed through the abſorbent into the ſanguiferous ſyſtem.

operation

operation of all ſuch cauſes as check or diminiſh the cutaneous diſcharge. In the former of theſe caſes, that portion of ſtimulating fluid which would have been eliminated by the bowels, in the latter that deſtined to be evacuated by the ſkin, are determined to the encephalon with ſo much violence of febrile action, as to give origin to *congeſtion in*, and ſubſequent *effuſion from*, the tender and irritable veſſels of that important viſcus.

* Hydrocephalus internus is generally uſhered in by the following gloomy train of precurſors. The

But while the evil is ſlowly declining in one, it is gradually increaſing in another part of the debilitated body; for a recumbent poſition is highly favourable to a forcible protruſion of blood into the veſſels of the head and face. In conſequence of ſuch protruſion, and its concomitant accumulation, the *effuſive* becomes immediately ſuperior to the *abſorbing* proceſs in this part of the ſyſtem, and thus again an undue and morbid diſtenſion of the cellular membrane of the face is generated.

On ſuch ſimple and well known principles as theſe, would I attempt to account for the alternation of anaſarcous ſwellings, between the face and lower extremities.

* If I have been leſs circumſtantially minute in my deſcription of hydrocephalus internus than Doctors Fothergill, Quin, and Ruſh, the reader will readily excuſe me for this deficiency, when poſſeſſed of the motives by which I am wholly governed. My view is to give, unmixed, the genuine reſult

child becomes uncommonly dull and loſes all reliſh for playful amuſements. Its movements are languid, its gait ſlow, and its whole deportment more than uſually grave.—To the native vivacity and luſtre of its eyes, a dull lifeleſs appearance, accompanied by ſomewhat of a drowſy heavineſs, ſucceeds, and its whole countenance beſpeaks a degree of uneaſineſs and diſtreſs. Its diſpoſition to cheerfulneſs and good humour forſakes it, and it becomes peeviſh, fretful, and ſometimes ſullen: even at this early period of indiſpoſition the undue determination of blood to the head is often unequivocally pointed out, by ſmall but repeated hemorrhages from the noſtrils; the temporal arteries are alſo more than uſually turgid; the eyes are watry and ſometimes ſlightly pencilled with blood.

of my own experience, obſervation, and reflection. I rely as my authority on no one *dead*—I apply for my information to no one *living*—On the credit of my own obſervation I deliver my facts, on the anthority of my own ſpeculations I riſque my opinions. As the experience of the authors referred to, muſt have been much more extenſive than mine, this diſeaſe has doubtleſs preſented itſelf to their obſervation characterized by a proportionally greater diverſity and irregularity of ſymptoms. What I have myſelf ſeen, that have I given in brief detail; what I have only read or heard (though impreſſed with an entire belief of the truth of each particular) I have not thought proper to embrace in my diſſertation.

The

The appetite begins to fail, frequent but tranſient fits of nauſea appear, and extreme *coſtiveneſs* takes place; or, if before habitual, becomes now much more obſtinate and troubleſome; broken and uneaſy ſleep, exceſſive and morbid wakefulneſs, but ſometimes a propenſity to ſleep of a profound and comatoſe nature, exhibit themſelves among the precurſors of hydrocephalus internus. During the earlier ſtages of theſe ſeveral ſymptoms the patient ſeldom or never complains, nor even acknowledges the exiſtence of actual indiſpoſition. When interrogated reſpecting his health he either makes no reply at all, or anſwers in a careleſs and evaſive manner.

At length, however, this inſidious diſeaſe throws aſide its maſk, aſſumes a more open and daring deportment, and ventures to appear in all its native horrors. The ſyſtem is invaded by a groupe of ſymptoms equally diſtreſſing in their nature, alarming in their appearance, and dangerous in their effects. The patient is arreſted by a general and violent fever; the head becomes a ſeat of excruciating pain, and great proſtration of all the voluntary powers ſucceeds. The pain of the head is ſometimes uniformly permanent; but is more generally marked by temporary intermiſſions alternating again with returns the moſt acute and diſtreſſing. So great is the accumulation of ſenſibility in certain parts

parts of the ſyſtem, at this ſtage of the diſeaſe, that the impreſſions of light, ſound, and motion prove often inſupportable. In a caſe of hydrocephalus internus lately under my direction, ſo exquiſite was the ſenſibility of the optic nerves as to demand a total excluſion of light; ſo painfully ſenſible were the organs of hearing as to oblige me, when in the ſick-room, to ſpeak in the ſofteſt whiſper; and ſo diſtreſſingly acute was the affection of the head, as to extort from the patient reiterated ſcreams of agony, and to prohibit me from walking the floor of the chamber otherwiſe than with the moſt ſlow and cautious ſtep. This ſtage of the diſeaſe, eſpecially in children of riper years, is oftentimes accompanied with ſymptoms of high and fierce delirium, ſuch as wild, ferocious looks, quick, deſultory, incoherent talking, occaſional ſinging, or ſudden paroxyſms of terror *unexcited*, or of anger *unprovoked*, by any exiſting cauſe. During the whole of this diſtreſſing and dangerous period, the conſtipation of the bowels remains obſtinate, and the ſtomach is ſtrongly diſpoſed to reject, immediately, every thing, whether liquid or ſolid, that is taken in by the mouth.

After the fever has continued, with ſlight morning remiſſions and ſtrong evening exacerbations, from one to three or ſometimes five days, a peculiar and ſtriking affection of the eyes becomes obſervable.

ble *. The pupils, which were before contracted to a diameter unuſually narrow, ſuffer a dilatation much greater than ordinary: their ſenſibility to light (already ſaid to have been, in an earlier ſtage of the diſeaſe, preternaturally acute) begins now to ſuffer a ſlow, but progreſſive diminution, ſo as to ſink, at

* I am indeed ſorry at being obliged to deny my aſſent to the accuracy of that part of the treatiſe on hydrocephalus internus publiſhed by the learned and ingenious Dr. Quin, where the author points to the particular ſtage of diſeaſe in which he alledges the ſtrabiſmus aud dilatation of the pupils occur. The doctor evidently claſſes theſe affections of the eyes among the firſt groupe of ſymptoms that appear, thus making them nothing elſe than ſimple precurſors or harbingers of actual diſeaſe. On this ſubject I muſt confeſs that my obſervations have furniſhed me with a very different reſult. If my memory be not extremely fallacious, and if I have not been unpardonably inaccurate and erroneous in notes which I have, at different times, taken down in ſick-rooms to which I have been called, ſtrabiſmus and dilatation of the pupils are affections of the eyes which ſeldom, if ever, take place till after the exiſtence of very conſiderable fever: I would therefore claſs them among the *ſecond*, perhaps I may ſay among the *third* groupe of ſymptoms characteriſtic of *hydrocephalus internus*. Theſe are phenomena which do not barely portend an *approaching*, but ſtrongly beſpeak a high degree of actually *exiſting*, diſeaſe. They ought not to be viewed as the precurſors, but as the melancholy conſequences of fever; being the immediate reſult of *effuſion* or *congeſtion* in the volume of the encephalon, produced by the impulſive violence of febrile action.

length,

length, far below its common and healthy ſtate; while, at the ſame time, there ſupervenes a continued rolling of theſe globes in their orbits, together with a ſtrabiſmus or permanent perverſion of the direction of their axes. Theſe affections are ſometimes confined to *one*, but more generally extend to *both* of the viſual organs.

In proportion to the advancement of this laſt groupe of ſymptoms, the *pulſe* itſelf has been undergoing a gradual but very perceptible change. From having been conſiderably full, ſtrong, tenſe and frequent, it has now become rather weak, ſoft, ſlow, and generally irregular, oftentimes intermittent. The intenſity of the pain in the head ceaſes, and the leſs acute ſenſations of fulneſs and heavineſs ſucceed; the diſpoſition to vomit diſappears; a conſtant tendency to coma takes place, while the patient when rouſed from his death-like ſlumbers ſwallows down drink, and often devours food, if offered, with an appetite of the utmoſt voracity: The eyes begin at length to ſuffer a very viſible protruſion *from*, or rather an elevation *in*, their orbits; and in the heads of infants a tumor more or leſs prominent is formed at the ſcite of the fontanel. Theſe two latter ſymptoms evidently reſult from the mechanical effect of a quantity of fluid effuſed and lodged in the ventricles of the brain.

This

This latter groupe of ſymptoms continues to increaſe in degree, while the ſtrength of the patient hourly fails. As the pulſe declines in *force*, it riſes in *frequency* of action, till it may be ſaid at length to flutter rather than pulſate. The growing inſenſibility of the ſyſtem to impreſſions of every kind becomes gradually more and more confirmed; frightful diſtortions of countenance ſupervene; ſudden twitchings or involuntary contractions of the muſcles become frequent, and general convulſions at length coming on, put a period at once to wretchedneſs and to life.

SECT. III.

OF CYNANCHE TRACHEALIS.

THIS *topical* diſeaſe is uniformly accompanied by general fever in a higher or lower degree. When completely formed, it conſiſts of a preternatural membrane * conſiderably tenacious and firm,

* Some writers ſpeak of a ſtridulous ſuffocation originating from a ſimple ſpaſm of the muſcles of the larynx, or from a ſpaſmodic affection of the trachea itſelf. As ſuch a diſeaſe, however, has never fallen under my obſervation, and eſpecially

inveſting

inveſting the whole or part of the trachea, together, frequently, with part of its bronchial ramifications. This membrane may be ſaid with propriety to poſſeſs a nature *ſui generis*. It is different from common mucus; different from coagulable lymph; and different, indeed, in ſome meaſure, from all animal ſubſtances which I have ſeen ſubjected to the teſt of experiment.

Cynanche trachealis is principally confined to infants and children of a deſcription ſimilar to that already given of thoſe particularly ſubjected to attacks of hydrocephalus internus. Like the latter diſeaſe it occurs at all ſeaſons of the year, but appears moſt frequently about the cloſe of autumn, throughout the months of winter, and during the variable temperature of the ſpring. No climate nor ſituation is wholly exempt from the ravages of this diſtreſſing and dangerous malady; but it appears to be, in ſome meaſure, *endemic* in places uniformly ſubjected to a moiſt and chilling atmoſphere. Hence its frequency in the immediate vicinity of lakes, rivers, marſhes, arms of the ſea, and other extenſive bodies of water.

as its very exiſtence is with me a poſition ſomewhat problematical, it will engage no part of my attention throughout the preſent diſſertation.

The

The preternatural membrane which conſtitutes this truly formidable diſeaſe, I conſider as a product of febrile action, particularly determined to the *aſpera arteria*. Whether this membrane be produced by the immediate action of the mucus follicles of the part, or by minute arterial extremities which, during health, exhale a more attenuated fluid, is a controverſial point on which I do not mean to hazard an opinion.

This diſeaſe makes ſometimes a very ſudden and violent attack, but for the moſt part invades the ſyſtem in a ſlow, gradual, and inſidious manner. Its earlieſt precurſors are nearly the ſame with thoſe of hydrocephalus internus. They are ſuch as unequivocally beſpeak a general febrile affection of the ſyſtem. The topical affection of the trachea is by no means among the earlieſt ſymptoms that appear. In all thoſe caſes where I have had an opportunity of making minute and accurate obſervations, ſlight ſymptoms of febrile indiſpoſition exiſted at leaſt for ſeveral hours, in moſt of them ſeveral days, before the peculiar hoarſeneſs became at all perceptible. The reaſon why this affection of the trachea has been ſo generally conſidered as the earlieſt ſymptom, and therefore the original cauſe of all the ſubſequent train of evils, muſt doubtleſs be ſought for in the inattention and inaccuracy of parents, nurſes,

and

and phyſicians, relative to the ſlighter phenomena of diſeaſe. In the preſent, as in moſt other inſtances of general fever, coſtiveneſs ſeldom fails to appear among the earlier precurſors.

Theſe moderate ſymptoms of general fever having continued for a *period* of time, ſubject, in different caſes, to great variety with reſpect to its duration, a cough and hoarſeneſs, accompanied by more or leſs difficulty of reſpiration, at length occur, which may be conſidered as the ſure harbingers of approaching danger *. The cough attending cynanche

* A few caſes of this diſeaſe I have ſeen accompanied by a temporary efflorescence or ſcarlet-like eruption on different parts of the body, which, during its continuance, ſeemed to afford a certain degree of alleviation to the ſymptoms of general fever.

I would here beg leave to obſerve, that the principles and laws of the *tranſlation* of *real febrile action* from one part, or perhaps I may ſay, from one ſyſtem of the body to another, would indeed form a ſubject of inveſtigation equally curious, intereſting, and important. Thus, for example, in ſmall-pox and meaſles the cuticular eruption is nothing elſe than a genuine tranſlation of fever from the arterial ſyſtem to the ſkin; that is, from a deeper ſeated to a more ſuperficial part; hence the evident abatement of the ſymptoms of general fever on the complete occurrence of a general eruption. Thus again the cutaneous eruption in what is called the *raſh fever* appears

trachealis is accompanied by a very ſhrill and peculiar ſound, which has been ſaid by different authors to reſemble the voices of ſeveral different animals. For my own part I do not think I have in any inſtance heard this morbid ſound more nearly imitated, than by a harſh, diſagreeable note, ſometimes emitted by our common fowls in attempting to diſcharge from their throats a grain of corn, or ſome other obſtructing body of conſiderable magnitude.

Soon after the ſymptoms of cough and hoarſeneſs have become evident, the diſeaſe begins to aſſume a much more alarming and formidable appearance. The phenomena of general fever remain no longer latent or equivocal even to the moſt ſuperficial obſerver, but openly aſſail the proſtrated ſyſtem with

to be nothing more than a tranſlation of febrile action principally from the ſtomach to the ſkin; hence the obvious relief given to the former by the appearance of an eruption in the latter part of the ſyſtem; and hence the re-attack made on the ſtomach if, in conſequence of imprudent expoſure to cold or moiſture, the cuticular eruption prematurely diſappear. Thus, in like manner, in the eryſipelas of the face, the roſe-like efflorescence is doubtleſs an unequivocal tranſlation of fever from the veſſels of the brain to thoſe of the ſkin; hence the comatoſe ſymptoms, that ſeldom fail to characterize the earlier ſtages of this diſeaſe, are ſo uniformly relieved on the appearance of the efflorescence and ſwelling; and hence the re-attack ſo frequently made on the veſſels of the brain when the cuticular affection too ſuddenly retires.

high degrees of violence. Reſpiration becomes uniformly and permanently more difficult and laborious; but this difficulty is ſo much increaſed by occaſional paroxyſms, that the patient is in the utmoſt danger of death from actual ſuffocation.

At this period of the diſeaſe the countenance is ſometimes pale, marked by frequent but tranſient fluſhings, and ſometimes full and rather livid, in conſequence of a partial ſtagnation of the blood. I have frequently ſeen the patient diſpoſed to a comatoſe ſtate, had not ſuch quietude been prevented by the perpetual irritation of the membrane in the trachea, and by the neceſſary and increaſing violence of reſpiratory efforts. In conſequence of the uniform reiteration of ſuch efforts, together perhaps with the ſmall quantity of air taken into the lungs at each act of inſpiration, the excitability of the ſyſtem is gradually diminiſhed, the voluntary powers are greatly exhauſted, and every ſymptom of danger and diſtreſs is evidently augmented: the buſineſs of reſpiration grows more and more difficult and laborious; exertions of coughing are too arduous to be any longer effected; the pulſe becomes weak, oppreſſed, and trembling; the eyes are ſuffuſed by a glairy pellicle; the ſyſtem is invaded by occaſional convulſions, till, finally, after a painful ſtruggle of actual ſtrangulation the miſerable patient expires.

SECT.

SECT. IV.

OF DIARRHEA INFANTUM.

THIS diſeaſe, called by ſome writers Cholera infantum, is, as the name itſelf imports, principally confined to infants and children of an early age. From the termination of the firſt ſix months of life, to the cloſe of the third year, children are moſt ſubject to be attacked by this painful and dangerous diſorder. After the expiration of the fourth year its occurrence is by no means frequent. In children, however, of a weak conſtitution, and of a lax and irritable habit of body, this diſeaſe ſometimes appears as late as the ninth or tenth year of life. In inſtances of the latter deſcription its ſymptoms are leſs diſtreſſing, and its conſequences much leſs dangerous, than when it attacks ſubjects of an earlier age. It never fails to prove troubleſome, and is too often attended with abſolute danger, when it aſſails children during the tedious and painful proceſs of dentition.

Happily for the weak and tender part of the human race, diarrhea infantum is much more under the influence and controul of temporary and local circumſtances, than either of the diſeaſes juſt dedeſcribed. It is more limited as to the *ſeaſon*, it is

more peculiarly reſtricted as to the *place* of its general occurrence. It prevails only during the ſummer and the earlier part of the autumnal ſeaſon; and ſeldom appears ſave in the foul and heated atmoſphere of a crouded city. The pure and breezy air of country ſituations, remote from marſhes or other large bodies of ſtagnant water, ſo far from giving origin to this melancholy diſeaſe, affords the moſt efficacious remedy to ſuch children as have already become the unhappy ſubjects of its violence.

Diarrhea infantum may be therefore conſidered as a genuine endemic of large and populous cities. Moſt infants and children of the age already mentioned, who paſs the whole of the ſummer months in the city of Philadelphia, are ſubjected to more or leſs inconvenience and pain from the unwelcome viſits of this troubleſome diſorder. During the months of July, Auguſt, and September it uſurps the empire over all other infantile diſeaſes, and reigns for the moſt part without a contending rival.

Diarrhea infantum may be defined, a diſeaſe conſiſting of frequent and copious diſcharges by ſtool, of a muco-bilious matter *, ſometimes coloured by

* The ſtools of children affected by the diſeaſe now under conſideration, poſſeſs, for the moſt part, more or leſs of a green-

admixtures

admixtures of blood, and always accompanied by a fever of exceſſive action. As in the diſeaſes of hydrocephalus internus and cynanche trachealis, ſo here, likewiſe, I conſider fever as the primary affection, and the bilious diarrhea as nothing elſe than a neceſſary reſult of febrile action unduly determined to the liver and inteſtinal canal.

Infants and children of every deſcription of conſtitution and habit of body, are liable to be arreſted by this troubleſome and painful diſorder. According, however, to the reſult of my obſervations on this ſubject, ſuch as are conſiderably robuſt and fleſhy are in more immediate danger of ſuffering from this ſcourge of early life. Such children as we would judge moſt ſtrongly diſpoſed to hydrocephalus internus or cynanche trachealis, during the winter and vernal months, are moſt frequently at-

iſh tinge. This colour reſults, moſt probably, from a reciprocal action of acid and bile on each other. For beſides the evident propenſity of the hepatic ſyſtem to generate, in this diſeaſe, a preternatural quantity of bile, we have evidence ſufficient to induce us to believe, that the ſtomach is alſo ſtrongly diſpoſed to ſecrete, by its morbid action, a ſuperabundant quantity of an animal acid. Of theſe two fluids a conflux and intimate mixture take place in the courſe of the ſmall inteſtines, where by their joint chemical action on each other they beſtow on the contents of theſe viſcera the above greeniſh caſt.

tacked by diarrhea infantum in the courſe of the ſummer, or about the commencement of the autumnal ſeaſon.

The precurſors or earlieſt ſymptoms of diarrhea infantum are very nearly the ſame with thoſe that uſher in the two diſeaſes already deſcribed in the preceding ſections. They are ſuch as unequivocally announce the exiſtence of fever. The child grows heavy, dull, inactive, and peeviſh; loſes its keen reliſh for all the frolic amuſements of its age, or becomes very ſoon fatigued and diſguſted in their buſy purſuit: fretfulneſs, loſs of appetite, and occaſional fits of naufea ſucceed. A diarrhea comes on, moderate indeed at firſt, but accompanied with gripings more or leſs ſevere, and with a conſiderable diſcharge of flatus from the inteſtines. The ſkin is for the moſt part rather parched and dry, except during temporary fits of naufea or perhaps of vomiting, when a plentiful moiſture appears on the face, and ſometimes on other parts of the body. Children of three or four years old complain frequently of pain in the head and back, or of troubleſome ſhooting ſtitches in various other parts of the ſyſtem.

All the febrile ſymptoms are *gradually*, ſometimes more *rapidly*, augmented in violence. Thirſt more

or

or leſs troubleſome and diſtreſſing ſupervenes; the pulſe becomes frequent, quick, and ſometimes conſiderably full, tenſe, and hard. The diarrhea grows more profuſe, the gripings more ſevere, and the ſtools are occaſionally tinged with ſlight effuſions of blood. This diſeaſe, like moſt other complaints of the ſummer and autumnal ſeaſons, is marked with evident morning remiſſions and very conſiderable evening exacerbations. During the earlier hours of the night repoſe is much interrupted, ſometimes entirely prevented, by the frequency of the calls to inteſtinal evacuations, together with the pain by which they ſeldom fail to be accompanied.

For a period of time extremely different in different caſes, and which cannot therefore be ſpecified with any degree of definitude, theſe ſymptoms continue to purſue their courſe, ſuffering little or no variations ſave ſuch as reſult from the increaſing debility of the patient. By degrees, however, a very ſtriking change is at length effected; every ſymptom of danger grows more and more alarming; the child becomes much emaciated and extremely reduced in point of ſtrength; the ſtools grow more frequent, watry, and offenſive; ſometimes an abundance of ſmall worms are diſcharged; at other times the aliments taken in are evacuated without much viſible alteration.

About this period of the diſeaſe ſuperficial ulcerations of the lips, mouth, fauces, and about the termination of the inteſtinum rectum appear, and are probably continued throughout the whole tract of the alimentary canal; the eyes retire deep within their orbits; and the general ſhriveling and contraction of the countenance exhibit, for the moſt part, a very high degree of what is denominated *facies hippocratica*. As the bones themſelves give now to the face its general configuration and appearance, unmodified by muſcle or adipoſe ſubſtance, it is at this period of the diſeaſe that children are often ſaid with propriety and truth to reſemble ſome of their ancient relations.

Strength, both muſcular and arterial, being greatly expended, locomotion is no longer practicable, and the action of the arteries is little more than barely perceptible; the whole volume of fluids being almoſt exhauſted, the plenitude of inteſtinal evacuation can be no longer continued. The ſtools are therefore much leſs frequent and copious than before. I have ſeen children in this complaint but little troubled with diarrhea for ſeveral weeks immediately previous to their death. General debility, however, ſtill continues to make gradual encroachments; and ſo extremely imperceptible are its advances, that the patient is often ſurrendered into the arms of death without the fainteſt ſtruggle of reſiſtance.

Thus

Thus inſidious, in moſt caſes, is the original attack; thus ſlow the ſubſequent progreſs; and thus gradual the final termination of diarrhea infantum. It is neceſſary, however, to obſerve, that its phenomena and movements do not at all times exactly correſpond to the preceding deſcription. It ſometimes aſſumes a more daring appearance, and runs its courſe with ſwifter ſteps. After having, for a few hours, or perhaps not more than a few minutes, exhibited itſelf in the form of general fever, conſiderably violent in degree, it aſſumes on a ſudden the more alarming appearance of *genuine cholera*. The natural contents of the ſtomach and inteſtines are firſt evacuated; after which profuſe diſcharges of bile, mucus, and perhaps acid, occur both by ſtool and vomit. Sickneſs the moſt diſtreſſing and deadly prevails; an entire proſtration of ſtrength ſupervenes; general convulſions often enſue; and, unleſs ſupported by the moſt ſpeedy and effectual aid, the patient ſoon falls a victim to the impetuoſity of the diſeaſe.

SECT. V.

OF THE ORIGINAL SAMENESS* OF HYDROCEPHALUS INTERNUS, CYNANCHE TRACHEALIS, AND DIARRHŒA INFANTUM.

ON this part of my ſubject, in particular, I wiſh to be clear, explicit, intelligible. I would not have my opinions on this important point of *pathological doctrine* in any degree miſrepreſented, in any degree miſunderſtood. The reader will therefore indulge me in an attempt to develope my preciſe meaning with all poſſible clearneſs and definitude, previouſly to bringing forward any thing in illuſtration and ſupport of my opinions.

I do not contend that the local affections of hydrocephalus internus, cynanche trachealis, and diarrhea infantum are, when completely eſtabliſhed in

* To ſimplify the theory, and conſequently the treatment, of diſeaſes; to direct the attention of phyſicians to general principles, not to topical phenomena; and thus induce them to preſcribe to *original cauſes* rather than to *ſubſequent ſymptoms*, are doubtleſs very important deſiderata in the ſcience and practice of medicine. An earneſt wiſh to aid in the accompliſhment of ends ſo favourable to ſcience, ſo intereſting to humanity, conſtituted indeed my principal motive for engaging in the preſent inveſtigation. How far I may be ſucceſsful in my attempt, can be aſcertained only from the reception with their

their reſpective organs, the ſame individual complaint. I well know that an aqueous or a ſerous effuſion into the ventricles of the brain, is widely different from a mucoid effuſion into the aſpera arteria, and that a muco-bilious effuſion from the liver and inteſtinal canal is a morbid phenomenon different from both. I only contend that theſe topical affections are nothing elſe than kindred *phenomena* or *effects* reſulting from the operation of the ſame general cauſe. Theſe three local diſeaſes I conſider as a truly fraternal offspring deſcended from *fever* as their common parent. This febrile action, when determined with diſproportioned impetuoſity to the veſſels of the encephalon, begets hydrocephalus internus; when to thoſe of the trachea, cynanche trachealis; and when to thoſe of the inteſtinal and hepatic ſyſtems, diarrhea infantum. I will farther add, that when this ſame febrile impetuoſity attacks the pleura or membrane lining the thorax and lungs, a peripneumonic affection is the painful but neceſſary reſult. For I conſider the general affection from whence originate the three infantile complaints in immediate contemplation, as a *fever* of *exceſſive action*. This, when determined to any part with force ſufficient to produce a topical inflammation,

which my opinions will meet, among the profeſſors and practitioners of the healing art.

becomes

becomes a genuine *inflammatory fever* *. Thus, for example, if inflammation be excited in the volume of the encephalon, the diſeaſe is denominated *phrenitis;* if in the liver, *hepatitis;* and *rheumatiſm* when the inflammatory affection is thrown on the joints.

For the ſake of more entire perſpicuity, I ſhall here take the liberty of condenſing into the *brevity*, and modelling into the *form*, of an aphoriſm, the general poſition which I would wiſh to eſtabliſh relative to the preſent point of pathology.

The three topical complaints of hydrocephalus internus, cynanche trachealis, and diarrhea infantum, may be conſidered as equally the reſult of a general

* I have already ſuggeſted my opinion of the propriety of diſtinguiſhing between a ſimple fever of exceſſive action, and that more complex ſtate of diſeaſe, with juſtice entitled to the denomination of a truly *inflammatory fever*. At preſent I would beg leave further to obſerve, that fevers of exceſſive action may in many reſpects deviate from their ſimpleſt form, without juſtly acquiring the name of *inflammatory*. Thus, for example, a fever of too much action may be accompanied with an undue determination to, and a conſiderable pain in, the *head*, while at the ſame time no inflammatory affection exiſts either in that or in any other part of the ſyſtem. A ſimilar obſervation may be made relative to the three infantile diſeaſes of which I at preſent treat. In neither of theſe can the original fever be ſaid to aſſume and preſerve the ſimpleſt form; and

febrile

febrile affection; and the ſame preciſe ſpecies of fever, namely, a fever of exceſſive action, appears to give origin to the whole. The truth of this intereſting and important point of pathological doctrine, I would endeavour to eſtabliſh by the following ſeries of propoſitions.

I. That the diſeaſes in queſtion are indeed originally of a *general*, and not of a *local* nature, we would preſume to infer from two conſiderations the moſt obvious and direct; namely, that the cauſes, from which they originate, are *general*, and moſt probably therefore productive of a *general*, not a *partial* reſult: and that theſe cauſes operate always on the living ſyſtem *at large*, not *excluſively* on any *particular part*. Reaſoning *a priori*, therefore, we muſt neceſſarily infer, that the ſyſtem at large is originally affected.

II. In all caſes of theſe complaints that have ever fallen under my obſervation, the topical affections were preceded by the exiſtence of *general fever*, with as much uniformity as an effect can, in any inſtance, be preceded by its immediate cauſe. This febrile affection was evidenced by ſymptoms ſo direct

yet in very few caſes do we diſcover the exiſtence of actual inflammation.

and

and unequivocal as, with every unprejudiced mind, to eſtabliſh the truth of its pre-exiſtence beyond the fainteſt ſhadow of a doubt. In no caſe to which I have ever attended did either of the local effuſions firſt occur, giving birth to general fever of a ſubſequent date. Nor indeed do theſe effuſions ſtrike me as cauſes either adapted in their *nature*, or perhaps I may ſay, adequate in their *magnitude*, to give origin to the degrees of fever by which they are generally accompanied. As, therefore, *general fever* is an uniform concomitant in each of theſe three complaints—as it never fails to *precede* the exiſtence of topical effuſion—as its violence is always more or leſs reduced by the occurrence of ſuch effuſion—but more eſpecially, as a timely and complete reduction of fever will (as ſhall be ſhown hereafter) effectually prevent effuſion from taking place, we are certainly authoriſed by the moſt chaſte and correct principles of analogy to conclude, that in ſuch caſes fever is indeed the original cauſe, and effuſion nothing more than the ſubſequent effect.

III. The *ſameneſs* of the febrile affection from which hydrocephalus internus, cynanche trachealis, and diarrhea infantum derive their exiſtence, we would infer from the following conſideration. Theſe diſeaſes are more eſpecially confined to infants and children ſimilar in age, ſimilar in conſtitution, and conſiderably

conſiderably alike in all their general habits. Hydrocephalus internus and cynanche trachealis occur in the ſame ſeaſons, in the ſame ſituations, and appear to be brought on by the operation of the ſame remote and exciting cauſes. This latter obſervation does not ſo directly embrace diarrhea infantum, that diſeaſe occurring only in the ſummer ſeaſon—a ſeaſon which by means of atmoſpheric warmth, of impure air, of ſome peculiar gas *, or probably by the joint co-operation of theſe three agents, produces indeed a very ſtriking, and perhaps I may add, ſpecific effect on the inteſtinal and hepatic ſyſtems.

IV. Theſe complaints are known not very unfrequently to ſuffer a reciprocal alternation with each other. Thus, what practitioner of experience and obſervation has not ſeen ſometimes hydrocepha-

* From a ſeries of late experiments it appears, that *inflammable air*, (denominated by the French chemiſts *hydrogenous gas*) poſſeſſes qualities capable of producing a ſpecific determination to the hepatic ſyſtem. Does not ſuch a diſcovery give us reaſon to ſuſpect, that a ſuperabundance of this *ſubtle gas*, with which the ſummer atmoſphere of large and populous cities may be impregnated, acts, at leaſt, as an auxiliary cauſe, in giving birth to diarrhea infantum? And might not a courſe of well conducted experiments on this ſubject, lead on to future diſcoveries, equally favourable to the intereſt of humanity, and to the farther advancement of medical ſcience?

lus

lus internus, and ſometimes cynanche trachealis, produced by imprudently checking the inteſtinal diſcharge in diarrhea infantum previouſly to the neceſſary reduction of the exiſting fever? As inſtances of ſuch *mutation* or rather *tranſlation* of diſeaſe muſt doubtleſs have occurred to other phyſicians as well as to myſelf, I rely for ſupport, at preſent, on their own recollection and candor, and forbear to trouble my reader with the diſagreeable prolixity of minute details. In a caſe lately under my direction, the patient (a child nearly three years old) was firſt affected with evident ſymptoms of approaching hydrocephalus internus. Theſe were, by early and proper attention, all ſubdued in the ſpace of about three days. Four days afterwards febrile ſymptoms again returned; cough and difficulty of breathing occurred; true cynanche trachealis ſupervened; and notwithſtanding every oppoſing effort I could poſſibly make, my patient fell a ſpeedy victim to the uncommon violence of the diſeaſe.

V. The *morbid proceſſes* by which theſe local diſeaſes are immediately effected are doubtleſs of a nature truly *evacuant*—All evacuations evidently produce on the ſyſtem effects unequivocally *ſedative;* but all ſedatives certainly operate to the *prevention* or *removal*, and never to the production of general fever. We may therefore ſafely conclude on ſuch

principles as theſe, that the local diſeaſes, in immediate contemplation, cannot poſſibly act as the cauſe of that febrile affection by which they are uniformly accompanied.

VI. No inſtance I believe can be given in which a morbid and preternatural diſcharge of any fluid from ſmall veſſels of the ſyſtem, is of long and dangerous duration, unleſs ſuch diſcharge be kept up by the impetus of the blood ſubjected to a certain degree of febrile action *. Thus, for example, hemorrhages from the noſtrils, unleſs generated and nouriſhed by pre-exiſting fever, are generally ſo ſlight and tranſient as ſeldom to become objects of medical attention. The ſame obſervation may alſo be made, relative to occaſional attacks of hæmoptyſis brought on ſolely by violent exertions of coughing. In like manner, the catamenial diſcharge in females is generally regulated, both as to its quantity and duration, by the degree and continuance of concomitant fever. When the febrile affection is ſlight, the evacuation is proportionally moderate; but when the

* Although it be true that hæmorrhages are by ſurgical writers divided into *active* and *paſſive*, yet I muſt confeſs, I have very ſeldom, if ever, ſeen a caſe of hæmorrhagy truly paſſive, in which either the exceſs or obſtinacy of the evacuation was ſuch as to call for any high degree of medical attention.

former is conſiderable, the latter is, for the moſt part, profuſe and troubleſome. Now as the morbid evacuations immediately in queſtion, particularly thoſe of hydrocephalus internus and diarrhea infantum, are both conſiderable in quantity, and obſtinate in continuance, we may by accurate analogy with the preceding poſitions conclude, that they originally reſult *from*, and are ſubſequently kept up *by*, *an exceſs* of action in the arterial ſyſtem.

VII. The laſt argument I ſhall attempt to advance in favour of the original ſameneſs of hydrocephalus internus, cynanche trachealis, and diarrhea infantum, is derived from the moſt ſucceſsful method of treating theſe three truly dangerous and melancholy diſeaſes. I muſt here beg leave to obſerve, that when exhibited at a period ſufficiently early, the ſame individual remedies are found to prove equally efficacious in each. In a former part of this diſſertation, it has, I flatter myſelf, been in ſome meaſure eſtabliſhed, that the three topical diſeaſes of which I treat, make their firſt appearance in the ſyſtem under the form of a general fever of exceſſive action. It has been alſo juſt obſerved, that this fever may, in all caſes, be moderated and reduced by preciſely the ſame mode of medical treatment. Have we not then ſufficient teſtimony to warrant us in concluding, that in their original and febrile ſtate, theſe

melancholy

melancholy diſeaſes are unequivocally the ſame? But a brief detail of the moſt ſucceſsful method of cure ſhall conſtitute the ſubject of my concluding ſection.

SECT. VI.

OF THE TREATMENT OF HYDROCEPHALUS INTERNUS, CYNANCHE TRACHEALIS, AND DIARRHEA INFANTUM.

I HAVE finally arrived at the moſt important, and therefore the moſt intereſting part of the preſent diſſertation—that part which *alone* relates *immediately* to the practice of the healing art—that part which alone is directly applicable to the alleviation of human miſery. How extremely happy would I account, how peculiarly fortunate would I conſider myſelf, could I with equal propriety add, that part on which I am able to ſpeak with the fulleſt confidence in the truth of my principles and opinions! But a melancholy want of ſucceſs in ſeveral caſes, where at firſt my proſpects were the moſt fair and flattering, and conſequently my expectations ſufficiently ſanguine, has furniſhed me with a degree of profeſſional humility, and taught me, at leaſt, to doubt reſpecting the final reſult of medical remedies.

I have already intimated that it is not my intention to ſpeak, under the preſent head, of the cure of the three preceding diſeaſes after the topical effuſions have actually taken place. My obſervations ſhall be confined entirely to their prophylaxis or prevention. This deſirable end can be accompliſhed only by paying early and due attention to the preexiſting fever from which alone theſe topical affections derive their exiſtence.

I have in a former part of my diſſertation obſerved, that I conſider the three diſeaſes in queſtion as reſulting from an entire *unity* of fever, namely, a fever of exceſſive action. Effectually to reduce this febrile affection, and by that means prevent the ſerious and fatal conſequences that might otherwiſe enſue, ſhould conſtitute the ſole object of the phyſician when called in at an early period of diſeaſe. Thus, for example, if called to a child recently attacked by a fever of exceſſive action, accompanied with violent pain in the head, with cough and difficult reſpiration, or with frequent and copious evacuations of bile from the inteſtinal canal, although I might be led to apprehend the approach of hydrocephalus internus in the firſt caſe, that of cynanche trachealis in the ſecond, and that of diarrhea infantum in the third, yet my whole attention, inſtead of being directed to the poſſible occurrence of either of theſe topical

topical affections, at a future period, would be confined entirely to the ſtate of general fever already exiſting. Inſtead of reſting ſatisfied with topical remedies directed only to the head, throat, or alimentary canal, my attention would doubtleſs extend to the condition of the ſyſtem at large. All my views would be inſtantly pointed, and every poſſible effort would be immediately directed, to the complete reduction of the *exiſting fever;* from an entire conviction, that by the accompliſhment of this end, all its preſent ſymptoms would certainly diſappear, and all its troubleſome conſequences be effectually prevented.

As uniform experience has long ſince directed legiſlators to the propriety of attempting the prevention of approaching evils by means of ſalutary and wiſe inſtitutions, rather than of hazarding the diſagreeable and perilous alternative of eradicating vices already exiſting, by laws of a ſanguinary ſpirit, a ſimilar maxim of prudence ought doubtleſs to be adopted by practitioners of medicine. They ſhould ever bear in mind that it is not only a matter of more eaſe to themſelves, but alſo of more comfort and ſafety to their patients, always, if practicable, to prevent diſeaſes of every deſcription from becoming fully eſtabliſhed, rather than to riſque the experiment of removing them from the ſyſtem after

they have acquired a confirmed exiſtence. This is more particularly the caſe with regard to the topical diſeaſes embraced in the preſent diſſertation. If treated with ſufficient boldneſs and propriety at an early period, daily obſervation bears teſtimony that they may be very generally prevented; whereas, on the other hand, if ſuffered fully to form and thus gain unmoleſted poſſeſſion of their reſpective ſituations, it is indeed a truth equally humiliating to the baffled practitioner, and alarming to the afflicted patient, that they too frequently bid a ſafe defiance to every poſſible expedient and effort of the healing art.

From repeated experience and obſervation I am finally perſuaded, that this pre-exiſting ſtate of fever, (which ſhould be conſidered as the threſhold to the local diſeaſes immediately in queſtion), may, in general, be moſt ſpeedily and certainly ſubdued, by attentively purſuing the two following *principles*, or general *indications* of cure.

Firſt. By ſecuring the body, as far as poſſible, from the acceſs and operation of all *external* and *adventitious* ſtimuli.

Secondly. By diminiſhing, to a certain extent, the quantity and impreſſion of thoſe *internal* and

more

more *eſſential* ſtimuli, to the action of which the ſyſtem is always ſubjected.

The firſt of theſe general indications is to be anſwered only, by purſuing, to a proper length, what medical writers have denominated the *antiphlogiſtic regimen.* The temperature of the chamber muſt be equable and moderate, not exceeding the ſixtieth degree on the ſcale of Fahrenheit; and the atmoſphere of the ſick-room muſt be frequently changed —perfect reſt ſhould be enjoined—light ſhould be, in a great meaſure, excluded—converſation and noiſe ſhould be ſtrictly prohibited—the mind ſhould be zealouſly guarded againſt paſſions and emotions of every kind; for in all caſes of violent febrile affection, it is indeed an important deſideratum that the patient's mind ſhould be ſuffered to remain in a ſtate of the moſt unruffled tranquillity *: All food

* Much has been ſaid by medical writers reſpecting the ſalutary effects of *fear* and other debilitating paſſions of the mind in caſes of *general fever.* That ſuch mental affections might be rendered uſeful in the treatment of febrile diſeaſes, I was taught to believe as one of the eſſential articles of my medical creed. Were I to reſt ſatisfied with ſpeculation alone on this ſubject, I would ſtill ſubſcribe to the plauſibility of the ſame opinion; for it is doubtleſs a favourite child of hypotheſis. But as it is highly unphiloſophical to admit, as deciſively certain, any medical tenet which we have not ſeen ſanc-

of a highly ſtimulating nature, even if called for, ſhould be carefully withheld—aqueous and ſubacid liquids may be uſed in conſiderable quantities; but both drink and aliment ſhould be adminiſtered cold rather than warm. By a ſteady and uniform adherence to ſuch directions as theſe, the fever may be, if not moderated, at leaſt prevented, in moſt inſtances, from acquiring any additional violence.

The ſecond indication of cure ſhall be now made the ſubject of a few general obſervations. This can be fully and ſatisfactorily anſwered in no other way than by a free and judicious uſe of that claſs of remedies denominated *ſedatives*.

1. Of this claſs the firſt, and by far the moſt powerful is the evacuation of *blood-letting*. Of this re-

tioned by the teſt of experiment, this poſition reſpecting the utility of ſuch affections of the mind, in the cure of fevers, muſt as yet remain, with me, a problematical point. Were phyſicians, however, more intimately acquainted with the *nature*, but, particularly, had they at command a complete *regulation*, of the human paſſions, they would then be certainly able to render them in ſome meaſure ſubſervient to the alleviation and removal of general diſeaſe. In particular caſes of dropſy and of what may be denominated *ſthenic inſanity*, fear and terror have been known frequently to produce effects the moſt ſtriking and ſalutary.

medy

medy the *repetition* and *extent* muſt be ſubmitted entirely to the diſcretion of the practitioner—*They* can be duly defined and regulated only by the exiſting circumſtances of each particular caſe. It may not be improper however to obſerve, that I have always, in febrile affections, derived the moſt unequivocal and ſtriking advantage from this evacuation, by having it performed near to the commencement of their evening exacerbations.

II. The next remedy to be mentioned is that of *purgatives*. Too much attention cannot poſſibly be paid to evacuations by ſtool, particularly in thoſe caſes of fever in children, where there exiſt evident ſymptoms of an undue determination to the head or aſpera arteria. In ſuch inſtances purgatives of conſiderable activity are found to be greatly ſuperior to thoſe that are more lenient and mild.

III. Sudorifics. If a free, copious, and general *perſpiration* can be brought on by the uſe of antimonials or other remedies that do not rouſe the ſyſtem to an increaſe of febrile action, it ſeldom fails to be productive of a ſalutary effect.

IV. Diuretics. Reſpecting this claſs of remedies I have indeed but very little to advance: I think

think however that I have ſometimes ſeen an increaſed flow of urine excited, and thus a partial reduction of fever effected, by means of *ſquills*, as well as by certain combinations of *digitalis* and *nitre*.

V. Sialogogues. I have certainly, in a variety of inſtances, ſeen truly alarming affections of the head, together with conſiderable degrees of concomitant fever, greatly alleviated by means of a ſlight mercurial ptyaliſm. In moſt caſes therefore of impending hydrocephalus internus, more eſpecially where recourſe has been had in vain to other evacuations, I would judge it expedient and proper to exhibit mercury in ſuch quantity and under ſuch form, as may be beſt calculated to produce a ſpeedy diſcharge from the ſalivary glands.

VI. The laſt ſedative *evacuant* I ſhall here recommend is that of *cold*, applied directly to the head, and occaſionally to other parts of the body. Let not ſuch orthodox phyſicians as are accuſtomed to view objects only through the medium of an eſtabliſhed ſyſtem, be ſtartled at my novelty in claſſing cold among thoſe remedies denominated evacuants. As a real evacuant I conſider, as a real evacuant I uſe, this remedy in my practice as a phyſician, and as a real evacuant I truſt it will appear to every unprejudiced

prejudiced mind, from a view of the following ſuccinct explication.

Heat is a fluid known to be as natural, as eſſential to the living ſyſtem of man, as the chyle that moves in the lacteals, or the blood that circulates through the arteries and veins. During the exiſtence of general fever a morbid accumulation of heat ſupervenes: The elimination of the ſuperabundance of this fluid from the ſyſtem muſt be effected by a proceſs equally evacuant with that which conveys off a portion of the blood. But this proceſs can be in no other way *directly* accompliſhed than by ſubjecting the ſyſtem to the immediate influence and action of cold. Here then the remedy of cold operates as the efficient cauſe of a literal evacuation; and hence may be conſidered as the real and ſpecific *evacuant* of heat.

Should any topical pain or uneaſineſs ſtill exiſt, even after the fever has been thus reduced by a due perſeverance in the general indications of cure, local remedies, ſuch as cupping, bliſtering, &c. ſhould be immediately applied.

I have thus in a very brief, general, and I am ſorry to add, ſuperficial manner, delivered the reſult of

of my experience and obſervation relative to the hiſtory, the nature, and the early treatment of certain diſeaſes peculiar to infants and children.

But to cloſe my diſſertation without paying a tribute of general acknowledgment to the *medical profeſſors* of that inſtitution, under the auſpices of which I have purſued my ſtudies with equal pleaſure and advantage, and from the authority of which I am now about to derive the higheſt honours of my profeſſion, would indeed be an act of high injuſtice to my own feelings, and of criminal ingratitude to thoſe, who have been long my public patrons, and long my private friends.

To you, gentlemen, my *obligations* are numerous; to you my beſt *acknowledgments* are due—Accept the *latter;* the *former* no acts of mine can ever cancel, no poſſible combination of circumſtances can ever wholly annul: Deep in my memory are your offices of *politeneſs* and *attention* imprinted, never to be effaced by reverſe of fortune or by lapſe of time.

I truſt, gentlemen, that my future conduct as a fellow-citizen, as a fellow-practitioner, and as a fellow-member of various literary inſtitutions, ſhall ever

furniſh the moſt ample and indubitable teſtimony of the ſincerity and truth of what I now declare.

Impreſſed with the moſt cordial wiſhes for a long continuance of your utility and fame in *public*, and of your individual reſpectability and happineſs in *private* life, I now bid you, as your pupil, a laſting and an affectionate adieu.

THE END.